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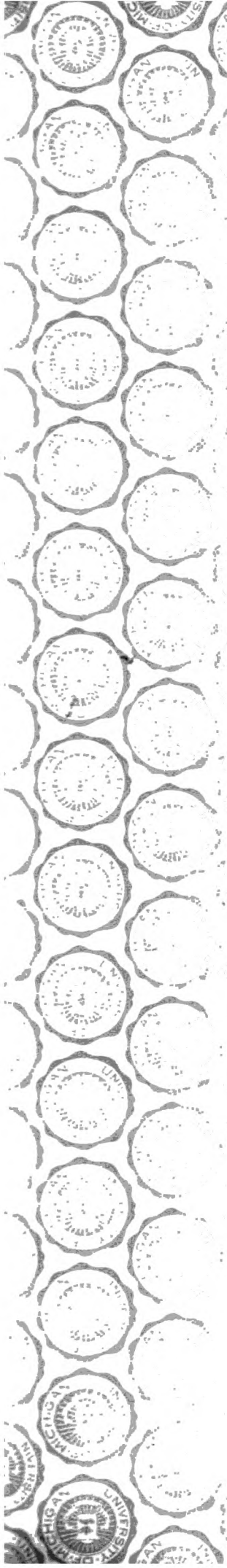
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MARCH 7th, 1903, to FEBRUARY 27th, 1904.

Publishing Offices:

CORDINGLEY & CO.,
39 & 40, SHOE LANE,
LONDON, E.C.

Telephone Number :
1254, Holborn.

Telegraphic Address :
"Indus," London.

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v.5

Index to Vol. V.—Motor-Car Journal Supplement.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, MARCH 7, 1903.

[No. 209.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



AT the Annual General Meeting of members of the Automobile Club, on Friday, the 27th ult., Mr. R. W. Wallace, K.C., the chairman, announced that His Majesty the King had consented to become the patron of the A.C.G.B.I. At the same meeting it was announced that a great many ladies having expressed a wish to join the Automobile Club, and the accommodation being insufficient, it had been decided that a Ladies' Automobile Club should be formed to work in harmony with the Automobile Club. We learn that a great many ladies have promised to join, and preliminary arrangements have been left in the hands of Lady Cecil Montagu.

The Club Committee.

A LONG discussion took place with regard to the election of the Committee, and Earl Russell is to be congratulated on the tact with which he piloted a change so that a ballot, in which all members can participate, will have to be carried out. In future only one half of the Committee will retire at each annual general meeting. Meanwhile, several new members have been elected to the Club Committee for the current year, including Captain K. R. Campbell, the Hon. Arthur Stanley, M.P., Messrs. E. H. Cozens-Hardy, S. F. Edge, W. G. D. Goff (Chairman of the Irish Club), C. Jarrott, G. Montagu, M.P., H. Norman, M.P., L. de Rothschild, A. F. Yarrow, and the Master of Ruthven, D.S.O. Among those who did not gain election were Messrs. W. H. Astell, C. Cordingley, Hon. Evelyn Fitzgerald, W. Hancock, Ballin Hinde, F. J. Horsey, J. H. Knight, A. Ledger, W. E. Moss, C. Harrington Moore, F. R. Simms, C. E. Shaw, M.P., and W. Younger, M.P.

Motoring in the Gale.

SUNDAY was scarcely an ideal day for motoring—the weather being cloudy, the roads greasy, and the wind blowing almost a hurricane. Having, however, made arrangements to visit Brighton, we donned our *parapluies*—most indispensable of garments in such weather—and duly set out, journeying, to avoid all tram lines, by our usual route from Bloomsbury via Putney Bridge, Wimbledon, Sutton, and Reigate. Except on Putney Bridge—where a big car with a honeycomb radiator passed us—only one automobile was seen, and that on a cross-road near Crawley. At this place a short halt was made, and thereafter progress was with “deeficulty” over the greasy chalk, Brighton being reached at one o'clock. The sea was in angry mood, the billows white crested, and the huge “rollers” dashed thin spray all over the front, bombarding us with pebbles. The wind all the way down had been dead in our faces, and though it had little or no effect on our “forty,” yet at times we had to slow down to recover our breath. Our party numbered four, including two ladies, and the wind and the mud had left a good “impression” on us.

Brighton to London.

As usual, we found the “Ship” garage full, but not too full to find accommodation for our car, and it will be good news to motorists to know that extensive alterations and enlargements will shortly be made in this most convenient and popular of garages. Shortly after our arrival Mr. Midgley and party arrived on a 16 h.p. Napier, having suffered from the wind and rain like others. And it did rain as we started for home, a short drive along the front having to be abandoned, although not till we had passed by the “Metropole,” where an olive-coloured 40-h.p. Mercedes was seen. The passengers, on our return, were getting into their seats, and shortly dashed by, but fortunately they took the Lewes, and we the London road, otherwise our car might not have liked to have ridden behind in their mud. The rain drove pitilessly, forcing up the sand and mud into our faces and on to our garments until we were covered with a thick plaster. At Reigate the rain ceased, and at the “White Hart” we drew up for a cup of tea, and, removing our “umbrellas,” once again presented a cleanly appearance. The rest of the journey up Reigate Hill was performed quietly, and so we reached town, having, notwithstanding the inclemency of the weather, thoroughly enjoyed our ride of one hundred and ten miles. We might mention that at Reigate we met Mr. W. Ducros on a Panhard and Mr. Sangster on an Ariel.

Conflicting Evidence Results in Conviction.

MOTORISTS travelling in the Dorchester and Weymouth district should be careful, for the way in which the new guessing competition is practised by the police is positively alarming to self-respecting travellers by automobile. At Dorchester on one day last week a motor-car driver was fined for driving too fast, and the superintendent of police said he shouted to the motorist, but “he did not, however, think that defendant heard him,” and the Bench fined him half-a-crown. On the following day the same driver was summoned for a similar offence along the front at Weymouth. A cab proprietor described the pace as being forty miles an hour, a wheel chair man as twenty-five miles per hour, and the police evidence was in favour of eighteen or twenty miles per hour. With such a conflict of evidence, acquittal seemed in sight, and many in court were surprised when a fine of forty shillings and costs was imposed. Moral—avoid Dorchester and Weymouth as well as the pleasant lanes of Surrey.

A Yorkshire Discussion.

THE paper read before the Yorkshire Automobile Club by Mr. Herbert A. Jones, referred to in last week's *Journal*, was well illustrated with diagrams showing the De Dion and other types of contact in their correct and incorrect adjustments. Mr. Jones also showed a large number of De Dion, Basse and Michel, and Charpentier high-speed coils and electric accumulators. Mr. Jones first described the various systems of ignition—magneto-electric, De Dion type, trembling coil and wipe spark. After fully explaining the need of quick breaking in the contacts, this was practically demonstrated.

Then came the description and theories of the cause of the improvement in sparking when using the gap spark. Mr. Hepper and Mr. Winn took part in the discussion. Subsequently Mr. Alf. W. Dougill described the magneto system of ignition, drawing attention to its simplicity. In the discussion on this subject Messrs. Jones, Winn and Read gave their views. Towards the close of the evening Mr. Herbert Broadbent gave a description of the low-tension system of sparking as originally used on the Mors cars and the new system four-cylinder Clements. In the discussion on this and the magneto system there seemed many dissentients to the use of the mechanically operated sparking plugs, it being the impression amongst those in favour of the coil and battery ignition that this complicated matters, but the upholders of these systems maintained that the increase in mechanical parts was outbalanced by the doing away of the coil, accumulator or battery, contact breaker and most of the wires, also the non-liability of short circuiting.

The South African Club.

ELSEWHERE we give a full account of the first meet of the South African Automobile Club, of which the Governor of Cape Colony, Sir Walter Hely-Hutchinson, G.C.M.G., is the president. The proceedings appear to have been thoroughly successful, while the presence of Mr. Rudyard Kipling at the dinner gave added interest to the affair. He dwelt upon the dust-proof car required in South Africa, and advised his fellow-motorists never to pay more than £1 for a dog. Any amount paid beyond that was blackmail, and meant ruin.



Three Horseless Vehicles.

The Business Show.

IN three weeks' time the great Automobile Exhibition at the Agricultural Hall will be opened to the public, and already exhibitors are approving designs for the decoration of stands and generally attending to the picturesque character of their displays. From the schemes for stands that we have seen it is evident that the forthcoming display will vie in attractiveness with the Paris Salon. Last year everyone remarked upon the preparedness with which exhibitors awaited the public, and all who have been allotted space should use every endeavour to maintain the record of the past in this respect. Just now there seems a general holding back on the part of the public in giving orders; and it is confidently anticipated by the trade that the March Show will be the business exhibition of 1903.

The Motor Volunteer Corps.

TUESDAY'S "Gazette" contained the interesting announcement that the King had been graciously pleased to approve of the formation of a corps to be designated the "Motor Volunteer Corps." This new branch of the service has been inaugurated by the efforts of Mr. Mark Mayhew, L.C.C., who

has given reality to the idea of forming a corps consisting of owners of motor-cars who should be willing to keep in readiness for use in manoeuvres and, if necessary, in more serious operations, automobiles of all types, and to drive them or provide drivers when required. It was originally suggested to name the corps the "Automobile Volunteer Corps," but the King is said to prefer the title under which its official formation is announced in the "Gazette." A special uniform has been designed, officers have been appointed, and terms have been arranged with the War Office upon which members of the corps will be remunerated for their services.

The A.C. Discussion.

FRIDAY'S discussion at the Automobile Club showed a considerable falling off in attendance, although the title of the paper read—an abstract of which appears on another page—was attractive enough. Sir David Salomons presided in the early part of the evening, Mr. F. H. Butler subsequently taking the chair, the speakers including Messrs. H. Austin, W. Hancock, J. L. Sampson, Martin Duncan, and H. J. Swindley. Sir David said the main idea of inventors in automobile work should be not to seek for what they knew nothing about, but to improve upon what was already before them. Mr. Austin agreed that it was better to use a principle fairly well known and eliminate its faults than to attempt an entire revolution. Although many engineers looked askance on the change-speed gear, he thought it had served a very good purpose, and had brought about a result which everybody wanted, viz., a flexible engine. They wanted an internal combustion engine with the same flexibility and same advantages as a steam engine. If chains were treated properly, and were properly made, he believed better results could be obtained than by the use of the live axle. It was a bad plan to make the dead-weight on the axle and on the tyres greater than was absolutely necessary. On the subject of horizontal and vertical motors he preferred to say nothing, having rooted ideas on the subject; but he was prepared to admit that it was possible to have a good car with a vertical motor, although he believed the horizontal position was the better of the two.

Automobile Fire Engines.

FROM several leading towns comes news of trials with automobile fire engines. Liverpool, Portsmouth, and Leyland have already these modern appliances, and even in some of our distant colonies the authorities are moving faster in the matter than are those at home. New Zealand and South Africa have their automobile fire engines. Last week the motor fire engine of Messrs. Merryweather was exhibited before the Watch Committee, and the chief officers of the City Fire Brigade at Birmingham, whilst the mayors of some of the neighbouring towns, including West Bromwich, were also present. At Tottenham a 300-gallon automobile steam fire engine, and also an automobile chemical engine, fire escape, and hose tender, are being provided. The other day at Penge an interesting contest took place under the auspices of the Penge Urban District Council, to determine the relative merits of the motor steam fire engine and the horse vehicle of the usual type. In the end the automobile engine triumphed over its old-fashioned rival, so that the movement is now on a fair way to become practical.

Views in 1900.

ON Friday, the 6th inst., an important meeting is being held at the Automobile Club to consider legislative proposals which have recently been placed before the country by that organisation. Much has been said by the leaders of the agitation in favour of the identification of automobiles by numbering or otherwise, and we are afraid that the accommodation provided for the meeting is not sufficient to house the opposition that would like to make itself heard in the matter. It may be

well at this juncture to remind motorists that in December, 1900, the Committee of the Automobile Club sent a circular letter to County Councillors throughout the country objecting to the numbering of motor-vehicles, and it was pointed out that "by voting for the compulsory numbering of motor-vehicles under existing or suggested conditions you will be imposing a restriction which will cripple an important industry." That statement was widely circulated and generally quoted throughout the country. It was also pointed out in the Blue Book issued by the Club in the same year "that the numbering of a gentleman's private carriage was such a departure from the accepted conditions of life in this country that it would lead the public to believe that the man who prefers to use a vehicle propelled by an engine to one drawn by a horse is in the eyes of the authorities a person who is likely to misconduct himself." It was clearly shown that the driver of a numbered motor-vehicle would be subject to continual and rigid persecution, whilst there was no just reason why the proposed numbering should apply to motor-vehicles any more than to dogcarts and other light vehicles drawn by horses.

Why Change in 1903?

THE Club also pointed out that many gentlemen were hesitating in their purchases of motor-vehicles in consequence of the proposed restrictive measures of County Councils, and the facts thus produced undoubtedly contributed to dispel the agitation that was then being aroused against automobilists. We are reminded of the interesting events of the latter part of 1900 by the fact that a meeting of the Executive Committee of the County Council Association has just been held at which the resolutions lately passed by Councils on the subject of motor-cars were considered. These resolutions embodied provisions for the identification of cars, examination of drivers, and other regulations, but after discussion it was agreed that while sympathising in the main with the suggestions of the various bodies interested, the Executive thought the matter had better be left in the hands of the Local Government Board, who would again be asked to press forward alterations of the existing law. It will appear, therefore, from this that the Councils Association, in a measure, are weakening in their advocacy of the numbering proposal, and if such is the case it seems to us that motorists will be wrongly advised if they advocate the proposal, whose only friends outside official automobile circles are the prejudiced persons who sit on magisterial benches and fine motorists on the contradictory evidence of policemen, cab-drivers, and others who have not yet become accustomed to rapid means of locomotion.

Another Record.

MR. ROLLS has been record-making on the Welbeck Estate, and managed to attain a speed of 82.8 miles per hour. Over the kilometre course at Clipstone he had four runs, the best of which gave a time of 27 secs. Those who went to Welbeck last year will remember that the course has a slightly favouring gradient. The French official record on the Dourdan road is 29 secs., a speed of 77 miles per hour. Last year Mr. Jarrott went over the kilometre at Clipstone in 28½ secs., but that was not officially recognised. It is interesting to note that Mr. Rolls drove a 70-h.p. Mors, which he has entered for the Paris-Madrid race, and it was on a Mors car of similar make that Fournier made the best record at Dourdan. The car owned by Mr. Rolls, and illustrated on page 11, has been much modified by him in order to increase its speed and efficiency.

Motor Buses and Traffic.

ON Monday Mr. Worby Beaumont opened a discussion on London traffic at the meeting of the Society of Engineers, and pointed out that a well-worked motor-omnibus service would save much space and time, but this would not be "until omnibus companies use motor-vehicles on a large

scale, so that no vehicle shall run more than a certain maximum speed; and see after the mechanical requirements by a thorough system of daily examination, adjustment, repair, and making right being carried on under a properly-organised staff." Unfortunately, London bus companies seem to be playing a waiting game, and horse-drawn vehicles are as numerous and cumbersome as ever. In the provinces, however, greater activity is being shown, and a motor-omnibus service is about to be established at Hastings. Eastbourne, as already recorded, is shortly to make an effort in the same direction, and at Bournemouth, and along the coast, public motor services will be features of the coming season. The advantage in reducing the volume of traffic on the roadways will be considerable in all these large places.



Stuck in the Snow in the Highlands.

"The Motor Bar."

MR. HENRY NORMAN'S sumptuous magazine, *The World's Work*, is keeping a watchful eye on automobile developments, and in the current number the editor has a comprehensive article on the social and industrial changes likely to be associated with "the coming of the motor." Quoting figures from this *Journal* and other sources, Mr. Norman—who, by the way, is one of the M.P.'s just elected to the Automobile Club Committee—says "that everybody who keeps a horse may keep a car for less money, and that thousands of people who have never felt that they could afford a horse will certainly keep a small car, as soon as they learn the cheapness and reliability of it." Altogether, it is a very roseate picture coloured by this new convert, and so far as the prospect of a change in the old coaching inns is concerned, confirmation comes in the name of a public-house just licensed in Dublin. This is called "The Motor Bar," and only requires a licence to store petrol to make it absolutely indispensable to the motorist.

New York London Traffic.

CAPTAIN PIPER, a leading official of the New York Police, is now in London making inquiries into the management of street crowds by the Metropolitan Police. One thing seems to have struck this American official, and that is the comparative absence of motor-vehicles, compared with what is the case in New York. In the American city, all the chief retail houses have motor-vehicles, and they are very glad to get rid of the horse in the streets. Whilst Captain Piper regards the ordinary omnibus as the best means of seeing London, he believes that the ultimate development in this direction will be the use of motor-vehicles such as are slowly finding their way along the main thoroughfares of the capital. He points out that the adop-

tion of motor-buses would considerably decrease the apparent traffic in the streets, and by doing away with the horse a quicker pace would probably be maintained by the traffic. On this point it is interesting to note his acknowledgment of the fact that our London traffic keeps on the move better and quicker than does the traffic of New York. One statement he made to an interviewer is rather amusing, viz., that our cabs are faster than those of New York. The motorist who has attempted to extricate himself from two or three creeping, crawling cabs which persist in maintaining as slow a pace as is possible, will appreciate the gentle satire of this remark.

Fourteen Miles an Hour.

ON the 31st inst. the new regulations issued by the Local Government Board of Ireland, under the Locomotive and Highways Act, 1896, will come into operation in the Emerald Isle, and it would appear that the authorities across the Irish Channel have more recognition of what is wanted by the public than those on this side. The new regulation fixes the maximum speed limit at fourteen miles an hour, with the provision that the light locomotive must not be driven with any greater speed than is reasonable and proper, having due regard to the traffic of the highway. In England and Scotland the maximum speed is twelve miles an hour, so that it will be seen that the Irish authorities have taken advantage of the little further privilege allowed by law. It is also provided that the driver of a motor-car or motor-bicycle must not leave his machine without having previously taken full precaution against it being started in his absence. Owners of trailers drawn by motor-bicycles will be interested in the exclusion of the motor-bicycle from the old regulation restricting the speed of the light locomotive drawing a vehicle to under six miles an hour. Provided the trailer has a brake, the bicycle can travel at fourteen miles an hour—a concession that will be appreciated by the growing number of people using this form of carriage.

The Gordon Bennett Race.

HAVING got over its preliminary trouble, the Light Locomotives (Ireland) Bill has passed the second and third reading in the House of Commons without interruption and without discussion. It now only remains for Mr. Montagu's measure to be adopted by the House of Lords for a clear ground to be obtained for the holding of the Gordon Bennett Race in Ireland. The Curragh Camp is located in the centre of the circular route over which the race will be run, and we do not see why the officers and men in the great military centre should not be utilised in lining the road and generally proving helpful to the organisers of the contest. On the Continent the military authorities are always much *en evidence* on occasions of these great international motor-car races, and now that legal difficulties have been got over, the soldiers in Ireland might be as reasonably helpful as have our legislators at Westminster.

Manchester Automobilists and Mr. W. J. Galloway, M.P.

UNFORTUNATELY for Mr. Galloway, the annual meeting of the Manchester Automobile Club has immediately followed his action in delaying the passage of the Bill legalising the Gordon Bennett race in Ireland. Naturally he provided the speakers with much opportunity for criticism, which eventually centred in the unanimous adoption of a resolution worded as follows:—"This meeting deprecates the conduct of Mr. W. J. Galloway, M.P., on the second reading of the Light Locomotives (Ireland) Bill, and feels that his conduct is worthy of condemnation in attempting to retard the passing of a measure which must tend to foster the motor industry, and from which immense benefit must accrue to the people of Ireland, especially seeing that in Ireland the measure has received on all hands unanimous support and approval. This meeting is further of opinion that

the proposed race will tend to increase the friendship between the English and Irish peoples."

Careless Motorists.

THE other night as Mr. H. W. Sadd, of Maldon, was returning home, his horse was frightened by a motor-car bound for Colchester and shot the trap and its occupants into a hedge. The riders on the car proceeded on their journey without pulling up. We would suggest that people who have so little regard to the comfort and convenience of others, and who lack the common courtesy of the road, are doing more to further the movement for the numbering of vehicles than anything that could be suggested by the prejudice of opponents. It is a pity that the whole army of motorists should be condemned for the sake of the few who seem to go careering about the country utterly disregarding the consequences.

Our Fifth Year.

WITH this issue the *Motor-Car Journal* enters on its fifth year. The four volumes that have now been closed present a record of activity in the automobile movement that must have surprised even its most ardent pioneers. As a promoter of social intercourse, a reviver of the prosperity of the highways, and an industry that will bring wealth to many and comfort to thousands, the motor-car and motor-cycle are making their influence felt. The *Journal* has marched side by side with the progress of the movement, and has so consolidated its position, that at the present time its importance and influence are second to that of no other similar journal in the world. The index to the volume just completed, which will be issued next week, will indicate how completely the progress of automobilism is recorded in our pages from week to week.

A GLASGOW to London non-stop trial will be held on May 13th and 14th.

THE Automobile Club has decided to promote motor-cycling contests for amateurs.

TO-DAY (Saturday) the Nottingham Club will have the opening run of the season to Nanpanton.

ON Saturday last about twenty members of the Sheffield Club participated in a run to Dunford Bridge, a wild spot on the moors between Penistone and Manchester.

AN agreement has been made between the Motor Traction Company, Limited, and the Fischer Motor-Vehicle Promotion Syndicate, by which the latter concern acquires the undertaking and property of the former.

IT is claimed that Detroit, Mich., will produce more automobiles this year than any other city in the world. The combined output of the Olds, Cadillac, Northern, Ford and other factories is estimated at over 10,000 vehicles annually.

IN "Home Words" for March, we notice an interview with Miss N. G. Bacon, the intrepid lady journalist whose adventures in the early stages of the 1,000 miles Trial brought her into considerable prominence in automobile circles.

STIRLINGS MOTOR CARRIAGES, LIMITED, who are now devoting considerable attention to the construction of motor-boats, are opening new riverside works on the Thames at Strawberry Vale, Twickenham; they are furnished with large dock and slipways, and all appliances necessary for the fitting out and repair of motor-boats.

THE A.B.P. Accumulator Company, Limited, has been registered with a capital of £20,000 to acquire the accumulator department of the business of Ashmore, Benson, Pease and Company, Limited, including Patent No. 22,143, dated October 6th, 1900, granted to Mr. H. T. Lugard in respect of an invention for improvements in electrical accumulators, and to carry on the business of accumulator manufacturers. The registered office is at Parkfield Works, Stockton-on-Tees.

THE "SAVAGE" STEAM-WAGON.

THE latest English firm to take up the construction of heavy steam-wagons is Messrs. Savage Bros., Limited, of King's Lynn, one of whose vehicles is illustrated herewith. The main frame is built of channel steel, stiffened by gusset stays. The axles are of steel, and carry the body of the wagon through heavy plate springs. The wheels are of wood, with steel hubs of the artillery type, the latter being provided with brass brushes. The outside tyres are of steel, with smooth faces, and of good width for road work. A patent "roughing" arrangement can be attached to the hind or driving wheels when necessary in frosty or greasy weather. The boiler is of the water-tube type, designed for a constant working pressure of 200 lbs. per square inch. The steam chamber consists of a solid-drawn mild steam tube, while the circulating tubes are of Mannesmann solid-drawn manufacture. The inlet feed valves are

from the crank shaft. A feed-water heater is provided in connection with the exhaust steam-pipe, and raises the feed water to a high temperature before it enters the boiler. An auxiliary feed pump is also provided. Two speeds, giving three and six miles per hour, are provided, the power of the engine being conveyed through spur wheels to the differential countershaft, and from the latter to the rear road wheels by side chains. The sprockets are attached to the hind or driving wheels by means of steel brackets containing spiral springs; these springs come into compression when starting the load, thereby relieving any sudden jar on the motor and gearing. All the steel driving shafts are carried in malleable steel brackets having compensating gun-metal bearings, which allow for any unevenness of the roads and prevent cross binding. The platform area is of ample size for bulky goods up to four tons, and can be used with or without moveable sides. The designs of these vehicles have been made to meet the requirements of the Act as to the tare weight of heavy



The "Universal Carrier," built by Messrs. Savage Bros., Limited.

of Strear's patent accessible pattern, which allows of the examination of the valve and seating whilst under steam. Klinger water gauges are used, as also a Bourdon patent steam gauge. All steam exhaust and other pipes are of solid-drawn copper. Coal or coke can be used as fuel, this being carried in a large bunker at the side of the boiler. The latter is, however, so arranged that liquid fuel can be used for steam-generating purposes instead of coal or coke. A steam-operated water lifter and suction hose are provided for taking water from a river or other source by the roadside. The engine is of the double-cylinder compound type, running at a speed of 450 revolutions per minute. The high-pressure cylinder is 4 in. in diameter, the low-pressure cylinder 7 in. diameter, the stroke being 5 in. The valves for supplying the cylinders are of the piston type and work in valve liners, which can easily be replaced when worn. The valve and reversing motion is of a specially designed single-eccentric type, and has a large wearing surface. All the necessary stop valves and reversing gear are placed within convenient reach of the driver. The feed pump is worked by reducing gear

motor-vehicles. One of these wagons was recently submitted to a trial, being loaded with 3 tons 12 cwt. of barley in sacks from a steamer lying in Lynn Docks. This was successfully conveyed to the mills of Mr. F. Heading, at Watlington, a distance of seven miles, over roads in bad condition after the heavy rains and frosts, the only mishap being a burst steam pipe at the journey's end. In view of the fact that the trial took place shortly after the vehicle left the erecting shop, without previous test, the result was considered most satisfactory, and we learn that Messrs. Savage have already received a number of inquiries for their "Universal Carriers"—the name they have given to their new steam wagons.

THE Mersey Docks and Harbour Board have adopted the recommendation of their Works Committee to purchase three steam motor wagons. Previous experience of the Board with motor wagons has been that they have conduced to economy, as well as proving a great convenience, in comparison with the use of the horse.

THE FIRST SOUTH AFRICAN MOTOR-CAR MEET.

FROM OUR OWN CORRESPONDENT.

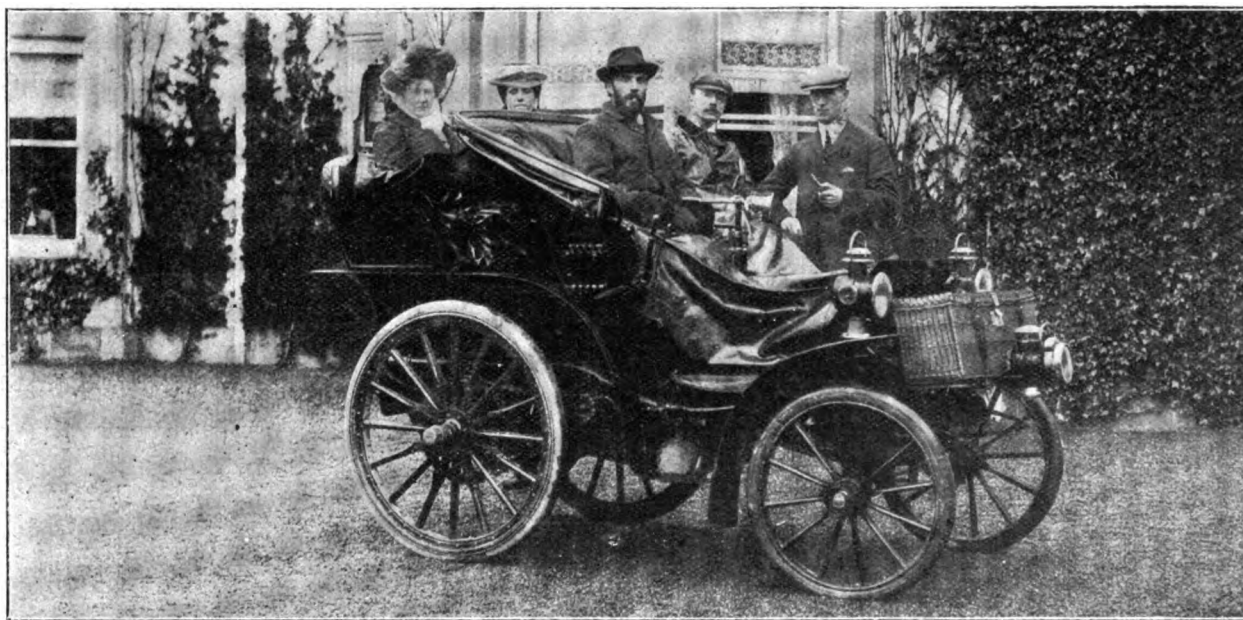
CAPETOWN, FEBRUARY 9TH.

GLORIOUS weather prevailed on Saturday, for the inaugural meet of the Automobile Club of South Africa. There was not a very large attendance, but the frequent applause showed that the spectators appreciated the exhibition given. The meet was not quite what one would term a race meeting in the sense of high speeds, as on the Green Point track as constructed, it would be impossible to attain a speed of more than 36 miles per hour with safety. Besides, none of the cars were designed for racing except one, and that was withdrawn from the event. Without counting quads and motor-cycles, there were twenty-one cars on the ground, including the Wolseley owned by the late Mr. Cecil Rhodes. The result of the various events was as follows:—

FIVE MILES MOTOR-CYCLE HANDICAP.—Mr. J. Thornton, 1½-h.p. Minerva, scratch, 1; Mr. W. M. Jenkins, 1½-h.p. Thomas, 160 yards, 0; Mr. J. Whitehead, 1½-h.p. Werner, 400 yards, 0; Mr. W. C. Fenton, 1½-h.p. Werner, 400 yards, 0.

14-h.p. New Orleans, R. Arderne-Wilson, 4½-h.p. Cudell, A. C. Fuller, 6-h.p. De Dion, H. L. Jenkins, 8-h.p. Darracq, W. M. Jenkins, 6-h.p. Toledo steam car, Toll, Conrad steam car, M. Irving, 12-h.p. Gladiator, B. Langley, 10-h.p. Georges Richard, M. Delponte, 4-h.p. Renault, J. W. Courtis, 6-h.p. Baby Peugeot, Donald Menzies, 6-h.p. De Dion, W. Porter, 4½-h.p. De Dion, E. Edwards, 7-h.p. Panhard, S. H. Adams, 10-h.p. Wolseley, J. Klerk, 4-h.p. Buffalo, Loton, 4-h.p. Oldsmobile, G. Edwards, 6-h.p. Gladiator, Rudge-Whitworth Agency, 12-h.p. Lanchester, Mr. Saunders driving, Garlick's Motor Supply, 6-h.p. Waverley electric stanhope.

LARGE CAR PURSUIT RACE, 3 Miles, 1st Heat.—Mr. B. Langley's 10-h.p. Georges Richard, J. Whitehead driving, 1; Mr. S. H. Adams' 10-h.p. Wolseley, Mr. Saunders driving, 2. The latter was the late Mr. Cecil Rhodes' car, and was raced with canopy and all on. The Georges Richard gained fast from the start and won by 250 yards. The time was taken approximately, and was about 6m. 20s. I think the Wolseley would have shown up better with her canopy and mudguards off, and pneumatics on her driving wheels. She is known out here as a very fast car on the road, and was used during Mr. Rhodes' illness to run in and out of Cape Town with doctors, etc.



Prof. Dawson Turner, of Edinburgh, at the helm of his 10-h.p. Delahaye Car

SMALL CAR PURSUIT RACE, 3 Miles, 1st Heat.—Mr. J. W. Courtis, 6-h.p. Baby Peugeot, 1; Mr. D. Menzies, 6-h.p. De Dion, 2. Time, 7m. 21s.

2nd Heat.—Mr. H. L. Jenkins, 3½-h.p. Darracq quad., 1; Mr. J. G. Rose, 4½-h.p. De Dion, 2; Mons. M. Delponte, 4-h.p. Renault, 0. Time, 5 min. 55 sec.

Final Heat.—Mr. Jenkins' quad would have won this race, but that gentleman, when he found that his machine was objected to, withdrew the flyer. So the tussle came between Mr. Courtis's Peugeot and Mr. Rose's De Dion voiturette. A splendid race resulted in the Peugeot car winning the race by 400 yards.

PROCESSION AND MANŒUVRING OF CARS.—This was a very interesting spectacle. The cars formed a procession quite 350 yards long, and Mr. Rose led them through a series of evolutions, which, while being attractive and pretty, were highly instructive to the lay mind. The ease with which the cars answered the slightest touch of the wheel much impressed those who had hitherto been accustomed to look askance at modern motor-cars.

The list of cars which took part in the procession is as follows:—Messrs. J. G. Rose, 4½-h.p. De Dion, A. T. Henessy,

Mr. Rhodes willed her to his mechanic, Mr. Young, and it was from him that Mr. Adams bought her.

SECOND HEAT.—Mr. E. Edwards' 7-h.p. Panhard, Mr. Menzies driving, 1; Mr. M. Irving's 12-h.p. Gladiator, 2. Time, 5m. 42.6s. For the first mile the Gladiator gained steadily, then she started missing fire. Mr. Menzies was quick to perceive this and quickly made up his ground, and caught and passed the opposing car at a mile and a half, and won easily.

FINAL HEAT.—Mr. E. Edwards' Panhard, Mr. Menzies up; 1; Mr. Langley's Georges Richard, Whitehead driving, 2. Time 5m. 38.8s. There was nothing in the race for the first two laps, neither car gaining at all, but subsequently Menzies gained quickly and caught and passed the opposing car in the last lap.

CLIMBING EXHIBITION.—A large staging was erected in front of the stand, giving four different grades, viz., 1 in 10, 1 in 8, 1 in 6, and 1 in 3, the latter being equivalent to the highest banking on the track. The cars only had a two yards take-off from the bottom of the incline. The De Dions proved themselves to be wonderful hill-climbers, stopping and starting with the greatest ease on any part of the incline. Mr. Jenkins' Toledo steam car was the only car which went up forwards to the top from a standing start. His car, and those of Messrs.

Mezies, Fuller and Rose gave excellent displays of the hill-climbing possibilities of the cars.

FIVE MILES MOTOR-CYCLE HANDICAP.—Mr. H. L. Jenkins, 3½-h.p. Holley, scratch, 1; Mr. W. C. Fenton, 1½-h.p. Werner, 2 laps, 2; Mr. W. M. Jenkins, 2½-h.p. Holley, 200 yards, 3; time, 9.34 min. 4.5 secs. Fenton's time was as nearly as possible ten minutes for the five miles. The last-named gentleman is Mr. Graaf's (the millionaire butcher), mechanic in, and will soon be the proud driver of the largest and most powerful car in the country. It is a 22-h.p. Daimler, and will arrive, all ready for running, by next mail steamer.

In the steering competition, dummies dressed as ladies, which, by the way, caused much caustic comment from callow youths on the stand, were placed at different spots in a rectangular space, and the cars had to steer through these both backwards and forwards. The first attempt resulted in a tie between Mr. A. C. Fuller and Mr. J. G. Rose, and on being run off was won by Mr. Fuller, Mr. Rose overturning a tub.

The band of the Northumberland Fusiliers discoursed sweet music during the afternoon. The thanks of the Press representatives are due to Mr. H. E. Hennessy, who discharged the onerous duties of Press steward in first rate style.

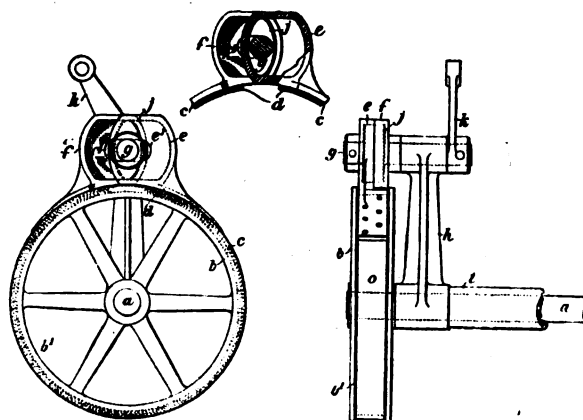
ANNUAL DINNER.

In the evening the first annual dinner of the Automobile Club of South Africa was held, and after the usual loyal toasts, Sir L. L. Michel proposed the toast of the evening. He said his first motor trip had been with the late Mr. Rhodes. Not long ago he went out from Kimberley to meet Lord Milner, who was coming over from Bloemfontein. He started out on one of these machines of which they had heard so much, but they did not get very far. The man who was driving got down periodically and opened the side of the machine and looked in, and then he shook his head. There was nothing in it. At the last election in Cape Town he was assisted by their Chairman (Mr. Hennessy) who drove him about in a motor-car which did not stop at inconvenient times.

The toast of the A.C.G.B.I. was proposed by the Chairman. Mr. A. T. Hennessy and Mr. Rudyard Kipling responded, recalling the days when motoring was looked upon as a cross between pitch-and-toss and manslaughter. His experiences began early in a hired Daimler. At the beginning they were the sport of justices of the peace, they were the sport of the police, and they were the bane of every carrier's cart. That had been changed, and he thought, to a great extent, through the work of the Automobile Club. He thought the Automobile Club had done its little to try and show that motorists could live at peace with other persons who used the King's highway. Even in this country, where the roads were broad and the people were kind, he did not think it would be a bad thing for them to cling together and help one another. One of the things that South Africa needed would be a special make of car—a car that is absolutely dust proof, and one that a Kaffir can drive with a screw driver. They wanted wheels about five feet high, and the carriage about eight feet in the air to allow for crossing drifts. Frankly, though, from his small experience of the Mulzenberg road, he did not think the last word had been said about the great South African car of the future. He did not think the car would be quick—he did not think it needed to be quick, but it was needed to be sound, dust proof, and capable of wandering through a drift on occasion, even though that drift contained about three feet of water. This problem he submitted to their intelligence. They had the country to experiment upon, they had many and various makes of cars, and he should say that unless they equipped their motor-cars well with springs a good many of their cars would be in the repair shops. That was about all the advice he had to offer them on this momentous question except one thing—and he spoke from his heart—never pay more than £1 for a dog. Anything beyond that was blackmail and ruin, and spelt bankruptcy. In conclusion, Mr. Rudyard Kipling tendered hearty and fraternal greetings from the Automobile Club at home.

THE PICK CAM BRAKE.

THE Pick Motor Company, Limited, have lately introduced a new band brake for motor-cars which merits some attention. Referring to the illustrations, *a* is the moving axle or shaft which is to be braked; *b* is the drum keyed thereto; *c* is the leather-lined brake band; *e* and *f* are the two boxes to which the two ends of the band *c* are secured; these boxes are formed with elongated holes, *e'* *f'* respectively, through which passes the shaft *g* rotatably mounted in the standard or support *h* which is shown carried by a sleeve *i* on the shaft *a*. A cam *j* made in one piece with its shaft *g* is fitted inside the two boxes *e* and *f*. This cam is of an elliptical shape, the ends of the boxes against which the cam bears being of a corresponding form. An enlarged sectional drawing of the cam is given in the central illustration. When the cam is in the normal position, that is to say, in the position shown in the drawing, with its major axis upright, the band is slack upon the drum.



If, however, the shaft *g* be turned in either direction through the medium of the lever *k* keyed upon it, the two boxes are moved by the cam in opposite directions or towards one another, thereby tightening the band upon the drum. Upon releasing the lever the spring or elasticity of the band is sufficient to take it out of frictional contact with the drum. The brake is of the double-acting type and is so arranged that it cannot pull itself on.

As already announced, the opening run of the Motor-Cycling Club for 1903 will take place to-day, the destination being Brighton. The starting point will be Purley Corner at 3.30 p.m.

THE Singer Motor Company, Limited, has been registered with a capital of £1,000 in £1 shares, to carry on the business of motor-car manufacturers. Registered office, Canterbury Street, Coventry.

THE tenders of the Lancashire Steam Motor Company, Limited, for a steam motor-wagon to carry four tons, and of Messrs. T. Coulthard and Company, for two wagons to carry five tons each, have been accepted by the Liverpool Dock Board.

BRANCHES of the Motor-Cycle Union of Ireland have been formed at Cork and Waterford. At the inaugural meeting of the former, Messrs. J. T. O'Callaghan and J. T. Mulligan were elected hon. secretaries. The officers of the Waterford section have been appointed as follows:—President, Alderman W. G. D. Goff, J.P.; vice-president, Captain Langrishe; hon. secretary, Mr. W. F. Peare; hon. treasurer, Mr. W. J. Corder.

THE Yorkshire Automobile Club will hold a short run to-day (Saturday) to Wetherby via Harewood and Collingham. The general meet will be at Harewood at 3.15 p.m. Leeds members will meet at the Chained Bull, Moortown, at 2.45 p.m. the Bradford contingent gathering at Manningham Park at 2.30 p.m. Tea will be arranged for at the Angel Hotel, Wetherby, at 4.30 p.m. A week-end tour will be held at Easter.

CONTINENTAL NOTES.

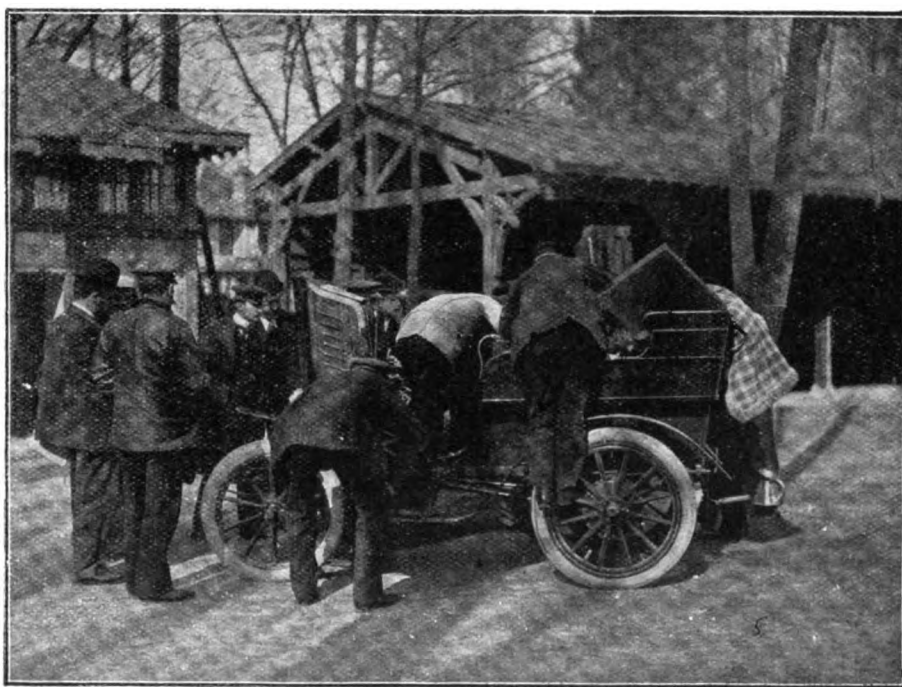
BY "AUTOMAN."

ON several occasions in 1901, I mentioned the attempt (unsuccessful at the time) of the French Government to obtain a monopoly of the refinement of petroleum. The question has now come up again, and by a majority of 129 votes the Chamber of Deputies has invited the Government to establish as soon as possible a state monopoly over the refinery of petroleum. In addition to this a tax of one franc 25 centimes per 100 kilos (representing about one shilling per cwt.) was adopted on crude petroleum.

THERE is no doubt that the ultimate object of these proceedings is to force automobilists to use alcohol instead of petrol. The petrol used to propel motor-vehicles in France is entirely an imported article, and the French peasant gets nothing out of it. And unless the Government can replace the demand for beet-root to the peasant, it dare not take off the bounty on sugar, for it would then throw thousands of peasants out of work. If,

For acetylene lamps it will be considered whether they can be easily lighted and extinguished, and then relighted after a lapse of time, and whether all kinds of carbide can be employed in them. The lamps will also be tried on the road at night, and judged according to the amount of light, and how it is reflected and distributed along the surface of the roadway. The steadiness of the light and the brilliancy of the reflector when the lamp has been lighted for some time will be noticed.

THE form of car bodies is gradually changing. Covered cars are coming more and more into vogue, and in all the streets of Paris, both in the business quarter and on the Boulevards, and along the avenues where pleasure-seekers are mostly to be seen, there is a constant procession of covered cars. Most of these are driven by servants, or rather *mecaniciens* in livery, and the owners are in the back part, being driven to their business or pleasure, as the case may be. The body known in French as the "cab" seems to be the most fashionable, as I believe it is the most comfortable. It resembles the upper part of a hansom cab minus the driver's seat, and is fitted over the back seat of the motor-car. In this covered body the owner is quite free from



The Consumption Criterium—Examining the Tanks of the Chenard-Walcker Car, the Winner of the 650-1,000 Kiloz. Class.

however, it gets the refinery of petrol into its own hands, it can put up the price of that quality which is used in motor-cars and thus create a demand for alcohol. Then the agriculturist can turn his attention to producing grain or other cereals for the alcohol distilleries, enabling the sugar bounties to be afterwards taken off.

THERE are nowadays so many competitions for automobiles and all that is pertaining to them, that it almost becomes impossible to follow them all. One, however, which is being organised by the A. C. du Rhone, is particularly useful and instructive, viz., the *concours des lanternes*, or the "lamp trial." It is to take place on March 10 and 11 at Lyons, on the premises of the Automobile Club. Lamps of all kinds are to be admitted, paraffin, acetylene, or electric, and there is to be a special prize for gas generators and holders, and for lamp brackets. The photometric strength of the light given is to be taken into consideration; the size and the weight will count, the facility of charging, lighting, and cleaning will be points in their classification; and the price will not be forgotten. No lamp will be eligible for a prize which is not absolutely proof against explosion.

the dust and yet can have the full benefit of the fresh air. He also faces the wind, and has a good view of the scene in front of him. He can easily direct his driver, and should the rain come down he can close himself in.

THE A.G.A. has decided to organise an Easter run which would be particularly interesting to any English tourist who has the time to visit one of the most picturesque parts of France, namely, la Touraine. The country is beautiful, the roads are excellent, and almost every town and hamlet are closely interwoven with French history. The tour will start from Paris on Monday, April 13th, and will end at Paris on April 22nd. The entrance fee is 50 francs (£2), and will be received at the secretary's office of the Association Generale Automobile, 6, Place de la Concorde, Paris, until March 31st. Only members of the A.G.A. or A.C.F. or an affiliated club will be allowed to enter, and the vehicle must be a *bona-fide* touring car.

THE Count of Recope has proposed to the Committee of the A.C.F. a new apparatus for measuring the power developed at the road wheels by a motor-car. The apparatus consists of two

dynamos, to the armatures of which have been attached flexible shafts; the further ends of these flexible shafts would then be fixed to the axle boxes of the back wheels of the car to be tested. The car would be jacked up slightly and started up, the front wheels resting on terra firma and the back wheels, of course, just clear. The current produced by the two dynamos would, added together, give, by means of a simple calculation, the h.p. transmitted to the road wheels. In addition to this, the difference, if any, between the currents produced by the two dynamos would indicate whether or not the differential gear was doing its work properly. This machine would be most useful to the trade, and would settle once and for all the vexed question of the loss in transmission. It would establish a Lloyds for motor-cars which could issue certificates to all applicants, making a small charge to cover the expense.

It has been decided that the start of the Paris-Madrid race will take place at Versailles. The member who represents Versailles in the Chamber of Deputies is none other than the famous Gautier de Clagny, who nearly two years ago interpolated the Chamber on the subject of suppressing automobile road racing, on the occasion of the Paris-Berlin motor-car race. His interpolation raised a storm of motorphobia and resulted in the Government promising to put its veto on all road racing in France. Gautier de Clagny, however, has been so completely converted that he joined the A.C.F. last December, and has now been directly instrumental in having the race pass through his own city of Versailles.

It has, I believe, been decided to reduce the interval to one minute in starting the vehicles in the Paris-Madrid race, and there are several projects for even finding a more speedy way of getting the whole field away in less time. One idea is to send a big car and a small car off together, so as to give the small cars a better chance. Half a minute between each car would probably be quite ample to avoid accidents and confusion.

It has been also decided that a day's halt shall be made in Bordeaux, where the cars will be marked with lead seals for the Spanish Customs formalities. There is no treaty between France and Spain with regard to motor-cars, and the affixing of the lead seals is all that will be required to be done.

THE Automobile Club of Touraine is organising a series of automobile competitions from the 16th to the 19th April next, and is formulating its rules on distinctly novel lines. The principal event will be a Tourist Competition for heavy and light cars, voitures, and motor-cycles, the various items taken into consideration being comfort, elegance of design, ease of working, regularity in running, cost price, the working cost per kilometre of distance covered, the weight as affecting undue wear of the pneumatic tyres, etc. The distance will be 300 kilometres, to be covered on April 17th and 18th, the 19th being devoted to an exhibition of the competing vehicles.

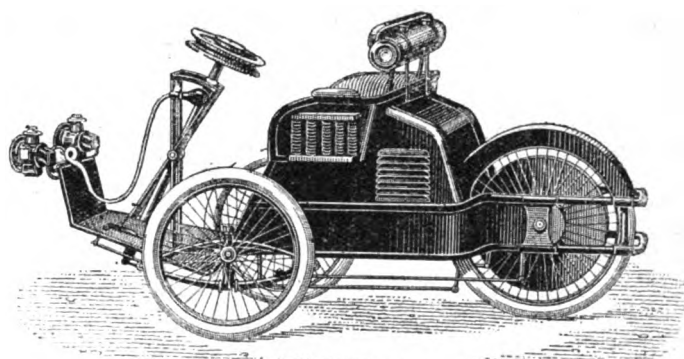
ANOTHER interesting competition in connection with the event is that of automobile lamps. Competitors will have to charge and light their apparatus in the presence of the judges, and the duration of each light without recharging will be timed, the facility of charging and lighting being also noted. Note will be taken of the ease of cleaning the lamp after it has burned itself out. The awards will be based upon the prime cost, the cost per hour of supplying the light, the time of burning without recharging, the intensity of the light, the ease of recharging, lighting, and cleaning, and the size and the weight of the lamp, which must light up the road for at least 60 yards. The tests will be made at night, and gold and silver medals will be given as prizes. The competition is international, and the results will be of very great interest.

CONSIDERABLE excitement prevails in motoring circles in Germany owing to the organisation of a torchlight parade of

automobiles of all kinds at the Kaiser's Palace in Berlin to-night (Saturday). Over 250 motorists from all parts of Germany have announced their intention of participating in the parade. The riders of motor-bicycles will head the procession, followed by motor-tricyclists, representative members of no less than 21 German automobile clubs, and "unattached" motorists. The Kaiser has promised to receive the homage of the motorists from the terrace of the Palace, and arrangements have been made to present to His Majesty an album containing the names of all participants in the "Huldigungsfahrt"—as it is termed.

THE brake trials, which are to be held on the 28th inst. in connection with the Nice week, will be of special interest, for they include a new classification in such tests, namely, of *freins de secours*, or emergency brakes. They will be required to act directly on the rear road wheels, without the intervention of the differential or other gear. A point to be considered in awarding the prizes, besides the power of the brake in forward or backward application, will be its adaptability to all kinds of vehicles. The other brakes will be tried both forwards and backwards, and also in a test of endurance over a descent of about five miles at a minimum speed of nine miles an hour.

THE accompanying illustration shows a novel little vehicle exhibited at the recent Salon by Messrs. Sautel and Sechaud, of Gentilly, near Paris. As will be seen, it is practically a tricycle the driver sitting upon an upholstered seat in front, with an inclined steering wheel in front of him. The vehicle is propelled by a 4-h.p. water-cooled motor, and the power is conveyed direct



to the rear wheel through a revolving shaft, with two small bevel wheels at the end engaging with larger bevel wheels fixed to the rear road wheel. Either one or the other of the small bevel wheels can be locked by a sliding feather to the revolving shaft, and thus either a low or a high gear can be obtained as desired. A feature of the little car is that all the various movements are controlled by the steering column, which, as will be seen, can be placed in different positions in a quadrant.

THE Arenberg Cup, offered to vehicles utilising alcohol as fuel, is to be run on the Paris-Bordeaux section of the Paris-Madrid race. The cup is held by M. Rene de Knyff, and so far only two entries have been received—Gobron-Brillie and Brouhot.

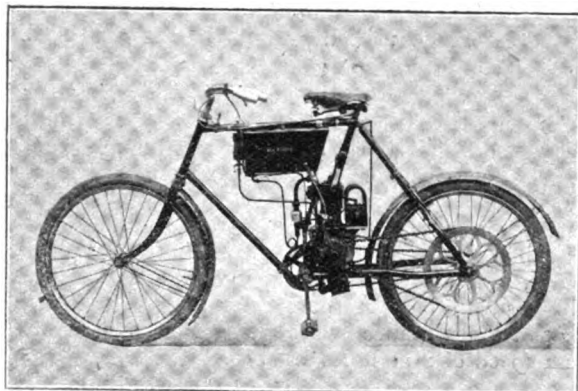
THE Century Engineering and Motor Company, Limited, have made a net profit of 7 per cent.

MR. J. E. HUTTON has sent us a copy of a pamphlet in which a very complete description is given, with drawings, of the Panhard automatic carburettor which attracted so much attention at the recent Paris Salon.

MESSRS. PETO AND RADFORD, LIMITED, have just issued a new price list of accumulators, contact breakers, sparking plugs, etc., for ignition purposes on petrol motor-cars. It includes particulars of an improved low-resistance primary battery for re-charging accumulators.

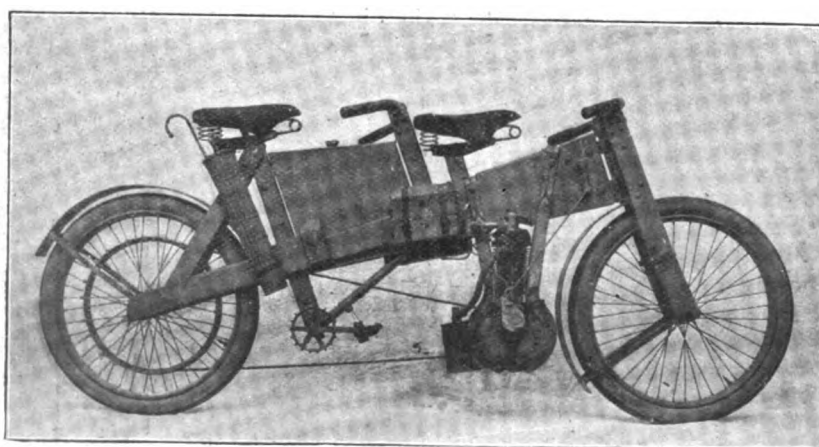
MOTOR-CYCLING NEWS.

AMONG the new motor-bicycles exhibited at the recent Manchester Show was the "New Bowdon," of which an illustration is given herewith. The machine, which is made by Messrs. Henry Cragg and Sons, of Altrincham, Cheshire, is fitted with a Simms 2-h.p. motor with magneto ignition. As will be seen, the



motor is built low in the frame and rests on two arms on the back fork bridge. The carburettor is of the spray type. The chief feature of the machine is found in the transmission. The motor chain wheel is provided with a clutch which enables the engine to be started before mounting and to be disconnected from the transmission at will when riding through traffic. The drive is on novel lines; on the motor-shaft is mounted a double-sprocket while to the rear wheel is attached an aluminium pulley into the grove of which is shrunk a raw hide belt. The connection between the sprocket and the pulley is by means of a specially designed Renold $\frac{1}{2}$ in. pitch double roller chain, the two rollers being separated by a link plate; this being, as are the outer plates, of the same pattern as used in the Renold silent chain. By this arrangement the teeth of the sprocket wheel mesh between the rollers of the chain, while the bottom of the side and middle plates grip the belt shrunk in the rear pulley. Messrs. Cragg inform us that they have thoroughly tested the drive and are satisfied that it has many advantages over the ordinary chain or belt drive; it is as silent as the belt driven machines, while should there be a back fire the clutch takes it up, reducing the strain on the chain to a minimum. The road wheels are 26 in. in diameter, shod with 2 in. pneumatics; two brakes are fitted to the machine.

HEREWITH we illustrate the somewhat novel motor-bicycle lately built by M. Andre Realier-Dumas, a well-known French



[La France Automobile.

sculptor and painter, for his own use. The frame and front forks of the machine are all of wood, the engine, a 2 $\frac{1}{2}$ -h.p. De Dion, being slung from the frame by stout iron straps.

THE following useful advice to motor-cyclists, is culled from the new catalogue of Osmond motor-bicycles, a copy of which has been sent us. When starting a long journey, do not forget what you may require on the road, namely:—Pump, tyre repair outfit, spanners, oil can, waterproof cape, map, chain bolt and nut, address book of suppliers of petrol, small piece of glass or emery paper, spare sparking plug, some spare belt hooks, small box of powdered resin, adjustable spanner, screw driver, pocket knife, pair of pliers, two tyre repair bands, and a small coil of copper wire; the latter is found to prove most useful in cases of emergency.

THE Liverpool Motor-Cycling Club, which has now forty-seven members, proposes to hold a motor-cycle race meeting at New Brighton during the coming season.

A NEW motor-bicycle stand known as the "Lever" is being put on the market by Mr. Montagu G. Townsend, of Totton, Hants. It is made of wood, the uprights being strengthened by round iron stays. It has a base of 24 inches, and is consequently perfectly rigid. Between the two uprights is a trough which can be raised by a foot-lever. The motor-bicycle is run along the trough until the axle touches the uprights; by pressure of the foot on the lever the trough containing the wheel is raised, and the axle, when the foot is removed from the lever, drops into slots in the uprights, thus obviating the necessity of any lifting.



Mr. Bert Yates on the Humber Chain-driven Motor Bicycle with Trailer.

THE Nottingham Motor-Cycle Club will hold its opening run on Saturday, the 14th inst., the destination being Newark. Members will meet at Trent Bridge at 2.30 p.m.

ON Thursday last week a lecture on "The Development of the Motor-bicycle" was given in Dundee by Mr. T. G. Parsons, of the Rossleigh Cycle and Motor Company, Ltd. From the crude mechanical novelty of 1898 and 1899 the motor-bicycle had, he said, developed into a machine which approached its pedal-driven brother in reliability. In the matter of efficiency advances had certainly been made, and he was of opinion that the time was ripe for the trade to make a closer investigation on a scientific basis with a view to further increasing the efficiency.

So many cyclists in Bath have taken to motor-cycling that a motor-cycle section has just been formed in connection with the Bath Cycling Club.

THE SOURCES OF NOISE IN MOTOR VEHICLES.

ALTHOUGH the complaints of the general public in regard to the noise made by motor-vehicles are rapidly lessening, as it is becoming more generally realised that the sounds made by these conveyances are unusual rather than actually of large volume, it is still of importance that the sound emitted by motor-cars when in operation should be minimised in the interests of a general reduction in the noises of traffic.

It will certainly be a strange case of "turning of the tables," but it is confidently believed that the motor-vehicle will very soon be preferred on account of its noiselessness. The noise of the beat of the iron shod hoofs of horses upon our thoroughfares cannot well be eliminated, and where the road surface is slippery this is a source of a far greater volume of distressing sound vibrations than would arise from the operation of even a greater number of motor-cars. It must be a matter of common experience that the "hoof noise" under these conditions is far greater than the noise arising from the motive power of petrol vehicles fitted with suitable silencers and travelling at an

evidences some looseness or irregularity of operation upon the part of the mechanism, and the latter some fault in lubrication, some misproportion of parts, or some failure to protect the mechanism from disturbing outside conditions.

It is unquestionably true that the high speed motors are the noisy ones, and this is likely to continue to be the fact as long as the reciprocating principle is adhered to. All parts, such as valves, which strike other parts must do so at higher velocities, and such noises as are present are more frequently repeated. What the internal combustion turbine might accomplish, even at high speeds, and what effect it might have upon the noise problem, are merely matters for conjecture.

It is well known that the exhaust sounds of petrol engines can be minimised just as fully as desired. It is merely a question of how large a silencer one cares to adopt, or how much one is willing to sacrifice in power lost through back pressure, or both, and eventually exhaust silencers may be expected to be generally and generously constructed, so as to strike a happy medium between the demands of sound reduction and the evils of exhaust throttling. In the ear of the enthusiastic motorist, exhaust noise, unless too sharp and penetrating, is not noise at all, but more related to a musical sound below the limits of audition.

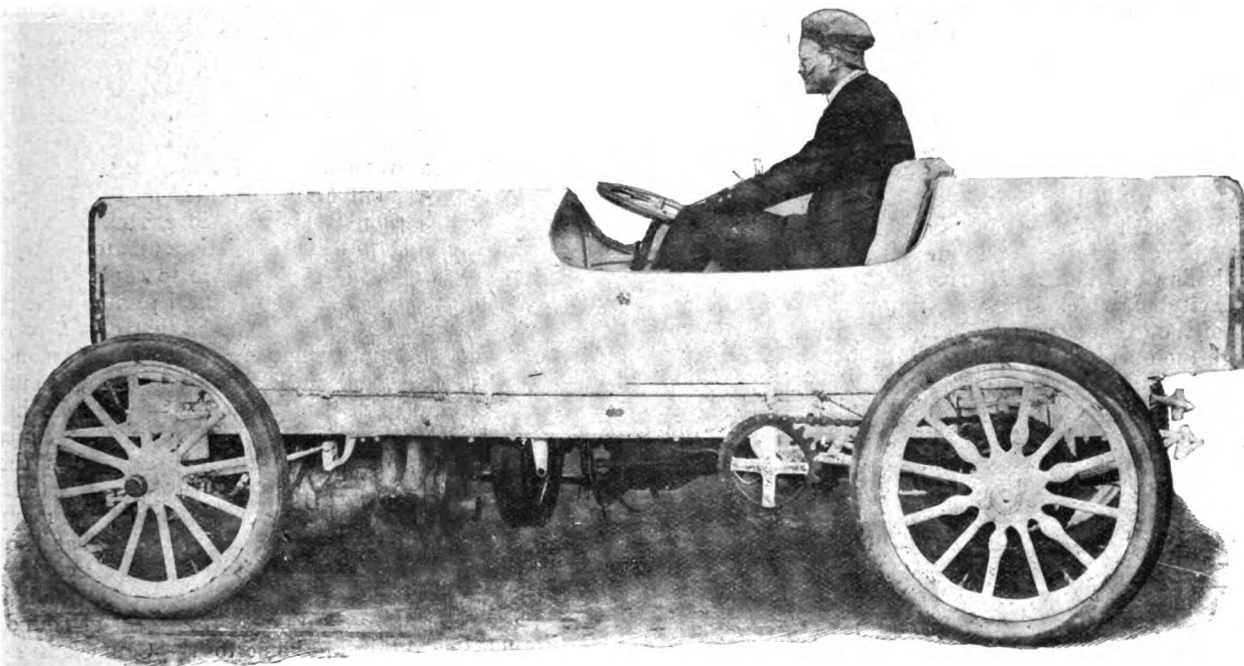


Photo by]

The Hon. C. S. Rolls on his Record-breaking Mors Car. (See page 3.)

[Argent Archer.

equal speed. The impossibility of removing the "hoof noise" is the hard fact which must in the end make the motor-vehicle preferred on the ground of noiselessness. Centuries of training have taught mankind to ignore the noise of hoofs which is so large a factor in the "roar" of great cities, but if one consciously wills his ears and brain to take account of it, he realises at once the large part it plays in the nervous strain which is constantly imposed upon dwellers in busy communities. The city of the future will not, remarks Mr. A. L. Clough in the course of an article in the "Horseless Age," possess a "roar," but rather a mild hiss or rustle, and this will be brought about by the construction of better roads, the suppression of hoof noises, and the universal use of the resilient tyre. The tendency (with all it implies) in the direction of a better nervous condition among the people, will have to be attributed to the general advent of the motor car.

The sources of noise in a petrol car may be placed under three heads: (1) Engine noises. (2) Transmission gear noises. (3) Frame noises. It may be said that the noises which are most distressing are of two kinds, viz., sounds which are irregular in their occurrence and sounds which evidence an excessive or unusual wear of a part. This fact must become increasingly true as mechanical intelligence advances, for the former source of disturbance

And in this view he is not without support from the text books, which define noise as sounds of irregular occurrence. A motor missing explosions produces, on the other hand, unqualified noise, abhorrent to our æsthetic as well as to our mechanical senses. When a motor is missing, the effect upon its driver is not far different from an attack of palpitation of the heart. Mankind has an innate love for the regular, and something inside us consciously or unconsciously beats time.

The noises of valves meeting their seats and that of the cams which operate them are of no small consequence. Exhaust valves have, as a rule, very powerful springs and they close in many cases with a noticeable clatter. Inlet valves, although operated with much less powerful springs, produce at high engine speeds a considerable amount of noise. If both these valves could be closed, as well as opened, by "uniform acceleration" cams, so that their velocity upon meeting their seats would be zero, much of this noise would be prevented. The noise of the air entering the carburettor and passing the ports produces in many engines an unpleasant hollow, wheezing noise; and some makers provide an air suction consisting of a multiplicity of small openings in some non-resonant material, such as rubber pipe, which constitutes an intake silencer.

(To be concluded.)

THE SANSON CARBURETTOR.

THE accompanying illustrations show a new spray-type carburettor for petroleum-spirit motors that has lately been put on the market by M. Louis Sanson, of Grande Rue, Dieppe, France. The apparatus is composed of two compartments, the vaporising and the constant level compartments. The vaporising portion consists of a chamber *a* in communication with the motor by the tubing *B* and with the chamber *C* by a series of apertures *d* in the direction of the axis of the chamber. The number of the perforations varies with the size of the apparatus. The petrol enters the chamber *C* through the nozzle *e* and the air through chamber *F* in

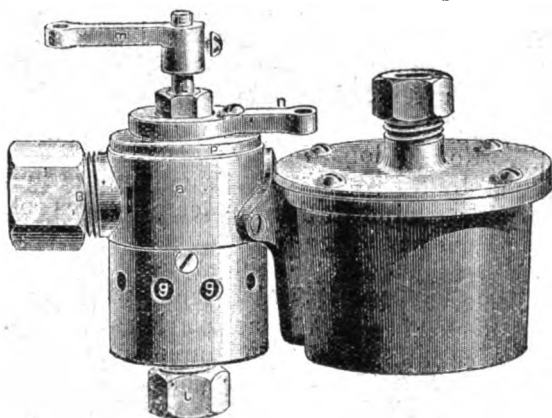


Fig. 1.

communication with the atmosphere by openings *g*. Just below the nozzle *e* and in the chamber *C* will be seen a hollow cylinder *h* surmounted by a conical roof, in the cavity of which is placed the "reheater" *J*, into which a part of the exhaust gases is led and from which the gases escape through the openings *K*. The flow of petrol is regulated by the needle valve *L*, operated by the lever arm *m*. The suction is regulated by the valve *P*, operated by the lever *n*.

The constant level compartment contains a float *Q*, through the centre of which passes a rod *S*, serving to guide the float in its up and down motion. The float carries a pointed valve *R*, by which it shuts off the petrol when the level reaches a

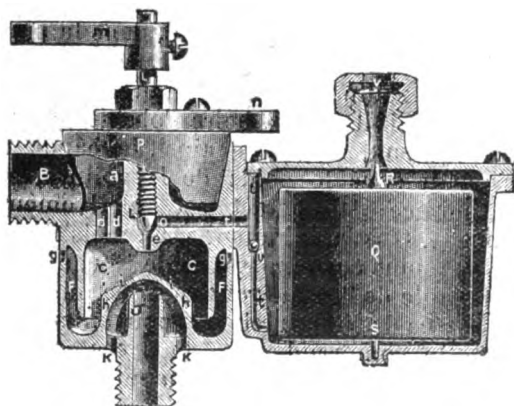


Fig. 2.

certain height. The float chamber communicates with the space *o*, surrounding the needle valve in the vaporising chamber by the channel *t*, in which is located the ball *u*.

A partial vacuum being created in the chamber *C* by the suction of the piston, the petrol issues from the nozzle *e*, and spreads over the conical roof *i*, of the heater, where it is immediately vaporised by the heat of this part. The air arriving through the openings *g* and chamber *F* becomes charged with the vapour of the petrol, the mixture becoming more uniform and gaseous as it passes through the vaporising "grate" *d* and through the chamber *a* and the tubing to the motor.

The claims made for this carburettor are that it operates well

and regularly without any valves and wire gauze, and that there is no need for an extra air admission to obtain the required density of the mixture. The suction of the air is distributed in a circle and the petrol arrives at the centre of this circle. The vaporization of the petrol is thus effected in the centre of the "field of carburation." Stress is laid on the automatic feed of the petrol by means of the float and the ball check valve. This ball establishes the equilibrium in the channel *t*, which affects the form of a syphon, and prevents the return of the petrol into the float chamber after each suction stroke. It is also claimed that the apparatus operates as well with alcohol as with petrol.

MOTORS AND THE ROADS.

"FOR half a century or more people have been very patient about the roads," remarks Mr. E. P. Wilberforce in a thoughtful article in the current *Badminton Magazine*, and, in consequence, motorists have become a long-suffering class. Fortunately, the Gordon Bennett race seems destined to cause people to realise the consequences of their neglect in the past, and the haste with which the local authorities in Ireland are condemning the road surveyors and others, who have not kept the highways in a perfect state, is evidence of a movement that will improve the roads of the country—to the material advantage of the nation. The other evening a meeting of the Irish Roads Improvement Association was held in Dublin, when it was stated by Mr. R. J. Meccredy, who presided, that a good surface increased the efficiency of the roads by close on 100 per cent. It cost less to maintain a road in good condition by means of the modern scientific methods than by the old system which was in existence in many parts of Ireland. The object of the association was to excite the interest of the public, and to influence them to contribute to the funds necessary to carry out the campaign. Splendid work had already been accomplished in the North, and a centre had been established in Cork. It was now sought to establish a branch in Dublin. The work of the intelligent Urban and District Councils and of the County Council of Dublin had resulted in an improvement of the Dublin highways. But if the County Dublin roads were open to improvement, how much greater was the necessity for an improvement of the roads in other districts? After the race for the Gordon Bennett Cup tours would be mapped out for the visitors, and it was natural to suppose that those districts in which the roads were fair would be selected. After the race the districts where the roads were best would be overrun with tourists and motor-cars, and thousands of pounds would be spent. This would bring home to the Councils in many places that the roads were not good, and that without good roads they could not expect tourists to spend money amongst them.

We are glad that public opinion is being aroused in Ireland, and while the Automobile Club is forming a fund to improve the route of the race, other organisations are urging the local authorities throughout the country to combine for a general advance. Motor-ing will be a factor in the future prosperity of Ireland; but its full value depends on the work of the Irish people in facilitating travel by the provision of good road surfaces.

Mr. Wilberforce suggests that road surveyors might try their hands at improving the road surface, the goal to be kept in view being "a waterproof road surface that shall wear well, produce neither dust nor mud, be harmless to horses and tyres, and cost not more, and, if possible, less, than the present system." We are told in the "Badminton" article that already some "rich motor-car owners pay a considerable amount to the authorities for extra steam rolling to be done in their neighbourhood, and find the expense warranted by the saving in tyres." But this is a work for which public funds ought to be provided, and provincial automobile clubs might usefully draw attention to the subject in the public discussions they hold from time to time. It is satisfactory to find that sportsmen as well as strict utilitarians are in agreement as to the wisdom of spending money in maintaining the highways of the land.

SOME USEFUL NOTES.

SOME useful hints with regard to the charging of accumulators from primary batteries are given in the new catalogue of Messrs. Peto and Radford, Limited. When accumulators are charged from a primary battery it is important to remember that the pressure in volts from the primary battery must be increased after the voltage of the accumulator has commenced to rise. When charging a discharged 4-volt accumulator, which would have a pressure of about 3.6 volts, a less number of the primary battery cells are sufficient at commencement to provide enough power for the necessary charging current, as the primary will have about 4.8 volts or more. A difference of over 1 volt between the primary and the accumulator is sufficient to charge the accumulator at 2 amperes, but as the charging proceeds the voltage of the accumulator soon rises, and it is necessary to put on more power from the primary cells to keep up the difference of 1 volt between them, or to increase the current to 3 to 4 amperes.

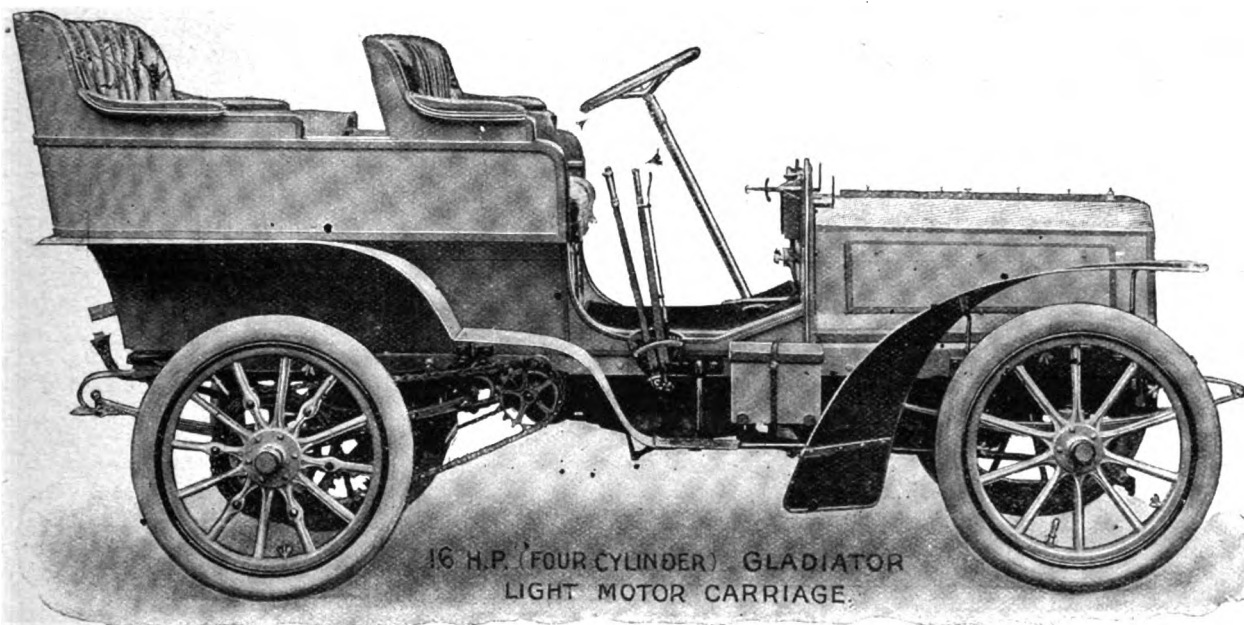
It is impossible to give exact instructions for regulating the current, as it depends entirely on the condition of the accumu-

and the tappet), and if found too long should be filed off. This is a process which is better done at home than at the roadside.

ACCUMULATOR terminals should always be kept scrupulously free from corrosion, otherwise they will gradually become "eaten away" to such an extent that a slight extra jolt on the road will suffice to break them off, and it may then be a matter of great difficulty to effect even a temporary connection. After being thoroughly cleaned and polished, the terminals may be fairly well protected from the action of the acid by a coating of vaseline.

ALWAYS see that your spare parts—especially the valves—are of the proper size for your engine, so that there may be no annoying delay if they are suddenly called into requisition.

WHEN a new car is received from the makers, be sure to ascertain that the petrol, oil, and water tanks are perfectly clean before filling them up. Many makers are careless about the condition in which cars are sent out, and the tanks often contain debris in the shape of dirt, and bits of straw and string, which, when swept into the carburettor or crank-chamber, or accumulated



The Gladiator 16-h.p. Four-cylinder Car. (See issue February 14th, page 935.)

lator on charge, whether it is very low in voltage at the start, the time it takes to recover its voltage, etc. It should be noted that as the charging current is the result of the difference in voltage between the primary battery and the accumulator, and assuming that this difference is 1 volt, a rise of a $\frac{1}{2}$ volt in the accumulator as it gets charged will reduce the charging current by one half, or 50 per cent., or a fall of a $\frac{1}{2}$ volt in the primary battery will have the same result, hence the necessity of a resistance and due care in regulation. Practically, if the primary battery is giving 5 volts, and the accumulator 4 volts, four-fifths of the primary battery voltage is used in overcoming the opposing voltage of the accumulator, leaving 1 volt as the pressure available for the actual current flowing, and therefore making the rise or fall of current proportionate to the increase or decrease of this 1 volt, and not proportionate to the total voltage of the battery.

It occasionally happens that the stem of an exhaust-valve is slightly longer than it should be, so that the valve is prevented from closing properly. The spare exhaust-valve, which ought always to be carried, should be examined for this defect (best done by placing the valve in position and seeing whether, when it is closed, there is the usual clearance between the end of the stem

in the pipes of the radiator or in the pump, do not, needless to say, conduce to the satisfactory running of the engine.

MR. H. C. BABBITT, the chemist of the East Pittsburg Gas Works, Pa., U.S.A., writes:—"A number of automobilists have complained that the use of calcium chloride as an anti-freezing medium in winter time corrodes the tanks, pipes, etc. This differs from the results of my experiments on the action of this salt on the metals commonly used and from the practical results obtained by others, and must be due to the presence of free acid in some of the commercial calcium chloride. To neutralise the free acid, it has been suggested that caustic soda, or other alkali, be added. This is open to two serious objections. If the acid were exactly neutralised, sodium chloride (common salt) would be formed and introduced into the solution in proportion to the amount of free acid present, which would be undesirable. If soda in excess were added, lime would be precipitated and sodium chloride introduced into the solution in proportion to the soda added. The rational neutraliser, to my mind, would be a handful or two of lime, slaked or unslaked. Lime is comparatively insoluble in water, and would combine directly with any free acid present forming calcium chloride, slightly increasing the strength of the solution."

HERE AND THERE.

THE sparking plug "discovery" is still an absorbing topic in motoring circles. M. J. F. Henrique, of 41, Avenue de la Grande Armee, Paris, sends us a sample of the "Disrupteur" he has lately introduced. As will be seen by the illustration, Fig. 1, it closely resembles that which Messrs. C. S. Rolls and Co. have put on the market. The "Disrupteur" was devised by M. R. Le Grand, who has taken out a patent for it, the

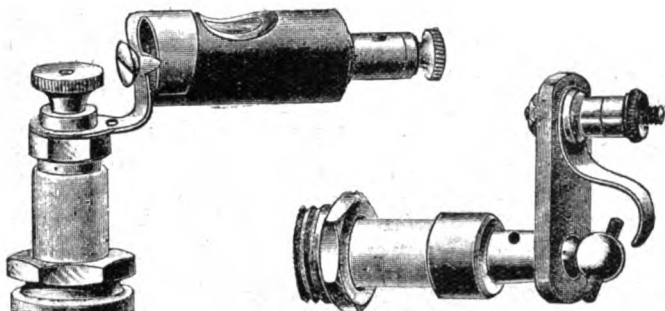


Fig. 1.

Fig. 2.

main claim being that the "jump" takes place in the centre of an insulated mass, so that there is no danger of the external spark igniting any petrol vapour that may collect about the motor. The insulating fibre is cut away at the top and a piece of glass inserted, thus enabling the spark to be seen, and consequently obviating the necessity of continually removing the plug from the motor. The wire from the coil is connected to the terminal at the right of the illustration; the gap can be regulated by means of the screw at the left. Fig. 2 illustrates the device, having a similar object, which Messrs. Bransom, Kent and Co., Ltd., have put on the market, and which is self-explanatory.

Punch has been using the Lanchester car to illustrate a joke.

THE King's 20-h.p. Daimler car is to be fitted with Messrs. A. W. Gamage's spark intensifier.

SIR T. G. BIDDULPH, BART., is among the latest accessions to the ranks of the Automobile Club.

THE Wolverhampton Motor-Cycle Club has arranged an excellent programme of runs for the spring.

IT is announced that the great Krupp iron and steel concern, of Essen, Germany, is taking up the construction of steam-cars of the Serpollet type.

THE Lord-Lieutenant of Ireland and the Countess of Dudley are enjoying a brief visit to the North of Ireland, making Portrush their headquarters. His Excellency's motor-cars preceded his arrival at the little town.

THERE is a project among the members of the Automobile Club of America for the establishment of a large and well-appointed country club-house somewhere on the shores of Long Island Sound or the Hudson, within easy touring distance of New York.

THE first motor-car wedding in the Taunton district took place last week at Ruishton, near the town. The wedding party were conducted to the church in motor-cars, supplied by Messrs. J. Beach and Sons, of Taunton, Mr. J. Beach driving one and Mr. Percy Beach the other. Subsequently the guests were delighted with trips on the cars after the breakfast.

ON Saturday, Lord Rosebery visited the works of the Mo-Car Company at Paisley. Mr. Johnston, managing director, and Mr. Napier, manager, showed his lordship through the works. Altogether, about an hour and a half was spent at the place, the party afterwards returning in motor-cars to Ferguslie. Shortly after noon Lord Rosebery left Ferguslie Park in one of the cars, motoring all the way to Glasgow, to catch the one o'clock connection for Edinburgh.

AN Automobile Club has just been formed in Rome.

MR. L. J. O'HIGGINS is establishing a garage in Harry Street, Dublin.

AN American firm of motor-car builders has given the name "Santos Dumont" to its vehicle.

THE County Down surveyor uses a motor-car when inspecting the roads of his county.

THE Stourbridge Urban District Council is petitioning the County Council to deal with the speed of motor-vehicles.

IT is stated that since the Longuemare carburettor for petrol motors was introduced no less than 21,000 have been sold.

THE Municipality of Antwerp is organising a system for doing the whole of the street scavenging, refuse removal, and the general sanitary service, by means of automobiles exclusively.

AN outbreak of fire has occurred on the premises of the Northern Carriage and Motor Car Company, at Aberdeen. Fortunately the vigilance of Mr. Mitchell, joint manager, led to its arrest before serious damage was done.

THE Whitney Manufacturing Company, of Hartford, Conn., U.S.A., have sent us a list of their roller chains for motor-cars; they are made in four pitches— $\frac{3}{4}$ inch, 1 inch, $1\frac{1}{4}$ inch, and $1\frac{1}{2}$ inch—each pitch being made in two widths.

AT a Council meeting of the Associated Chambers of Agriculture in London, Mr. Rider Haggard suggested the collection and delivery of goods and parcels up to 100 lb. weight by means of motor-cars in conjunction with railways.

ACCORDING to M. Henri Fournier it will cost each firm competing in the Gordon Bennett race £12,000 for building cars and maintaining staffs of workmen distributed at different points along the road with all the material for effecting repairs.

A USEFUL little table, showing the approximate horse-power required to move a vehicle of a total weight of 1,000 lbs. up different grades and at various speeds, ranging from six to forty miles per hour, has been issued by Mr. Chas. D. Shain, of 11, Broadway, New York.

THE motor-cycle section of the Austrian Touring Club is organising a consumption trial for the 22nd inst. It will be held on a 100-mile course on the Trieste road, near Vienna, and will be confined to motor-bicycles weighing less than 110 lbs. Speed is not a factor in the result of the trial, but a minimum average of $15\frac{1}{2}$ miles per hour will be required.

MESSRS. RATCLIFFE BROS., of Frinton-on-Sea, have lately introduced a mechanically-operated inlet valve arrangement specially designed for fitting to the engines of existing $3\frac{1}{2}$ -h.p. Benz cars. As a good many of these little vehicles are in use up and down the country, and as the makers claim that the fitting of their



device increases the power of the motor by about 25 per cent., the accompanying illustration will no doubt prove interesting. The set of fittings comprise:—A lever, machined and fitted with studs, pins and axle for wheel, strong spring for inlet valve, cam wheel turned and bored, bracket to be fixed under present nut or girder, with slot hole for adjustment, and a plate, with cam for lift. With the mechanically-operated inlet valve, which allows the piston to suck in a full charge of gas at each stroke, Messrs. Ratcliffe claim that the $3\frac{1}{2}$ -h.p. Benz engine will run at a much slower and more regular speed whilst standing, and that the car will take top speed on heavy roads and on hills, where without it second speed would have to be used. The set of fittings is not very costly, and can be put in position on the motor by any motorist in less than an hour.

THE Italian War Office is considering a scheme of establishing a regular motor corps in connection with the army.

THE sole contractors for floral decorations at the Automobile Exhibition, Agricultural Hall, are Messrs. Stroud Brothers, Green Lanes, Finsbury, N.

THE Mors Company are building a 100-h.p. four-cylinder petrol motor for the Brothers Lebaudy, the designers of the Lebaudy air-ship.

THE A.C.F. silencer competition, which should have been commenced on the 2nd inst., has been postponed until Monday next, the 9th inst. There are twelve entries.

AT the small but interesting Boating Exhibition now in progress at Earls Court, S.W., Stirling's Motor Carriages (Limited) have a very fine show of boats fitted with the Racine motor.

TWENTY entries have so far been received for the "Criterium des Transports Automobiles" which is being organised by *La France Automobile*. The list closes on the 12th inst.

MR. J. BUSH, of Windsor House, Marine Parade, Barmouth, who already has a motor repairing plant, has added a dynamo for recharging batteries, and is also keeping a stock of petrol.

THE 12-h.p. Peugeot lorry which won a gold medal in the recent Consumption Criterium in France, when it carried a load of 2 ton 17 cwt., is now on view at the depot of Messrs. Friswell, Albany Street, N.W.

THE Manchester Automobile Club has now a membership of 140, the increase last year having been forty-eight. During the season nine successful runs were held, the average number of cars attending being fifteen.

MESSRS. RENNIE AND PROSSER, LIMITED, of Glasgow, are establishing a large new motor garage and repair works at 69, M'Alpine Street. A petrol licence has also been obtained, and the firm are now in a position to undertake any class of repair work.

THE Committee of the Yorkshire Automobile Club have had before them a suggestion to establish a club-house and garage at some future date, and, in view of making the suggestion practicable, they are appealing to the members to help them to increase the membership of the Club. At present this stands at 150 members.

THE British Germain Motor-Car Company, Limited, have just supplied a Germain 15-h.p. motor-omnibus, seating twenty-two passengers, to the order of Mr. C. A. Mahore, of Durban, South Africa, for service in that town. At its trial the vehicle with its full load covered a distance of sixteen miles in one hour, and proved itself a good hill-climber.

THE annual meeting of the Cyclists' Touring Club is to be held on Friday, the 13th inst., when the following resolution will be moved on behalf of the Council:—"That, in the opinion of this meeting, it is desirable that the constitution of the Cyclists' Touring Club should be so enlarged as to permit of the admission of automobilists and all other classes of tourists to membership."

THE first meeting of the members of the Royal Commission appointed to inquire into the means of locomotion and transport in London was held on Tuesday at the Middlesex Guildhall, Westminster. The Commission has decided to examine as preliminary witnesses Colonel Sir Herbert Jekyll and Lieut.-Colonel Yorke, of the Board of Trade. It has also been determined that the next meeting for the purpose of taking evidence shall be held on Friday next at eleven a.m.

A BEAUTIFUL showcard for 1903 has been issued by the B. F. Goodrich Company and Single Tube Tyres, Limited, whose catalogue is of interest to motorists. The tyre is constructed to withstand the flints of British roads and can be fitted to any section or make of rim. The Goodrich non-slipping rubbers for detachable tyres are accurately machine-cut at the edges, thus never varying in width, and requiring no trimming off—a point of economy in making up or re-covering tyres.

AN automobile club for the Newcastle district is in course of formation.

A MOTOR-BUS intended for trial by the Exeter Corporation caught fire between that city and Chard last week and was completely destroyed.

THE Motor Mart, Limited, have had a large signboard, 32 feet by 6 feet, erected facing the Euston Road, so that no excuse exists for people passing that way missing the place, where sixty motor-vehicles are on view.

IN connection with the forthcoming Exhibition at the Agricultural Hall there are still a few spaces to let in the Berners Hall, and for these early application should be made to Mr. Charles Cordingley, 39-40, Shoe Lane, E.C.

FOR the 1903 season the Electric Ignition Company of Birmingham have introduced an improved form of their well-known E.I.C. sparking plugs. In these, it will be remembered, the porcelain stem is replaced by a string of mica washers threaded over a central steel stem, and in this position compressed very

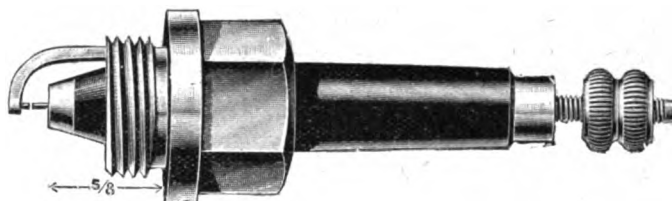


Fig. 1.

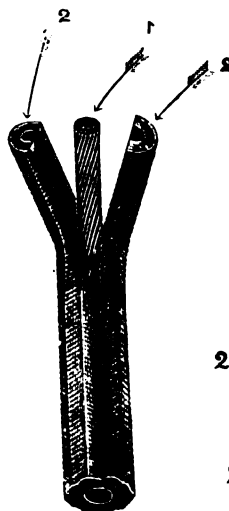


Fig. 2.

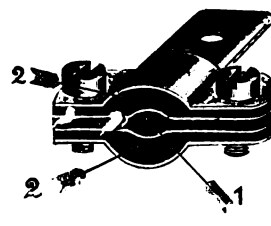


Fig. 3.



Fig. 4.

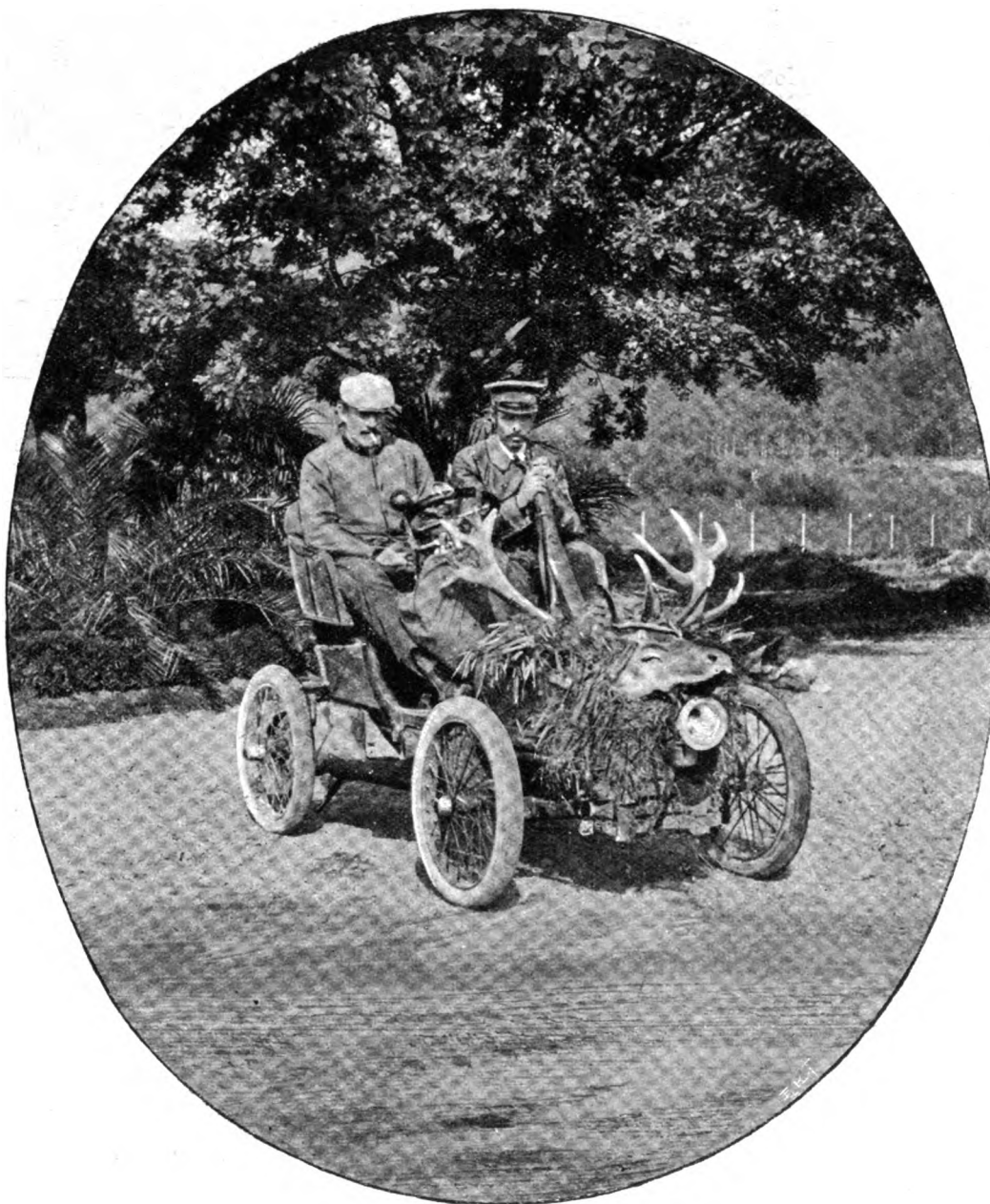
tightly together, the outside surface being afterward turned up to a slight taper. The stem is thus held in the conical seating without the aid of any packing whatever, so rendering it unbreakable. The alteration in the 1903 pattern is to be found in the sparking points, the earthed point now taking the form shown in Fig. 1. There is consequently more space between the two parts, and consequently less risk of short circuits owing to carbon deposits. Figs. 2, 3, and 4 illustrate the new high-tension wire terminal lately introduced by the same company, by means of which the stripping of the cable is obviated. To connect the terminal the rubber insulation on the cable is cut half an inch in depth, as shown in Fig. 2. The wire of the cable is then inserted into and between the copper clips in the space shown by arrow marked 1, Fig. 3, and the two halves of rubber insulation marked 2 into the spaces 2. Fig. 3 shows the joint completed, the makers claiming that nothing can either break or shake it loose. The arrangement also enables the plug to be taken out of the motor without having to disconnect the wire. The Electric Ignition Company are also introducing a new induction coil for petrol motors, to which we hope to refer in a subsequent issue.

DEVELOPMENTS IN THE AUTOMOBILE.*



THE course of development of the automobile has not proceeded so naturally as it usually does in matters mechanical—as, for example, in regard to the railway locomotive. The fact that one manufacturer has been successful with one type of vehicle has caused the untechnical to think that that *per se* must be the correct type; and the influence of fashion

pioneer carriages is comprised all the inanimate organs upon which the whole evolution has been wrought. Two of the gear-driven vehicles to which I have referred embodied the device—still almost universally prevalent—of a train of toothed wheels sliding into and out of gear laterally. This *train balladeur*, as the French call it, is supposed to have been invented by the late M. Levassor. Such, however, is not the case, for it was invented for use upon a steam carriage by James Watt. Watt's original sketch is still in existence, and is precisely the so-called Panhard gear. It even shows the method of lubrication by drilling a hole longitudinally through the



The Motor-Car in Stag-Hunting.

[Allgemeine Automobil Zeitung.

Count Carl Schonborn, the President of the Austrian Automobile Club, uses his De Dion Voiturette while deer-stalking on his estate at Beregvar. The above illustration shows the Count bearing home a magnificent sporting trophy, a head with sixteen points.

has made itself felt, to the prejudice of equally meritorious vehicles which, however, have not conformed to the fashion of the hour. In 1895 Panhard and Peugeot were typical of the two then prevalent types—the vertical and the horizontal cylinder *genus*. In the Paris-Rouen race also ran a jumpy contrivance propelled by a single cylinder Benz motor, its power transmission being by belting. In the internal economy of these three

shaft, and leading the oil out by lateral holes as required. Levassor tried other expedients, including friction, and no one was more dissatisfied than he with his change-speed gear. I believe his own exclamation was, "*C'est brusque et brutal*," but he added, and herein lies the crux of the whole matter, "*il marche*." This miserable compromise for a gearing of variable ratio works with more or less satisfaction, but always with a fair degree of reliability, and hence its continuance to the present day. Despite the labour which has been fruitlessly expended upon the search for something better, I trust designers will not grow faint-hearted, for had we but a better change.

* From a paper read before the Automobile Club on Friday, February 27th, 1903, by Mr. A. R. Sennett.

speed gear, and did designers but give greater attention to the silencing of their motors, the modern automobile would make far more rapid progress in the appreciation of the general public.

■ The Americans so far are well behind us in everything regarding common road automobilism, with the one exception, that they have in many instances suppressed the Panhard gear, but they have done this somewhat inadequately by failing concurrently to suitably increase the power of their motors. The change-speed mechanism brings us to the transmission beyond it, and here we see evidence of beneficial evolution. In the earlier carriages the power was eventually transmitted to the road wheels by side chains. The advent of the live axle would seem to ring their death knell.

I am quite aware that the production of a live axle which will not "give" and can be kept in correct alignment is not an exactly simple matter, but experience with live axles has already proceeded so far as to entitle us to prognosticate that side chains will soon be cast off permanently—as they are now apt to be temporarily. Chains bring us to wheels—in these we see no startling development. We note, however, the general transition from the suspension, or spider wheel, to the timber spoke, a transition in all probability likely to prove a lasting one.

In most of the more carefully constructed modern automobiles, internal brakes have been very properly made use of, and the crude practice of allowing the weight of the brake straps to lie upon the revolving drums is gradually dying out, being replaced by a more rational arrangement of extraneously supported brake blocks—the latter brakes contrasting very favourably with the French shoe brakes—put on the wrong way up and acting on the rubber tyre—as evidenced in the earlier of the French-built carriages. A notable feature of construction is the pertinacity with which the "Jack-in-the-box" still sticks to his post. This functionary, in the form substantially the same as when it was first invented independently by Pequeur in 1827 and Richard Roberts in 1829, still obtains.

With regard to the framing of self-propelling vehicles, the transition through which this has passed is interesting. For, beginning with timber construction, we find an almost universal reversion to this mode. The majority of the more modern carriages have composite frames consisting of metallic fitch-plates provided with an apology for a flange, produced by setting over the top edge of the medial portion. Not only is the width of flange thus obtained inadequate, but the length of plain fitch-plate left projecting at either end is too great. Having regard to the negligible increase of weight due to the extension of the flange, this should undoubtedly be done. A difficulty, however, presents itself, through the necessity of employing special plant, so that I look upon this merely as a temporary one. The noticeable feature in regard to framing is the gradual discarding of tubular construction. For weighty vehicles I think there can be no doubt that hydraulically pressed up frames produce the best "engineer's job." A plant is now at work in France, and one is being got ready on our side, so that shortly they will be procurable. Perhaps the most scientific form of frame yet introduced is the aluminium rectangular or "box girder," reinforced by a core of ash, made use of by Messrs. Charron, Girardot and Voigt, and the steel one of similar construction made use of by Messrs. Maudslay on our side.

In regard to the motor no startling or radical phase of evolution has presented itself, but there is evidence of healthy progress, the motor of to-day being a far more reliable servant than its progenitors. With regard to the cooling, the latest device consists in discarding the ventilating *louvers* which had come to be an integral part of the bonnet and enclosing the motor within it hermetically, and aspirating air into this closed chamber by means of a centrifugal fan. All this represents common-sense progress, but in connection with it we detect the imprint of the faddist. The cellular—or so-called "honeycomb"—cooler by means of which the circulating water is divided up into thin films constitutes a correctly scientific process of refrigeration analogous indeed to certain other cooling processes. But among things to be avoided on motor-cars are joints. Now the up-to-date cooler may be said to be built up of joints, a vast expanse of soldered joints fairly difficult to make in the shops almost impossible to remake on the road. The ideal water-cooler should only have two joints, those of the induction and eduction pipes. The difference in weight of a well-designed cooler practically free from joints and one dependent upon much soldered jointing is negligible in regard to ordinary vehicles. I should like to point out here that my remarks anent water-cooling and motors are intended to apply only to ordinary cars, and not to racers, in connection with which it is, of course, legitimate to employ any means of weight reduction and speed acceleration likely to bring one first to the winning-post.

(To be concluded.)

A CORRESPONDENT, writing to the "Electrical Review," gives a useful warning with regard to dry batteries. He has lately come across a large number of glass cells imported from the Continent and now being sold in various parts of the country as dry batteries. These apparently are larger, and presumably of much more power than an ordinary E.C.C. or Obach cell, but when tested are found not to give out one-third of the power of either. He has cut open three or four of these glass cells, got up so as to appear to be a *bona-fide* large battery, and found in each only a very small battery, the remainder of the cell being filled with sawdust and resin or pitch.

CORRESPONDENCE.

CHANGING SPEED GEAR WITHOUT NOISE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Do you think the present method of changing the Panhard gears of motors would be very much improved by the fixing of a clutch of the expanding type on the shaft between the speed and differential gears, of course making that shaft in two pieces, so that by throwing the clutch out at the same time as the main clutch in the flywheel, it would bring the whole of the change speed gear to rest and allow the road driving wheels to revolve and the car to run by the impetus it obtained before throwing out the clutch? Gears could be changed without any noise, jar, or trouble, and the clutches let gently in at the will of the driver. It appears to me that the advantages of such an arrangement are many. In the first place, the gear wheels would last as long as the car. Secondly, the greatest novice could change speed without the slightest danger of stripping the teeth. Moreover, the life of the speed shaft bearings would be very much prolonged owing to the absence in the gear box of pieces of steel that are knocked off the teeth to a more or less extent even by the most experienced of drivers. Then there is the danger when mounting a hill of missing the gear altogether; quite a number of serious accidents caused by cars running backwards have occurred through "missing gear." By the system I propose this would be an impossibility.

I should be glad if you would publish this letter in your valued *Journal*, so as to get the opinion of your readers on the subject.—Yours faithfully,

B. CARRINGTON SELLARS.

THE SPARKING PLUG "DISCOVERY."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In using the new spark intensifier, is it not very likely that should there be a leakage of petrol, and just the right amount of air about, a *naked* high-tension spark might not only light up the petrol but blow the car to pieces? The spark at contact breaker is, I suppose, harmless, as it is of low tension. It strikes me that one should ponder awhile before trying this, especially as car owners are fond of flooding their carburettors. Could not the interrupted high-tension wire be enclosed in a thick glass tube?—Yours faithfully,

ARTHUR FENNINGS, M.D.

CLUB AWARDS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Last July we entered certain vehicles in the Automobile Club's Reliability Trials. After the event was over we gained an award, which was to be a gold medal, and have since waited patiently for the Club to make these awards. We think this is rather unsatisfactory that, after all this length of time, no awards should have been given. On Saturday morning last we received a letter from the Club saying the medals were not yet to hand, and as soon as they were they would be forwarded.—Yours truly,

FRISWELL, LTD.

R. W. CHESTER writes re "catalytic ignition" as follows:—"I wish to know whether, after the current has been cut off, the wire maintains its incandescence, thus resembling the old tube ignition, or whether it becomes so at the moment of highest compression, and, if so, why?"

CONSIDERABLE progress is reported as having been made with the projected motor-car racing track at Clacton-on-Sea.

We hear that arrangements are in progress for the conversion of one of the very largest carriage depots in the West End into a garage.

THE Petrol Motor Power Company are opening a show-room for Peerless and Rambler cars at 7 and 9, Carteret Street, Broadway, Westminster. Garage accommodation for about twenty cars is also available.

AT an hotel yard at Windsor, on Sunday last, there were nearly thirty cars, and distributed about the town were many others, while a number of cars passed through, continuing on their way in the drenching rain.

THE Chairman, Mr. S. Andrews, of the Star Omnibus Company, has just told the shareholders that while the directors of the concern are fully aware of the necessity of being in possession of a successful motor-omnibus they are not willing to spend a great sum of money in experiments, a policy which the shareholders have endorsed.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Uttoxeter ...	O. Bamford	—	Dismissed.
Marylebone...	*P. W. Paddon, Portman Sq. W.	—	40s., etc.
Newport, I. of W.....	Captain P. Fell	18 m. p. h.	10s., etc.
Brighton	*L. Ameer, Brighton	—	40s., etc.
Weymouth ...	F. Martin, Weymouth	20 m. h. p.	2s. 6d., etc.
Dorchester ...	W. Garbutt, Cheltenham	Various.	40s., etc.
Gloucester ..	K. Cannon, Stocksbridge, Hants.	25 m. p. h.	£5, etc.
Bishop's Stortford ...			

Where no alleged speed is given it is understood to be above the legal limit.
*Motor-Cycle Cases.

NO LIGHTS.

A. W. REEVES was summoned at Colchester for driving a motor-car in Crouch Street on February 20th without having a red light attached, so as to show the direction in which the car was proceeding. The Chief Constable said the lamp was fixed in front, and as the car proceeded the light was obscured. The owner of the car had been cautioned in October in respect of the same lamp. Defendant was fined 10s. and 11s. costs.

DR. WALFORD BODIE has been summoned at Blackpool for having no light on his motor-car; but as the offence occurred on a windy night the case was dismissed.



The Up-to-Date Picnic Party.
[Das Schnauferl, Munch]

ALLEGED POLICE PERJURY.

AFTER a hearing lasting some hours, the York City Justices committed to trial, on a charge of perjury, an ex-member of the York City Police named Arthur Robinson, aged 26. The case arose out of a recent prosecution of a motor-car driver, when the accused said he timed the defendant with a stop-watch which he had (at the time of the hearing) left at home. It was stated that after the conviction of the motorist Supt. Woolnough, at the request of the Chief Constable, went with the prisoner to his house for the stop-watch, but was shown a watch from which the second hand was missing, and it was not a stop-watch. At an interview with the Chief Constable afterwards he said he had made a mistake, and produced another watch—a metal stop-watch which was broken. This proved to have been purchased two days after the conviction of the motorist, and the prisoner was suspended, being afterwards dismissed by the Watch Committee. The defence was that the evidence of the prisoner was not material, and therefore was not perjury, as the Lord Mayor, in deciding the case, said they had placed no reliance on snap observations taken by the constable.

CLAIM FOR DAMAGES.

AN interlocutor which decided a very interesting point in connection with the hire of vehicles has just been issued by Sheriff Henderson in Edinburgh Sheriff Court. The action was at the instance of John Burck, joiner, 109, Leith Street, Edinburgh, against the New Rossleigh Cycle and Motor Company, Limited, 6, North Charlotte Street, Edinburgh, for £25. Pursuer, along with six other gentlemen, hired a motor from the defenders for 10th August last to get to Peebles. The statement of the pursuer was that the defenders agreed to let them have the car and a driver for £2 2s. The driver which the defenders supplied was unskilled, and got no wages for the journey, getting tuition instead. An accident occurred, for which damages were claimed, but defender attributed the accident to the reckless conduct of the pursuers. The Sheriff finds that the action is incompetent, it being at the instance of only one of the persons who contracted with the defenders, all of whom had suffered damage. His lordship therefore dismissed the action, and finds the defenders entitled to expenses. In a note the Sheriff remarks that the eight persons would have been entitled to have joined in suing the defenders in one action. The question came to be, were they bound to sue together or were the defenders to be put to the risk of having seven similar actions brought against them? Where there was one contract he was inclined to think that the defenders were entitled to have the full amount of their liability determined in one action.

CLAIM BY A MOTOR-CAR FIRM.

In the King's Bench Division of the High Court of Justice, the Lord Chief Justice and a special jury have had before them a claim on behalf of the Wolseley Tool and Motor Company, who carry on business at Birmingham, against Messrs. Shoolbred and Co., of Tottenham Court Road, W.C., for damages caused to one of their motor-cars in the Euston Road by a collision with a two-horse van, which, it was alleged, resulted from the negligence of the defendants' servants. The defence was a denial of negligence, and it was said the motor-car was injured by turning into a shelter on the roadway. It appeared that on April 26th last the motor-car in question was being driven from the Agricultural Hall, where the plaintiff company were showing cars. The plaintiffs' case was that it was injured by being knocked against the shelter by the defendants' van, and damaged to the extent of £108 odd. The jury disagreed, and were discharged.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, MARCH 14, 1903.

[No. 210.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



LAST WEEK we announced that the King had become patron of the A.C.G.B.I. Now comes the intelligence that the Prince of Wales has become patron of the Norfolk Automobile and Launch Club. This new organisation held a meeting on Saturday, when it was decided to make the Royal Hotel, Norwich, the headquarters of the Club and hold the first Club meet at Yarmouth on the 11th prox. The following officers were elected:—Chairman, Mr. G. M. Chamberlain; Committee: Messrs. E. T. Boardman, Norwich; Ernest Estcourt, Wroxham; H. R. Fletcher, Marlingford; J. Griffin, Norwich; George Sillem, Long Stratton; W. W. R. Spelman, Norwich; also Yarmouth, Lowestoft, and Beccles district, Mr. Chamberlain, Great Yarmouth; King's Lynn district, Mr. Frank Morriss, Lynn; Dereham district, Mr. D. Belding, Dereham; Cromer district, Lieut.-Colonel Forbes-Eden, Sheringham; Thetford district, Rev. J. A. L. Fellowes, Bunwell Rectory. Hon. treasurer, Mr. F. W. Burton Fanning, M.B., St. Faith's Lane, Norwich. Hon. solicitor, Mr. Edmund Reeve, 59, London-street, Norwich. Hon. secretaries: Motor-car Section, Mr. G. N. C. Mann, Bankplain, Norwich; Motor-launch Section, Mr. H. L. Clark, Maid's Head Hotel, Norwich.

Motor-Cars in London.

ALTHOUGH the presence of one motor-car on a cab rank cannot necessarily be regarded as the sign of the future prosperity in that direction—any more than one swallow does not make a summer—it must be recognised that the presence of a few motor-cars on the London streets is a harbinger of an universal movement that will relegate horses to a proper position in the economy of traffic ere long. The "Westminster Gazette" has been making a census of automobiles seen in prominent places in the Metropolis which is of interest as indicating the advance made during the last few years. The plan was to stand for five minutes at certain spots in some of the principal traffic centres in London and count the number of vehicles that passed either way, differentiating between automobiles and those drawn by horses. The result was:—Opposite Charing Cross Post Office—Motor-cars 1, other vehicles 55. Embankment (opposite Hotel Cecil).—Motor-cars 7, others 39. Piccadilly (St. James's Hall).—Motor cars 7, others 61. Knightsbridge (Hyde Park Hotel).—Motors 8, others 59. Entrance to Hyde Park.—Motors 9, others 37. Over Albert Bridge.—Motors 4, others 19. This gives a total of 36 motor-cars and 270 other vehicles. A very fair proportion in view of the youth of the industry in this country.

Automobile Service for Portuguese West Africa.

THERE is now to be seen, on application at the Commercial Intelligence Branch of the Board of Trade, 50, Parliament Street, S.W., any day between the hours of 10 a.m. and 5 p.m. (Saturdays, 10 a.m. to 1 p.m.), a copy of the "Diario do Governo" containing a notice calling for tenders, which will be opened on 25th May next in the Directorate of the Caminhos

de Ferro Ultramarinos, for a concession to establish and work for 15 years lines and services of automobiles for the transport of passengers and merchandise in the districts of Loanda and Lunda (Portuguese West Africa). A provisional deposit of 2,500 milreis, or about £417, is required to qualify any tender.

The Exhibition.

ELSEWHERE we publish some information with regard to reaching the Agricultural Hall, from any of the London termini, which will be of interest to many of the provincial visitors coming to town for the great International Motor-Car Exhibition which will be opened on Saturday next, the 21st. Exhibitors seem determined to do all they can to have the stands ready in good time for the opening hour, and everything has been done to make the event a splendid success. In the last few issues reference has been made to some of the general features of the Exhibition, which is expected to prove the great Business Show of the year. The charge for admission will be one shilling every day except Wednesday, the 25th inst., which will be a special Club day, the admission being half-a-crown.

The Club Discussion.

EVIDENTLY the majority of the members of the Automobile Club recognised that the club-house was really inadequate for the purpose of a representative gathering, as proved by the scant attendance on the 6th inst. Elsewhere we summarize some of the features of the debate, and also give Earl Russell's views rather fully. It is clear that the numbering proposals are doomed, and the point motorists have now to consider is as to whether the alternative suggested on another page will meet the case. It certainly seems a reasonable and sensible way out of the difficulty, and should lead to a useful discussion on the subject in our columns.

Raising the Limit.

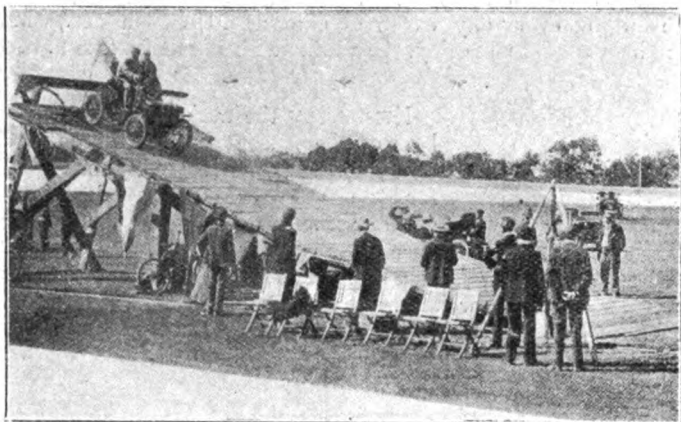
WITH regard to the agitation that has been made by the official section of automobilists in favour of numbering we would emphasise the point that time is on our side, and that with the growing popularity of the motor-car among J.P.'s, county councillors and legislators, the reversal of the present state of things is absolutely assured—in a short time. A year ago it seemed impossible that a motor-car road race should be held within the area of the British Empire; but next July will see all the automobile world in Ireland—spectators of a great International contest. Only a few months ago public opinion in New Jersey was against automobiles, but during the last few days the Assembly of the State of New Jersey has passed a Bill permitting motor-cars to travel at the rate of twenty miles an hour in the open country, nine miles in cities, and ten miles an hour in suburbs and near road crossings in the country. The State Senate is expected to concur and the Governor to sign the Bill. Such a step is likely to find imitation elsewhere in the States—and, in a very few years, in this country.

A Hill Climb Abandoned.

THE Nottingham Automobile Club, together with the Leicester and Derby Clubs, had arranged to have their opening run to Nanpantam on Saturday, and to try conclusions in hill-climbing. Despite the unpropitious weather several people journeyed thither from Loughborough, including the Mayoress (Mrs. R. S. Clifford), but the Nottingham Club wired to the effect that heavy rain at Nottingham had brought about the abandonment of the run. Mr. P. S. Clifford, jun., made all the necessary arrangements, and had measured out a mile of hill. Local motorists are hoping that the tests will be made to-day (Saturday), weather permitting.

Motor Boat Race.

AN international cup, to be raced for annually by motor-boats, has been presented to the Automobile Club by Mr. Alfred Harmsworth. The Marine Motor Sub-Committee of the Club are formulating the conditions in connection with the first race. The following decisions have, however, been tentatively arrived at:—(1) That the race shall be for motor-launches not exceeding 40ft. O.A. measurement of hull. (2) That there be no restriction as regards motive power. (3) That all competing boats shall carry two hands, of whom the helmsman must be an amateur (to be defined hereafter). (4) The race to take place in some sheltered water in the United Kingdom, probably in Queenstown Harbour, Cork, just after the Gordon Bennett Cup race, which will be run early in July.



The First South African Motor-Car Meet. (See last issue, page 8.)

An Engineer's Lecture.

ON Saturday, at the Mechanics' Institute, Keighley, Mr. Heseldine, of Leeds lectured before the Association of Engineers on "Internal Combustion Engines for Motor-cars." Mr. H. C. Longsdon, who was in the chair, remarked that in the near future road locomotion would be tremendously changed by the motor-car, and he did not see why Keighley should not have as good a chance in the business of manufacturing motor cars as any other town. Mr. Heseldine, with the aid of excellent diagrams and sections thrown on the screen, gave a lucid and most helpful and enlightening lecture upon the "works" of a motor-car, and on the process by which the cars were propelled. He remarked that anybody who wished to be in the fashion must own a motor-car, and no car was considered of any standing unless it boasted at least 22 horse power. The railway companies were now seriously experimenting with motor-cars, which for their purposes would be built like corridor cars on two large bogie carriages, and would be of 90 or 100 horse-power and driven electrically. If, for instance, the Scotch express were late at York, and a man wished to get to Leeds, he

would arrive when his slow train had left, and would be sent on by one of the light motor-cars at a very considerable speed. It was gratifying to find that eminent mechanical engineers had now taken up the question of motor-cars.

A Club for South Wales.

A NUMBER of gentlemen interested in automobilism met together at the Royal Hotel, Cardiff, on Saturday to form a local automobile club. It was decided the name should be "The South Wales and Monmouthshire Automobile Club," the president for the year being Lord Windsor, who is himself an ardent motorist and the owner of a 12-h.p. Daimler. There were present Messrs. Godfrey Clark, Llantrisant, who presided; L. Gottwaltz, Penarth; Dr. Pritchard, Cardiff; D. J. G. Thomas, Hirwain; M. de Soldenhoff, Cardiff; A. L. Dowis, Cardiff; G. B. T. Nicholl, Newport; W. Parker Thomas, Cardiff; Victor E. Brukewich, Cardiff; G. L. Watson, Newport; Charles F. Peaty, Cardiff; A. J. Duchmin, Barry; Rees Jones, Barry; Harry Cousins, Penarth; J. J. Neale, Penarth; R. Clay, Cardiff; and H. West, Cardiff. Mr. T. P. Appleby, Penarth, is acting as hon. secretary to the new Club, which already has a membership of 56.

The Oxford Club.

A MEETING of the Oxford and District Automobile Club has been held at the Clarendon Hotel, to hear a paper by Dr. Turrell in justification of his contention "that at the present time a motor-cycle is the only form of car suitable for a man of moderate means." The doctor prefaced his remarks by defining a man of moderate means as one whose income enabled him to reserve £100 a year to spend on his pleasures after all the necessities of life had been provided. The first official run of the Club took place to Wallingford and Benson. Later in the day a dinner was held at Oxford, Mr. C. Rippon, the president, who was in the chair, expressing his satisfaction that they had had such a good run. He hoped it would be the first of a series which would be equally successful. Speaking of the Club, he remarked that at present they had 51 members, and he thought that was a very good start indeed. They were fortunate, too, in having members from outside Oxford, five coming from Reading and some from London. In the run that day, seventeen vehicles had taken part, and he was sure many Clubs of greater age and standing would have been satisfied with such a result.

A French Preference.

EVIDENTLY, even in France, the automobile will not entirely displace the horse, for the chairman of Messrs. Harrison, Barber and Company, the well-known horse-slaughters, at the annual meeting of the company the other day, said one thing which had affected them was the French taste for horse-flesh, some of the French people preferring a steak from a horse rather than one from an ox. That trade seemed to be a very steady one. If a horse could not walk, say, 30s. might be obtained for it at the knackers; but if the owner could get it to walk to the steamer, and export it, in Paris he could get £6 upon it; therefore a considerable profit was made on the transaction, while the English horse-slaughterer lost the chance of an operation—an interesting side-light on the Economy of the Equine.

The Irish Club.

THE annual general meeting of the Irish Automobile Club was held at Dublin a few days ago, the chair being taken by the Right Hon. Horace Plunket, president. The Secretary submitted the report of the Committee for the year 1902, which showed that the Club had prospered considerably during the past year, and was in an excellent financial position. The election of officers for the ensuing twelve months resulted as

follows:—President, Right Hon. Horace Plunket; chairman, Mr. W. G. D. Goff, J.P.; hon. secretary and treasurer, Mr. R. J. Meeredy. The members of the committee who were elected included the Marquis of Waterford, Lord Louth, Lord Plunket, Sir H. Robinson, K.C.B., and Colonel Chaloner Knox.

Dublin Headquarters.

In connection with the Gordon Bennett race the Chairman stated that the Irish Club had secured for the purpose of a garage and Club rooms the magnificent premises of the Earlsfoot Terrace Rink, Dublin, for a period of three months from the 1st of June next. These premises will afford accommodation of the very best kind for a very large number of cars, in addition to dressing-rooms, reading-rooms, etc., and will prove a great convenience both to members of the Club and the visitors from England and abroad. Mr. Plunket added that it was the determination of the Club to make every effort to extend a real hearty Irish welcome to their fellow automobilists, who would, no doubt, be present in large numbers. The Club are very fortunate in securing such admirable premises for this event, they being centrally situated and most commodious.

The Sheffield Club's Run.

It was a venturesome journey undertaken by the Sheffield Club on the occasion of their run to Dunford Bridge, the roads to which resemble those over Shap Fell, made all the more familiar by the presence of snow. Seven cars, three motor-tricycles and a quad carried twenty passengers, whose experiences were extremely varied. Mr. J. Barber's 12-h.p. Belsize towed two of the tricycles, one member sat on the bonnet of his car—to keep the carburettor from freezing, as he said—and something going wrong with the mechanism of the Secretary's car, caused the vehicle to refuse to travel forward; so, utilising the reverse, he went to his destination backward.

The Edison Accumulator.

MR. H. E. DICK, who is associated with Mr. Edison, has been in London recently, and had with him specimens of the new Edison automobile accumulator. The cell weighed 18 lbs., and had a 200-watt capacity. Noticeable features are the small distance between the plates, and the compact arrangement in all other respects. In external appearance it has one great advantage over the ordinary lead cells; the containing box, being of nickelled steel, looks much stronger than the wood or



Photo by]

The Sheffield Automobile Club at Dunford Bridge.

[Mr. J. Hudson Ligo.

Over the Course.

EARLY preparations for the great race in Ireland are being made, and on the 17th inst. the proposed course will be inspected. The Committee will arrange control stations, and go into the matter of providing for the safety of the public on the day of the race. They will be accompanied by the County Surveyors of Kildare and Queen's County, to whom all the defective portions of the course will be pointed out. A considerable amount of money will be spent in making the route as safe and as practicable for high speeds as possible. It is probable that the course between Carlow and Athy will be altered, and some portions near Kileullen may be neutralised. At a meeting of the Holywood Urban Council, the other evening, the Chairman said, with reference to the forthcoming motor race for the Gordon Bennett Cup, he had for some time past been in communication with the Automobile Club of Great Britain and Ireland with reference to their holding a hill-climbing contest at Holywood on the hill leading past the waterworks. The gradient on this hill was 1 in 6, and as 1 in 9 was about as much as a motor-car could manage, the Club was compelled to decline the invitation.

ebonite boxes commonly seen. The general result of an examination of the cell is, remarks Mr. W. Hibbert in the "Electrical Review," to remove some antecedent scepticism, and one feels that there is a serious competition to the lead cell not far away. The final decision will appear when the cells are offered to the public, and get tried by the infinitely varied rough usage and nescience of the general public.

Glasgow to London.

THE non-stop run organised by the Western Section of the Scottish Automobile should be a useful minor event in a year of great things. The object of the trial is to show the average individual that, with reasonable rest, Glasgow and London are within two days' car run of one another. The principle underlying the rules is that the trial is a test of reliability. No advantage, from the point of view of marks, will be obtained by a vehicle which travels at more than twelve miles an hour. Marks will be deducted for all stops other than those for traffic. Speed in excess of that required to gain the maximum marks (viz., twelve miles per hour on the open road, and eight miles per hour, or less, in traffic) will therefore be useless. The number of

cars of any particular type and horse-power entered by a manufacturer or agent is limited to two, and all entries must be made to Mr. R. J. Smith, hon. secretary, before the 13th prox. There will be a compulsory stop at Leeds, and should the entries prove numerous the occasion might be made the opportunity for a joint gathering of the Scottish and Yorkshire Clubs in that town. Should the number of entries be considered insufficient by the Committee the trial may be cancelled; but it is to be hoped that the event will, on the contrary, attract a large muster.

Leyland's Motor Fire Engine.

THE little town of Leyland has now its motor fire engine, this having been delivered within the last few days. On the day of its arrival it set out to quell a purely supposititious fire, which was located at a big mill about a mile from the town. As the red and yellow engine whizzed through the long High Street all the doors and windows were full of wondering faces. The engine came to a rest in the yard, the hose was run out and connected with the mill pond, and soon the water began to "play" in vigorous style. The two jets played against a towering chimney, which was imagined to be wrapped in flame. The full power of the hose could not be seen, as the wind blew the water at the tips of the jets into spray. It is said that the engine will force one jet of water 190 ft. high, and two jets 150 ft. The officials of several Lancashire fire brigades were present at the display.

Wrongly Using Cars.

A CHAUFFEUR employed by a well-known Parisian motorist was privately entertaining his friends in his employer's motor-car recently, when he ran into a passing vehicle. The driver was seriously injured, and also the four passengers, one of them being impaled on the shaft of the vehicle and dying instantaneously. It is a rather remarkable fact that three or four motor-car accidents which have occurred in this country have been on somewhat similar lines to this particular case, mechanics having taken out, unknown to their employers, parties of friends, and apparently growing reckless, if not wilful, in their driving. Motorists will have to adopt rigid regulations on this point, and provincial clubs should officially urge their members to exercise restraint over employees likely to take cars out for private parties.

Prevention of Corruption.

IN moving the second reading of the Prevention of Corruption Bill in the House of Lords, on Tuesday, the Lord Chancellor said the latest unpleasant development of secret commissions was in the motor-car industry. Motor cars were very complicated pieces of machinery, and required great care on the part of those who managed them; and the form of secret commission adopted in this case consisted in a payment to the person who was responsible to his employer for the care of the machine on the annual bill for repairs. Under such circumstances nobody would suppose that the motor would be very well cared for. In the course of the discussion Lord Alverstone pointed out that there were many honourable trades in which the remuneration was solely by commission, and therefore it was absolutely necessary to retain the word "corruptly" so that the Bill might affect only the agent who secretly paid commissions for the purpose of influencing persons to buy his master's goods. The Bill was read a second time.

In South Africa.

WE learn of considerable activity in the motor-car trade of South Africa. Quite a large number of White steam cars are seen in Johannesburg, where the local Motor-Car Company have a fine garage under the management of Mr. Frank Whittaker, and act as local agents for the Cudell cars. Mr. Graaf, the millionaire director of the South African Cold

Storage Co., has a 12-h.p. car and a 22-h.p. Daimler on its way.

The Scottish Club.

ON Monday, Mr. William Weir read a paper on "Possible Developments in Automobility" to the members of the Scottish Club (Western Section). A comparison was instituted between automobile cabs and horse-driven cabs for ordinary hiring purposes, the net result of which was to show the large gain in economy by the use of automobiles. The relative figures, including all items of cost, were given as for the horse cabs, practically 6d. per mile run, and for the automobiles slightly under 4d. per mile run. An outline was also given of the procedure to be adopted in running the automobiles, and it was also pointed out that public garages would prove the best repair shops for private owners. Consideration was given to the relative values of petrol, steam, and electricity.

The Irish Week.

EVERYTHING looks well for the automobile week in Ireland in July. Lord Londonderry is taking charge of the Bill to legalise the Gordon Bennett race in its passage through the Upper Chamber, and the directors of the Phoenix Park Club Races have decided to allow the Automobile Club to organise a gymkhana on their racecourse. They are also offering prizes to the value of £250 in connection with the event. Meanwhile the fund raised by the Automobile Club for the improvement of the highway over which the race will be run is steadily advancing, and the latest subscriptions received by the Secretary at 119, Piccadilly, W., have raised the total to £232. We hope this will be materially increased during the next few days, and that many of our readers will respond to the invitation to send 10s. towards making the coming race a really great event.

At a meeting held in Paris on Tuesday the formation of a Motor Cycle Club was decided upon.

It is reported that a company has just been formed in New York, with a capital of £540,000, to build "Mercedes" cars in the United States.

MR. ARGENT ARCHER has been appointed official photographer for the Motor-Car Exhibition which opens at the Agricultural Hall, London, on Saturday next, 21st inst.

MR. SCHWAB, the president of the American Steel Trust, visited the works of Messrs. Charron, Girardot, and Voigt last week, and placed an order for a 80-h.p. eight-cylinder car.

THE directors of Vickers, Sons and Maxim, Limited, report that the Wolseley Motor-Car Works, mentioned for the first time in last year's report, have given a fair profit on the capital invested, and this the directors confidently hope will be increased now that the organisation for the manufacture of motor-cars on a large scale has been properly developed.

VICKERS'S NEWSPAPER GAZETTEER for 1903 is the fourth annual issue of the work, which appears to have been prepared with much care. Recent revision and correction have given the work a value to every business office interested in newspaper work or in constant communication with the Press. The volume contains a complete alphabetical list of the newspapers of the United Kingdom and also a classified list of all the journals, reviews and periodicals, etc.

A PLEASANT run of the Yorkshire Club was held on Saturday to the old-fashioned town of Wetherby. The meet was at Harewood, and at 2.30 the following members and friends had arrived:—Mr. H. P. Kirk, 12-h.p. Gladiator; Mr. Atkinson, 11-h.p. Clement; Mr. and Miss Armitage, 11-h.p. Clement; Mr. Bayliss, Sunbeam car; Mr. A. W. Dougill (hon. sec.), 8-h.p. Loidis; Mr. and Mrs. Winn, Renault; Mr. Wharam and Mr. Borland, 4½-h.p. Renault; Mr. Roslington, 9-h.p. De Dion; Mr. Milner, Argyll; Mr. Pepper, 12-h.p. Belsize; Mr. Barton, Darraq; Mr. Bottomley, Boyer; and Mr. Smith, Gladiator.

"NUMBERING" MOTOR-CARS.

MOTORISTS are not a happy band, for while their pastime is a pleasurable one to practise, in certain districts it leads to the publicity of the police-court and the expense of legal proceedings. Carefully travelling a country lane, they may be suddenly pounced upon by a myrmidon of the law, whose exaggerated view of self-importance enables him to become insolent without outside provocation. And to answer such impudence according to its deserts may lead to consequences unforeseen—for the support of the magistrates is generally accorded those who walk in blue, and hide behind hedgerows, waiting for opportunities of swelling the County Funds by securing convictions against motorists.

Such being the case, and having regard to the truculent attitude of the County Councils, eighteen months ago, the committee of the Automobile Club decided to do Something, and in order that the proposals of experienced persons should be considered so as to effectively pass through the Houses of Parliament, a legislative committee was formed to suggest what that Something should be. After many conferences and consultations, suggestions for a new Act of Parliament—an up-to-date Magna Charta for motorists—were adopted by the committee of the Club, and sent to the wide world in the name of the Automobile Club of Great Britain and Ireland. Some of these proposals were contrary to the spirit and policy of the Club a few months before—but what of that? Something had to be done, and here was the Something.

So far unanimity had been secured—or, as least, opposition had not been allowed to penetrate from within the inner councils of the Legislative Committee. But when it was found that proposals were made for labelling cars like cabs, and numbering pleasure vehicles as though they were trams, murmurs of discontent were heard. These found expression in the automobile press, were emphatically urged at various discussions of provincial clubs, and were the subject of correspondence to the central club, all of which did not find its way into the official organ of that body. A year dragged along, and the Club's committee took little notice of the tide of opposition that steadily rose against such ideas being given forth as the views of automobilists. At length it was announced that a meeting would be held at the Club-house to discuss the matter; and then the storm broke forth. For the premises in Piccadilly would never hold a tithe of the opponents—practical and representative—to the restrictive and unwise proposals. This feeling grew upon the leaders of the Club, and in their organ it was declared that "in consequence of the number of applications already received for seats at the house dinner on that night, the executive committee have decided that further applications for seats for guests at the dinner on this occasion cannot be entertained, as it is feared that guests might occupy seats to the exclusion of members." Thus was it expected that a great crowd would be present to support the committee of the Club.

But, alas! on Friday last there was little evidence of any widespread desire to number cars, and the meagre attendance—eighty persons at the outside—revealed that few cared what was done. Many well-known motorists, recognising that the meeting could not be conclusive, stayed away; others felt that there was no need for the agitation, and, acting on the principle

of letting sleeping dogs lie, absented themselves as a protest against the policy proclaimed in the name of the Club by the committee. Mr. R. W. Wallace, K.C., presided, being supported by only a few members of the committee and faced by sixty or seventy gentlemen, whose attitude proved to be one of uncompromising opposition. Having briefly opened the meeting, he called on Mr. Johnson to read letters received from Mr. Arthur Stanley, M.P., Mr. Arthur Pearson, and Mr. E. Reynolds, of Sheffield, in favour of the committee's action, and Mr. W. Hurst, of Sheffield, who declared against such suggestions.

The legislative proposals having been put forward as recommendations, Earl Russell rose to criticise. His speech was quite refreshing, the experienced debater being evidenced as he marshalled his points with a good humour and raillery that delighted his audience and proved irresistible in raising a smile on the faces of those whose views were dissected into shreds. He complained that the members of the Club had not been taken into confidence, that no opportunity of meeting for discussion had been provided, and that the Club proposals had been published before the members had had an opportunity of understanding them. The chairman was twitted as to the care taken to absolve Mr. Montagu from the paternity of the Bill, and the speaker wondered if that meant that the committee

were no longer proud of their offspring. The form of the Bill was criticised. One clause provided for the right of appeal to the High Courts, but it was also said that "the person convicted may appeal on matters of evidence." Ordinarily such an appeal was to Quarter Sessions, and they were not improving their position by going before thirty prejudiced magistrates after being convicted by three. Dealing with numbers, we were reminded that "a Government is not over ready to introduce legislation that it can get out of introducing," and it was unlikely that any legislation would be carried through by anyone but motorists. If they preserved a neutral attitude there would be no chance of any Bill passing for five years. Prejudice was decreasing. If numbers were once adopted it would be practically impossible to get them off. It was a proposal that might have been expected from the police authorities, and he strongly

condemned it as unpractical, concluding by suggesting that a ballot of the members of the Club should be taken on the subject.

The discussion then became general, but one-sided. Mr. E. Midgley did not want to be numbered. Mr. R. Todd thought that in approving of numbering, motorists were giving more than they would obtain in return. Mr. C. Jarrott urged that nothing should be done until the Government brought in a Bill, and denounced numbering as tending to restrict trade. Mr. A. E. Cohen thought they might go forward to secure the abolition of the speed limit without suggesting the numbering idea. They should remember that at present they were a small proportion of the people.

Then Mr. Montagu gave a history of the matter which had led to his name being attached to the Bill, and declared his willingness to do whatever the Club wished in the matter, but submitted that some alternative would have to be proposed—a view emphasised by Mr. Staplee Firth. It was evident that "numbering" had not a friend in the room, and on the submission of a resolution to take a ballot, not a single hand was held up in opposition. Earl Russell and his friends secured a victory, and well deserve the thanks of the many provincial clubs, whose hostility to the measure has been somewhat ignored in London.



Photo by

Earl Russell, L.C.C.

[Russell and Sons.]

It was finally resolved to take a postal ballot of the whole membership of the Club on three points, whether there should be identification with removal of the speed limit; whether they should try to secure the removal of the speed limit without identification; or whether matters should be left as they are.

INTERVIEW WITH EARL RUSSELL,

On the morning following the discussion of the Club, our representative called on Earl Russell at his chambers in town and found him well content with the result of his opposition, as the following report of the conversation indicates.

"As soon as I saw the proposals," said his lordship, "I realised that they would be harmful to the industry and the pastime. The man who wants to go forty miles an hour along the highway will do so whether he is numbered or not. The driver at such a pace cares nothing for others on the road, and would smear his number with vaseline to retain the dust that flew up, or hang his coat over the identifying figures, with the result that the police were no better off, while innocent motorists would run the risk of being summoned."

"Doubtless the ingenuity of the wily motorist would be equal to the occasion, but why have these proposals been so long before the country with the official *imprimatur*?"

"That is more than I can tell. But I wrote to the Committee protesting, and suggesting that the views of the members should be ascertained. They took no action, and it was only when the opposition became general that it was decided to hold a meeting, and there, as you saw, the Committee had few friends. In fact, the series of observations made by the Chairman during the progress of the debate prepared the way for the final capitulation and his support being accorded to the resolution in favour of a ballot among the members."

"But, failing numbering, does not some alternative seem to be necessary in view of the very prejudiced feeling which prevails in official quarters with regard to motor-cars?" I queried.

"Yes, I quite agree," was the reply; "and the suggestion I have already made seems to me a feasible one for getting over the difficulty. A small metal plate, say, about the size of half-a-crown, bearing the name and address of the owner of the car, might be placed in some inconspicuous position on the dashboard or on the seat. Thus, when the car came to a standstill the local policeman could very easily identify the owner. The point is that a large number on the back of the car—whether three inches or three feet in height—could be easily obscured, and its purpose frustrated altogether. From the æsthetic point of view, too, much can be said, but evidently it is too apparent to motorists to need much emphasis."

"Some time ago, I believe, you secured the prosecution of the owner of a horse which was left unattended on the roadside; and it may become necessary for motorists generally to follow your example in carrying the war into the enemy's camp."

"You remember that case? Well, if horse owners do not show some toleration to motorists, a few such salutary lessons could be rightly and usefully applied. But there is another thing that motorists might do which would probably be effectual in ridding them of many of the difficulties they now have to encounter."

"What is that?"

"You will probably have seen that it is often the boast of chief constables at meetings of their County Councils that they have been able to secure so many hundred pounds for the county funds as a result of the fines imposed upon motorists. How would it be if a dozen or a score of car owners in any one given county would agree not to pay the fines, but to go to prison instead? In that case the Chief Constable, instead of adding so much to the credit of the county, would probably be asked to prepare a statement of the expense of keeping a score of motorists out of the county funds for no other offence than that they moved rather quicker upon the roadway than the driver of an ordinary horse-drawn wagonette."

The suggestion might usefully be considered, and possibly acted upon, the only difficulty being as to who would venture to make the first batch of new motor victims. I asked Earl Russell his view as to what course should now be taken by those actively interested in the numbering crusade, and we finished our chat with his assurance that the minds of motorists generally were so made up on the point that he had the utmost confidence that the ballot about to be taken by the Club will reveal to the Committee how much their proposals have been out of sympathy with the great bulk of practical motorists in the country. Earl Russell has no sympathy at all with the mad drivers who career about the country heedless of the convenience of others—in fact, he would increase the fines imposed on those people to £50, if need be, with imprisonment on commission of the second offence. But he is anxious that innocent motorists who have not imperilled life or limb on the highway, or proved themselves a nuisance, should not be made to suffer. In his view, and all will agree, this would be the inevitable result if any system of numbering were adopted. In fact, it has already been proved to have been the case in France. Motorists, by promptly replying to the official communications they will shortly receive, can do something to prevent the extension of that system to the United Kingdom.

A LEYLAND STEAM WAGON FOR EAST AFRICA.

THE illustration on page 25 depicts a special steam wagon recently built by the Lancashire Steam Motor Company to the order of the African Lakes Corporation, Limited, for use on very bad roads in East Africa. The boiler, which is adapted to burn wood as fuel, has a very large amount of heating surface and grate area. At the trials it was found that the boiler when burning wood fuel was quite capable of making more steam than was ever required by the engine. The platform of the vehicle is 13 ft. long by 6 ft. 6 in., and is built of teak throughout. There is an awning of timber covered with zinc from end to end of the machine. The frame is exceedingly strong, and is constructed of channel steel. The driving wheels are of the ordinary traction engine type, 4 ft. 6 in. diameter by 12 in. wide. The whole of the gearing and drive runs in an oil bath, a very important feature in the construction of wagons for use on sandy roads such as are found in Africa. The wagon, which is fitted with two speeds, equal to 5 and 2½ miles per hour, was well tested on grass fields in England before being despatched to Africa, and it was found that there was ample power to deal with a load under almost any conditions. The steering gear enables the wagon to turn a complete circle in a thoroughfare 36 ft. wide. The water capacity is sufficient for a run of about 20 miles, and the fuel bunkers hold enough wood for about the same distance.

THE German Reichstag has voted a sum of £14,000 for the purchase of motor-cars for the army.

HIS MAJESTY THE KING drove in a motor-car to Sandown Park to see his horse Ambush II. run in the race for the Gold Cup. The weather was cold and sharp, with a brilliant sun at times, but the vehicle was well protected from the wind, and his Majesty looked in remarkably good health.

MESSRS. J. ROTHSCHILD ET FILS LIMITED, have removed a portion of their carriage body works to more extensive premises at 45, Page Street, Westminster. Their latest type of body is to be known as "The Shrewsbury Phaeton" and is devised to permit access to all parts of the carriage from the side without the necessity of turning over seats. Another feature is that the back is considerably higher than previously made and is so constructed as to be a greater protection from dust.

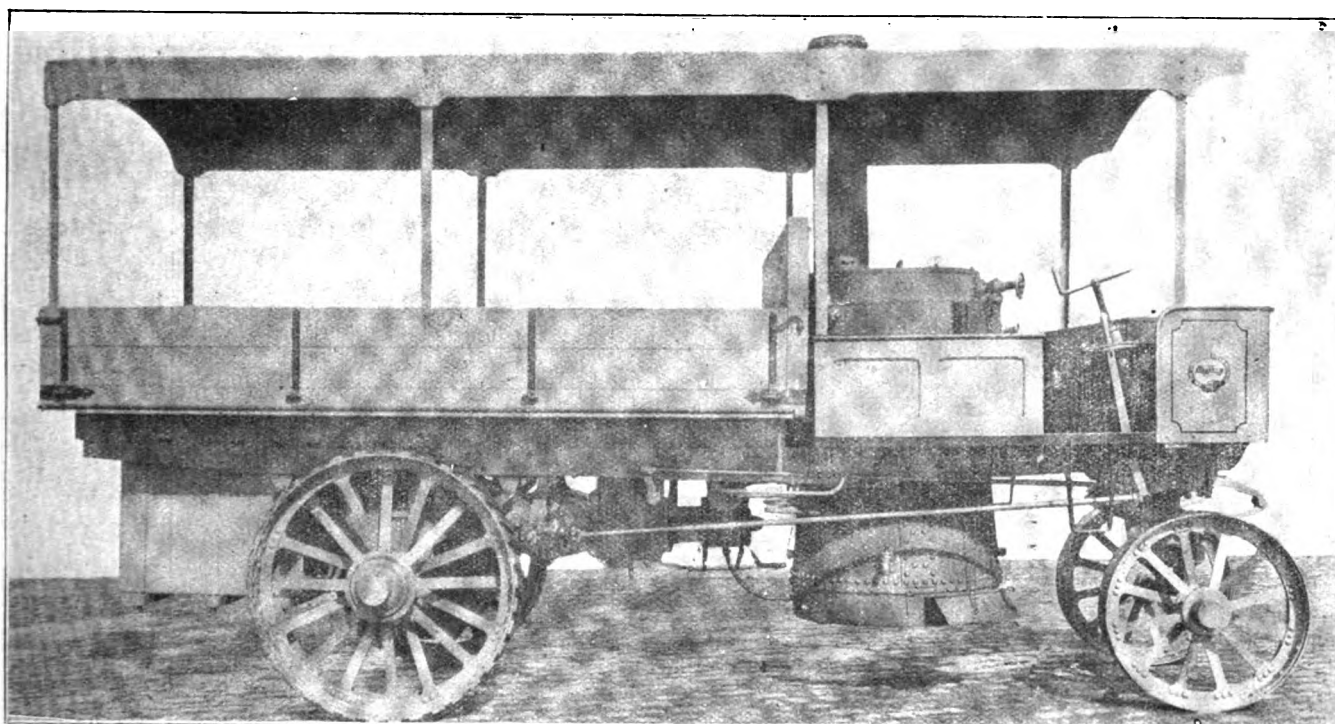
CONTINENTAL NOTES.

BY "AUTOMAN."

MR. H. R. KIRK, who drew No. 17 in the ballot for order of starting in the Paris-Madrid race, has selected Mr. Rowland Winn, of Leeds, to drive his Napier car in the contest. The course has been definitely fixed as follows:—Versailles to Bordeaux, 552 kilometres (342 miles), Pessac to Vittoria, and Vittoria to Madrid. The distances in Spain have not been calculated, and the roads there have yet to be traversed by M. Tampier, but they have already been carefully gone over by an official of the Royal Spanish Club and recognised to be fairly good. A special train is being arranged for the Press and for those who wish to follow the race in the "grand frère," as the railway is called in motor circles in France. The ticket will cost about £9.

THE question is frequently asked how long will it be before the supply of cars is equal to the demand? Every day new

the home of these vehicles is not in America but in France. It is in Europe where the motor-car has the greatest popularity and is the most useful; and the greatest demand will always be in Europe. In addition to these the requirements of the motor for America and Europe are different, and specially great is the difference between France and America. The roads in the former country are so flat, and wide, and straight, and well kept, that the steam or electric runabout is of special use, whilst in the latter country the powerful and long-staying touring petrol car cannot be used as it should be. The natural consequence of this is not that it means a case of sending to Europe the surplus production of an already great local trade; but rather is it a case of making a special manufacture for exportation, and as the motor trade is not yet in a stable definite condition, and as great changes are taking place from month to month and year to year—changes which soon get talked about, so that in a short time all the manufacturers have heard of them and can begin to study them—it will be difficult, if not impossible, for the Americans to follow European trade close enough for them to influence it very seriously.



The Leyland Steam Wagon for East Africa. (See Page 24.)

firms seem to be entering the trade, and to those who only make a superficial observation, it seems that this state of affairs cannot last long, and that soon the markets will be flooded. Then there will be a slump in the prices. Recently the firm of Hotchkiss, who were practically the originators of the automatic quick-firing gun, went into the trade, and now comes the news that the Krupp firm, of Essen, are going to make a steam car. Both firms are well equipped, and their entry into the industry has led many to reflect. The French trade fear an American invasion of motor cars turned out in colossal quantities, made of interchangeable parts, systematised and standardised, and much below the French cost price. There is not much danger to be feared from this source. The Americans never could get hold of the bicycle trade, and for a very good reason, which also applies to the motor trade. America always excels, and will always excel, in dumping into the European markets enormous surplus quantities of goods for which the great demand "in America" has already been the cause of the foundation of immense factories.

WITH regard to automobiles it must be remembered that

THERE, however, remains one question of demand and supply, and in considering this I have been making a short study of the latest statistics published by the "Auto," taken from the French taxing offices. The figures, although applying to 1903, must be taken obviously as referring more correctly to 1902. With regard to self-propelled vehicles, there were 1,438 motor-cars in France in 1898. To-day there are 8,207, or an increase of 6,769 in four years, that is to say, 1,692 per year, or about 20 per week. Now, I think that everyone will admit that 20 motor-cars per week as the supply of new motor-cars for a country like France is as a drop of water in the ocean, and this fact is accentuated if we go a little further into the figures and separate Paris and the provinces, for on the latest reckoning Paris has 1,673 motor-cars and the provinces 6,534, that is to say, roughly speaking, Paris takes twenty per cent. of the motor-cars and the provinces eighty per cent., so that out of the twenty cars per week average sold for the last four years, Paris bought four cars and the whole of the rest of France sixteen cars. Regarded in this manner one can better realise how small and insignificant the trade is at present in comparison with what it may be.

IN France there are 2,800,793 vehicles propelled by animal traction, and there are 5,100,694 beasts of burden, that is to say, horses, donkeys, mules, and bullocks. There is, therefore, one motor-car for every 341 vehicles propelled by animal traction. A rough estimate of the horse-power of the motor-cars in France may be taken to be 50,000 h.p., or one horse-power for every hundred traction animals; in other words, there is less than one-third of one per cent. of motor-cars and less than one per cent. of horse-power (figuratively speaking). The business is, therefore, in its infancy. It has only just begun, and only the very outside fringe of the demand has yet been touched. The number of motor-vehicles in demand may reach 10 per cent. of those propelled by animal traction, and if I may be permitted to make this proposition it would bring the total up to 280,079, or, deducting those that exist at present, it would leave room for 271,872 new cars.

ALL this refers to the demand, but what shall be said about the supply? Panhard and Levassor are reputed to turn out 1,200 cars a year, and M. Darracq expects to make 1,000 cars in 1903. No other makers approach these figures, and certainly 10,000 cars per year are not being made in France

THE management of the French end of the concern will remain for some years in the hands of the present staff and under the direction of M. Darracq himself.

LAST Saturday a most imposing automobile demonstration was made at Charlottenburg, near Berlin, on the opening of the Berlin Motor-Car Exhibition, which was inaugurated by Prince Henry of Prussia. At six o'clock in the evening no less than 307 motor-cars, decorated and illuminated, proceeded in line to the Emperor's Palace, to be reviewed by him. In the cars were seated an illustrious crowd, amongst whom were General and Mrs. Becker, Prince Frederic Leopold, the Prince of Hohenlohe, the Duke and Duchess of Ratibor. At the Emperor's Palace the Duke of Ratibor presented to His Majesty an album containing the names of all the participants.

THE leading French firms are preserving great reticence with regard to their 1903 racing cars. *La France Automobile*, however, states that the Mors vehicles will develop over 100-h.p. and have a Jenatz magnetic clutch. The De Dietrich racer is credited with only a 40-h.p. motor, but it is said that the general outline of the vehicle will be on new lines

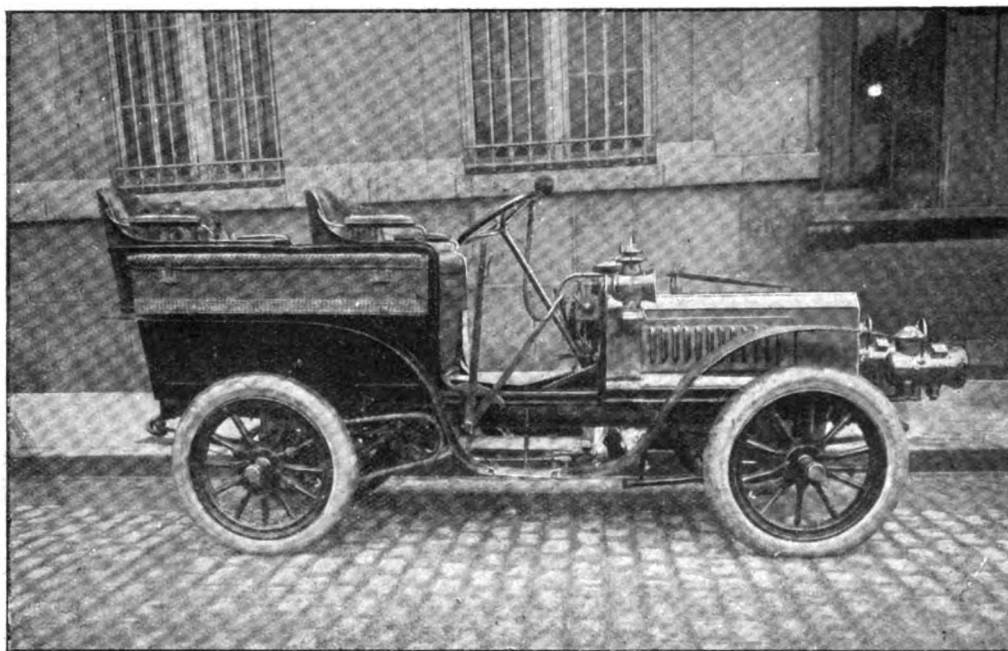


Fig. 1.—The Rochet 12-h.p. Car. (See Page 27.)

to-day and even if that figure was the correct one, at least one-half are being exported, whilst the importations are so small that, apart from 200 Mercedes, they may be considered as nothing. If, therefore, we assume that the present supply of French cars for sale in France is 6,000 per annum, it would take a little over forty-five years for the supply to catch up to the demand, and this seems to leave ample room for production to be increased by the existing makers, and also for new builders to join in the trade.

THERE may of course be, and no doubt will be, occasional slumps of short duration, but I think that, taking the above figures into consideration, and also remembering that the delivery wagon and public service side of the industry has not yet been seriously commenced, at least ten years of good trade in motor-cars may reasonably be expected.

THE business of the Darracq Company, including the works at Suresnes, has been sold to an English group. The whole of the arrangements have now been made, and the business is transferred to its new holders, who are a limited company, amongst the large shareholders of which is Mr. Avery, of Birmingham.

with the view of reducing the air resistance to a minimum. Finally it is hinted that the Panhard racer will be on the lines of the Paris-Vienna cars.

AT the International Automobile Exhibition opened in the building known as La Flora, at Charlottenburg, near Berlin, on Saturday last, there are altogether about 1100 exhibitors, including the Cannstatt Daimler, Protos, Adler, Cudell, Bergmann, Stoewer, and Continental Caoutchouc Companies.

THE Automobile Club of Holland has just held its annual meeting. The club, which has now a membership of 154, is organising a reliability trial for August next on the lines of that held by the A.C.G.B.I. last year.

DURING the Reliability Trials last year a horse was killed between Hildenborough and Tonbridge. The owner brought an action against the owners of the motor-car [that offended in the matter, and has obtained judgment for £75—not a bad price for a horse.

THE Index to Vol. IV. of the *Journal* will be published with next week's issue, which will be on sale at the Motor-Car Exhibition, at the Agricultural Hall, London, N.

THE ROCHET 12-H.P. CAR.



FOR the 1903 season the Rochet Company, of Paris, have introduced a new 12-h.p. four-cylinder car, of which we are able to publish a general view (Fig. 1) on p. 26. The frame is of wood and steel; it carries in the fore part a four-cylinder motor, the cylinders being 88 mm. diameter by 110 mm. stroke. The usual form of electrical ignition is adopted, while the mixture is furnished by a spray carburettor of the company's own design. The water circulation for the cooling of the motor is maintained by a pump and radiator, the latter being of the usual ribbed

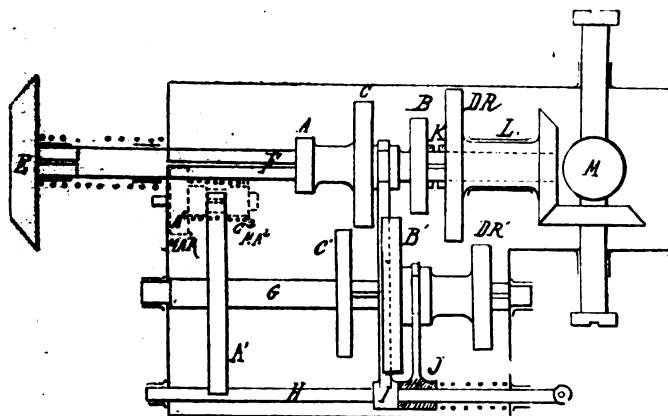


Fig. 2.—The Rochet Change-speed Gear.

type, but set in a frame in front of a square bonnet. The engine is provided with a governor acting on the admission; an "accelerator" and "moderator" are also fitted, by means of which the speed of the motor can be regulated as desired.

Coming now to the transmission, four speeds forward and a reverse are provided, these being all actuated by a single lever. The engine is connected to the gear-box through a cone clutch, the power then being conveyed to the rear road wheels through a differential counter-shaft and two side chains. A section of the change speed gear is given in Fig. 2, from an observation of which it will be seen that on the top speed the power is transmitted direct, none of the gear wheels being in action. E is the male portion of the clutch connected with the motor fly-wheel; it is mounted on the end of the shaft F, which also carries a sliding train of pinions. On the side shaft G is a second sliding train, the object of which is to unmesh all the pinions on F when driving on the top speed. The fork I which controls the sliding train on the shaft F is rigidly connected to the lever H; on the latter is loosely mounted a fork J, which controls the train C', B', DR'; a spring tends to force this latter continually to the left. The gear train B', DR' is limited in its movement to the left, first by the piece I, the position of which is determined by that of the upper train, and secondly by the pinion C', against which the face of the wheel B' bears when at the end of its leftward movement. The pinion DR is mounted loosely on a sleeve on the shaft F, the sleeve also carrying on its end the bevel gear which transmits the power to the differential shaft M. For the first three speeds the pinion DR' is in mesh with DR, but on the fourth they are disconnected. To give the first speed, pinion A is connected with A' and DR' with DR; for the second speed C meshes with C', DR' still being connected with DR; and for the third the power is conveyed through B, B' and DR', DR. The fourth, direct, speed is obtained as shown in Fig. 1, the sliding train on the shaft F being moved to the right until the jaw clutch K is brought into contact; the train B' DR' is simultaneously moved to the right, and all the pinions disconnected, so that the shaft G no longer rotates. To obtain the reverse motion, the upper sliding train is moved to the extreme left until the pinion A meshes with that marked A'; at the same time the side of pinion C is brought into contact with the small gear wheel C', and pushes it to the left until it meshes with A'; the power

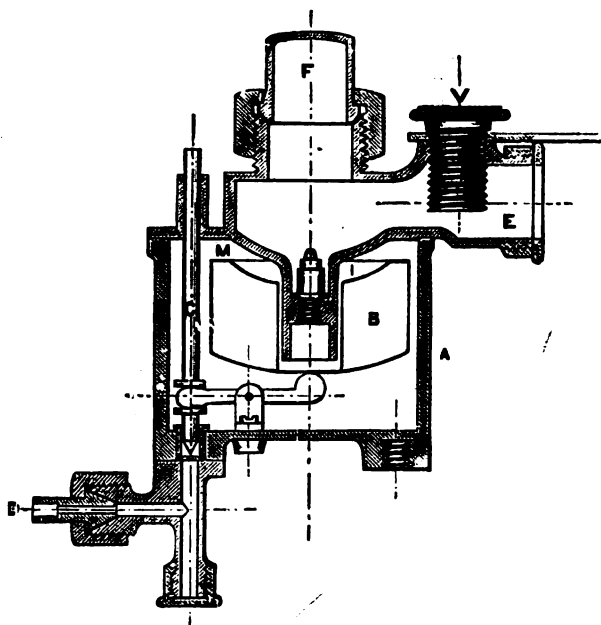
is then transmitted in a reverse direction through pinions A, A' and C', A' DR' and DR.

Inclined wheel-steering, hand and foot double-acting brakes, are other features of the car, which is mounted on artillery wheels shod with 820 mm. by 120 mm. pneumatic tyres. It weighs about 18½ cwt., and can attain a speed on good roads of 40 miles per hour. We may add that the agents for the Rochet cars in this country are the British and Foreign Motor-Car Company, Limited, of Liverpool, and the New Automobile Company, of London.

THE G.O.M. CARBURETTOR.



HEREWITH is given a sectional view of a new float-feed carburettor lately put on the market by Messrs. John Child Meredith, Limited. As will be seen, it consists of a chamber A, in which is a float B, that keeps the liquid at a constant level, and the needle E, which stops the arrival of the petrol when the proper level is attained. The spirit arrives through the canal D, connected with the main reservoir; the air enters at E, and the gas is sucked through the canal F, connected with the inlet valve. At each aspiration of the motor the spirit rushes through the small hole of the passage I, and is intimately mixed with the air entering at E. Some bubbling takes place in the space M, which mixes the petrol and air intimately. After a charge of spirit has been drawn up from the chamber A, the float drops down and bears on the counter-balance of the needle C, which lifts up to admit a quantity of petrol equal to that which has left the chamber. The only adjustment necessary is done by the tap V, the location of which regulates the quantity of air admitted. The position of the tap is determined when the fewer number of explosions is obtained for a certain quantity of liquid. To mix alcohol (when this is used instead of petrol), with the air more intimately, the canal carrying the gas to the inlet valve is surrounded by a



jacket in which part of the exhaust gases is admitted, or the cooling water used for the engine, which permits of the proper temperature being obtained for the best results. It is not necessary to alter the tap V, when once adjusted, unless there is extreme variation in the temperature; even then the engine would, it is claimed, work, although, of course, the results would not be so good as if the air supply were correct.

THE Hon. C. S. Rolls will, we understand, drive a Panhard car in the Paris-Madrid race.

NEW LOCOMOBILE STEAM CARS.

HEREWITH we illustrate two new types of steam cars recently introduced by the Locomobile Company of Great Britain, Limited. Fig. 1 shows the 10-h.p. four-seated dos-a-dos, which is notable by reason of the adoption of inclined wheel-steering and wood wheels, the latter being 28 inches diameter, shod with 3 inch pneumatic tyres. Steam is provided by a 16 in. boiler fitted with superheater. The engine, which

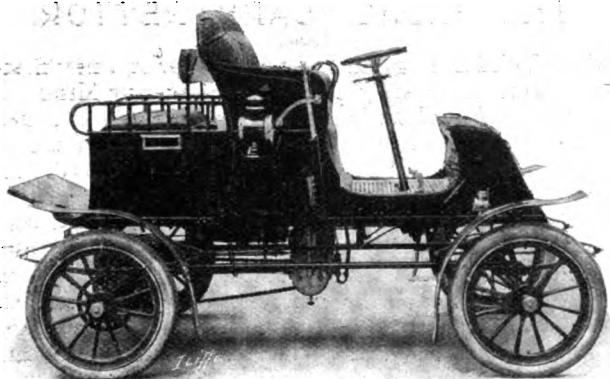


Fig. 1.—The Locomobile 10-h.p. Dos-a-Dos.

is entirely enclosed, is of the Whitney type, with cylinders 3 in. diameter by 4 in. stroke. Steam-operated air and water pumps are fitted, while special attention has been devoted to the lubrication of the engine. An extra large water tank is provided, this having a capacity of thirty-eight gallons. The car has a wheel base of 78 in., the track being 54 in. In Fig. 2 is given an illustration of the latest Loco-Surrey; this has a 16 in. boiler and a 2½ in. by 3½ in. engine. Both vehicles are

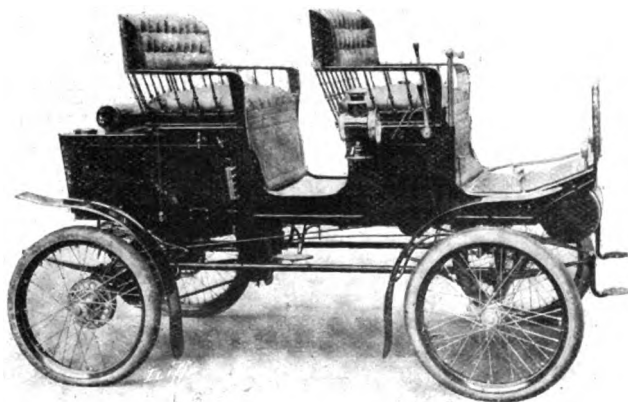


Fig. 2.—The 10-h.p. Loco-Surrey.

equipped with an improved differential gear, the shell of which forms two brake drums, one on either side of the sprocket wheel. Brake drums are also fixed to the hubs of each wheel. The two bands on the differential are simultaneously applied by one pedal and the two side brakes by another; both pairs are provided with compensating devices. The rear axle is carried on four rolling bearings, while the front axle is equipped with ball bearings.

At the annual meeting of the Hart Accumulator Company, Limited, Mr. G. W. Kidd, the chairman, said that after two years of experimenting they had secured a plate worthy of being put on the market for motor-car work. The Company is now fairly well engaged in this class of work.

THE SOURCES OF NOISE IN MOTOR VEHICLES.

(Concluded from page 12.)

THE noise due to the reciprocating parts is difficult of elimination in an explosion motor, subject as it is to constantly varying stresses. The slightest lost motion in the bearings of the connecting rod, either upon the crank pin or the gudgeon pin, is the source of a distressing knock whenever the piston changes from positive to negative work and the reverse. A fly-wheel which is not keyed to its shaft with absolute rigidity becomes, in operation, the source of nerve-racking thumps. These noises are immensely accentuated when the motor is doing full work at low speed, as the torque then becomes the large factor in the power produced. Insufficient flywheel capacity is also the cause at low speed, especially when hard work is called for. A motor, which cannot be throttled and sparked so as to run very slowly when the carriage is standing, is not likely to be noiseless in operation. No doubt, incorrect spark timing is a prolific cause of unnecessary noise, abnormally early ignition producing loud "thumps" and undue wear of the reciprocating parts. Some automatic device to time the spark is an essential requisite of the quiet running motor. A moderate speed petrol engine with properly closed valves, an intake silencer, with means to conveniently take up wear in all bearings, sufficient flywheel capacity and an automatic spark timer properly adjusted, ought to be a quiet running machine when at work, and, if it has a proper throttle, should prove a nearly noiseless one when standing.

Vehicles employing spur or bevel gear wheels for transmitting the power to the driving axle necessarily produce some noise therefrom. If all the gears be fully encased and operated in an oil bath the noise from this cause may be sufficiently minimized if the gear wheels are perfectly meshed and correctly cut. In case, however, that there is any defect in their alignment, the slightest looseness in their bearings or the least opportunity for spring in the material forming the supports of their bearings, the gears tend to push away from one another and are thrown out of correct pitch. The pure rolling friction between their teeth then becomes complicated with a sliding friction, the tooth outline is rapidly destroyed and the destructive action goes on increasing, with the production of a horrible grinding which is most offensive, especially to the trained ear. The operation of bevel gears involves a powerful thrust, tending to throw the two shafts out of a perfectly rectangular relation, and unless the bearings be extremely rigid and well-fitted, faulty mesh and excessive noise are the results. When gear-wheels are not enclosed it is practically impossible to maintain their lubrication, they become filled with grit and the correct tooth outline is soon lost, after which quiet operation is not to be expected. Gear-wheels having insufficient width of face or those which operate at undue peripheral speeds wear rapidly, and the inevitable accompaniment of this deterioration is a very unpleasant grinding noise.

The choice of materials for gear-wheels which mesh with one another is an important matter, and it is a generally accepted belief that pinions of unlike materials operate most quietly together. If the use of fibre or rawhide were permissible upon grounds of strength, much noise might be prevented. It ought to be possible to use such materials if sufficient width of face were allowed to compensate for the inferior strength of the material. In so far as gear-wheels can be dispensed with in the ordinary working of a motor-car, the noise of its operation may be lessened. Vehicles which have a direct transmission from the engine shaft to the axle, when operating upon the usual running speed, are to be commended as far as noiselessness is concerned. The clashing of the gear-wheels when a change of speed is being made in transmissions of the sliding pinion type may be entirely obviated if the gears are cut upon the proper system and not too fine a pitch chosen.

A chain drive ought to be nearly noiseless when new and in good condition, but as chains are hardly ever encased in present automobile practice, and as they are particularly vulnerable to grit and difficult of lubrication, they are subject to rapid wear. After the rivets have begun to wear and the tooth outline is deformed the chain stretches and no longer fits the sprockets. The block or roller ceases to fall into its place properly, but each block strikes its tooth and later snaps into its space. There are thus two separate noises for each link as it passes each sprocket—when it strikes the tooth and when it later snaps into place, and much noise is the result.

The rattle of the frame or running gear and its attachments is the least excusable of all the noises which an automobile is guilty of. A vehicle running upon pneumatic tyres should make no noise from this cause, but this is far from being the case. Distance rods are a prolific cause of rattle. They are generally attached to the frame and to the rear axle by plain studs or bolts of unhardened material passing through holes in the ends of the rods. Whenever the engine is propelling the vehicle the rod is under compression, but whenever the axle or wheel

THE AGRICULTURAL HALL.

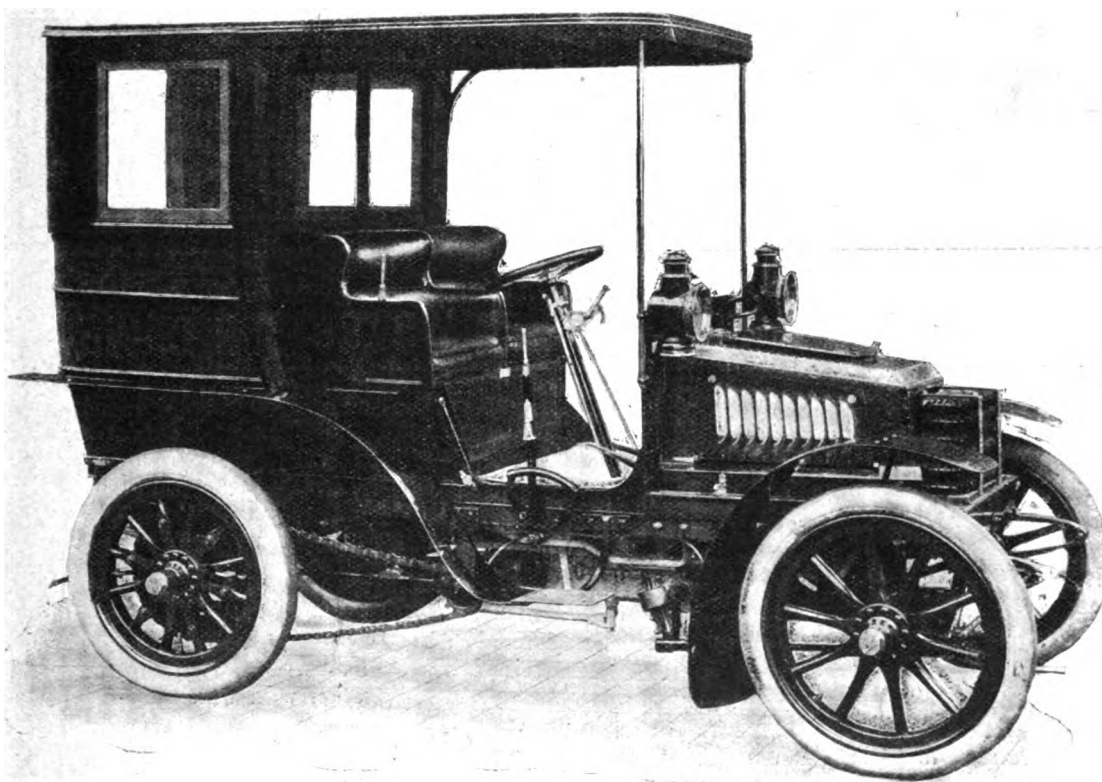
HOW TO GET THERE.

THE Royal Agricultural Hall, Islington, where the great Automobile Show of 1903 will be held, is accessible from every part of the Metropolis by 'bus, tram, train and 'tube,' if the latter may be regarded as a means of locomotion apart from the ordinary railroad. Within easy reach of the City and the West End, it has proved a most popular centre of automobilism in the spring of the year.

Visitors from the provinces, too, will find the Agricultural Hall easily reachable, and the following handy ways of reaching the building should be remembered by distant friends arriving in London.

From Liverpool Street (G.E.R.)—By way of South Place to the Moorgate Street Station on the City and South London Electric Railway and thence to the Angel Station.

From Fenchurch Street (L.T. and S.R. and G.E.R.)—Go to Moorgate Street Station by way of Moorgate Street or Bishops-gate.



The Century 16-h.p. Brougham. (See issue of February 14th, page 969.)

brake is applied the distance rods are under tension, and in this way the bearings of the rods are alternately subjected to stresses which tend to develop looseness therein. The constant action of the rear springs, as the vehicle passes over rough roads, and the continual presence of grit, makes the wear very rapid, and as no adjustment is provided at these bearings they become very noisy when the vehicle travels over any but perfectly smooth roads.

Brake bands are generally loosely held when not in action, and the brake actuating mechanism contains a number of unadjustable joints which develop looseness and rattle after continued use. Steering gears which develop loose joints not capable of being taken up contribute to the noise, as do the creaking of spring leaves upon one another and the rattle of spring links when worn. A loose mud guard is also unpleasantly evident to the ear. A scrupulous attention to the details of bearing adjustability, and the lubrication and protection of moving parts will in the end give us a quiet running petrol car, and if the signs of the times be read aright it is none too early for the manufacturers to bestir themselves in this regard.

Cannon Street (S.E. and C.R.)—Three minutes' walk to the Bank Station on the C. and S.L.R.

London Bridge.—Proceed by the subway to the station of the C. and S.L.R.

King's Cross (G.N.) and St. Pancras (M.R.)—Go by 'bus to the Angel, Islington, or—three minutes' further along the Upper Street—direct to the Agricultural Hall.

Euston (L.N.W.R.)—Follow the route from King's Cross and St. Pancras Stations.

Waterloo (L. & S.W.R.)—The Hall can be reached by underground electric railways—all the way, first to the Bank, and thence by the subway adjoining, to the Angel station.

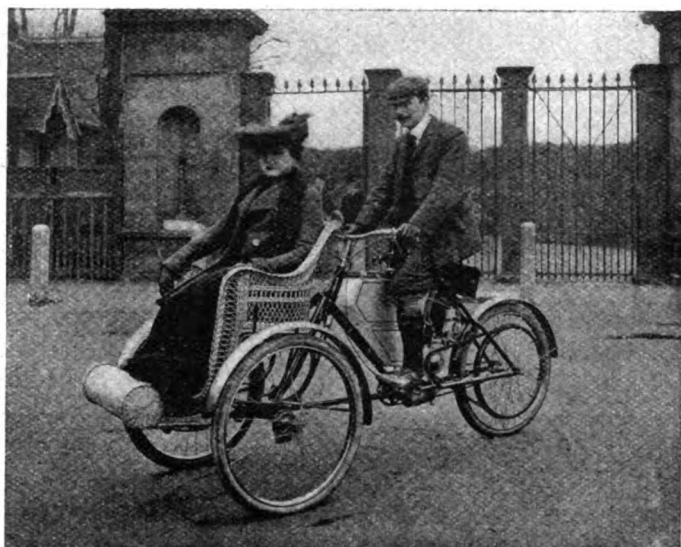
Marylebone (G.C.R.)—Train from Baker Street on the Metropolitan Railway to King's Cross, and then as directed above.

Paddington (G.W.R.)—Underground train from Praed Street, Bishop's Road, to King's Cross, and thence by tram.

The nearest point to the Hall on the City and South London Electric Railway is the Angel Station.

MOTOR-CYCLING NEWS.

FROM the Ormonde Motor Company we have received a copy of the catalogue of the "Kelecom" motors and "Ormonde" motor-cycles that they have just published. This is one of the most complete booklets of the kind so far issued, and comprises both a catalogue and a handbook, giving a full description of the various parts. Time was when it was most difficult to get illustrations of the "innards" of automobiles, but things have changed, and



The Ormonde Convertible Tandem Tricycle.

nowadays makers vie with each other in publishing the most complete handbook. Thus, in the Ormonde booklet we find not only illustrations showing general views of the company's motor, motor-bicycle, tandem, fore-carriage, and trailer, but sectional drawings of the engine, carburettor, silencer, contact breaker, valve lifter, etc., accompanied by terse but clear descriptions. Motor-cyclists generally will find much useful information in the Ormonde booklet and should procure a copy.

THE first motor-bicycle race in Spain was run off a few days ago on the road between Madrid and Guadalajara. The winner was Sr. Suaseac, who covered the 100 miles in 3 hours 14 minutes.

A MEETING is to be held in Edinburgh on the 13th to consider the advisability of forming a motor-cycling club for Edinburgh. The meeting will be held in the North British Station Hotel, and all motor-cyclists in the district are invited to attend.

THE opening run of the season of the Motor-Cycling Club on Saturday last was marred by the wretched state of the roads, due to the heavy rain of the morning. It is therefore not surprising that only twelve members left at the appointed time. Various little troubles were experienced *en route*, but eventually the whole party got into Brighton. At the Old Ship Hotel in the evening a dinner was held, at which no less than thirty-seven members and friends sat down. Mr. S. F. Edge, who occupied the chair, in the course of an interesting speech, generously offered a prize value £20 to the member of the Club who first makes an actual non-stop ride of 200 miles under proper supervision.

A COMPACT motor-cycle tyre repairing outfit has just been put on the market by Messrs. Wm. Guest and Son, of the Neptune Works, Sheffield. Looking through the sample outfit sent us, we find a tube of solution, a quantity of French chalk, spare valve tubing, a plentiful supply of prepared patches of different sizes, and pieces of canvas and prepared patching. New addi-

tions to repair outfits are found in a small piece of copying pencil and three sulphur tablets. The former will be found useful in marking the location, when discovered, of the puncture in the air tube, while the sulphur tablets are intended for removing the grey deposit on the tubes to enable the patch to properly attach itself in position. A small circular, giving some useful hints, completes an outfit which should find a place in all motor-cyclists' tool bags.

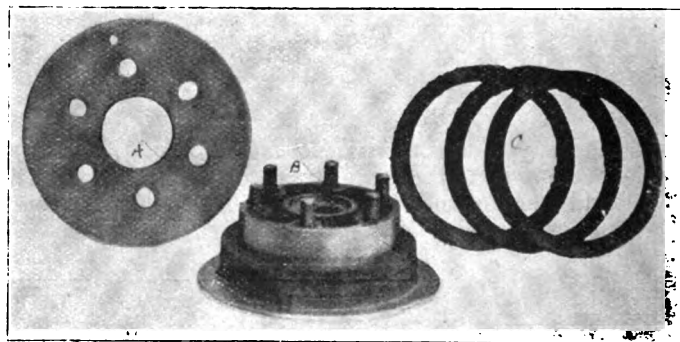
ON the last Saturday of the present month—the closing day of the Motor-Car Exhibition in London—the Ulster Centre of the Irish Motor-Bicycle Union will hold its first hill-climbing contest. Prizes are being presented by Messrs. W. M. Inglis and E. J. Shaw.

THE motor cycle race between Fournier and Barden, which was to have taken place on Saturday last at Canning Town, was postponed until the 12th inst., owing to the state of the track—the result of the rainy weather.

THE Motor Cycling Club is organising an Easter tour in the New Forest district, making Salisbury the headquarters. "Out-and-home" rides will be arranged from that centre.

A MEETING of members of the Motor-Cycle Trades Association was held on the 4th inst. at Anderton's Hotel, Fleet Street, E.C., when it was decided that the Association be registered as a company limited by guarantees of 5s. per member. The subscription is to be one guinea, free of entrance-fee. Mr. E. H. Arnott proposed, and Mr. Jackson seconded, that the Association should equally forward and protect the interests of all branches of the motor-cycle trade, whether directly or indirectly connected, one of the special objects of the Association being to mitigate the unnecessary trouble and expense consequent upon the number of exhibitions held every year in London. An amendment by Mr. Chandler, and seconded by Mr. Herbert Smith, proposed that the object of the Association be to regulate and control the interests of the motor-cycle trade by combination for the benefit of its members. This was carried by eight votes to five, and on being put as a substantive motion, was carried *nem. con.* The following were elected as members of the committee: Messrs. A. Brown, J. Dring, Garrard, Jackson, Belcher, J. Van Hooydonk, E. H. Arnott, A. Goodwin, D. Citroen, and Batson. Mr. S. J. Sewell was appointed secretary of the Association, subject to his consent being obtained.

IN the 1903 model Werner motor-bicycles the transmission is by a wide flat belt of specially selected and prepared leather, and in conjunction with which a special non-slipping pulley is



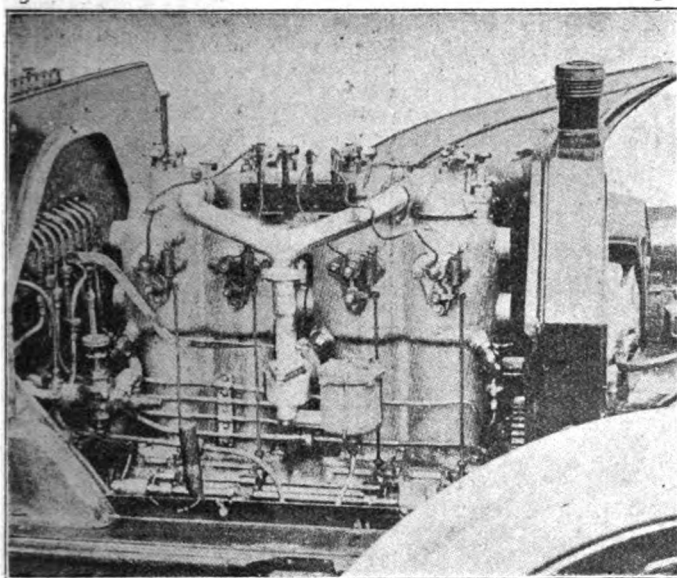
used. An illustration of the latter is given herewith. The pulley is made up of two flanges, which act as guides to the flat belt, and a number of compressed leather rings C, which fit upon the drum of the pulley. It will be noticed there are already three leather rings on the pulley B. When the full number of rings have been placed on the drum of the pulley, the plate A or flange is put on over the six threaded studs, and by means of nuts the rings are compressed between the flanges until a perfect grip is obtained.

HERE AND THERE.

J MR. WATSON, of yacht-building fame, is considering a design for a motor-lifeboat.

LORD CASTLEREAGH is one of the latest military accessions to the ranks of automobilists.

THE headquarters of the Volunteer Motor Corps are to be at Sanctuary Chambers, Westminster.



View of Motor of 1903 18-22-h.p. Mercedes Car.
(Allgemeine Automobil Zeitung.)

BRADFORD spends £2,000 in providing carriages and horses for the use of committees and officials. Why not experiment with motor-cars?

THE annual dinner of the Busy Bees Musical Society of Messrs. Hoare and Sons, the motorists' tailors, has just taken place under the chairmanship of Mr. Frederick Hoare.

THE Electric Ignition Company ask us to mention that they are only making the terminals illustrated in our last issue in conjunction with the E.I.C. sparking plugs, it not being intended to supply them separately.

THE defendant in a case of furious driving heard at Kingston admitted going eighteen miles an hour at Surbiton, but pleaded in extenuation that he had driven the Archbishop of Canterbury, in Whitehall, at a greater speed without being stopped.

MESSRS. JOSEPH LUCAS, LIMITED, have sent us copies of their 1903 catalogue of "Motoralities," which include lamps, pumps, valves, tyre repair outfits, jacks, horns, and a variety of other useful accessories for motorists. A small separate pamphlet deals with the Wells-Lucas lubricating oils, for which Messrs. Lucas are sole agents.

QUITE a bundle of leaflets describing their specialities has reached us from the Automobile Components, Limited, the agents in this country for the Societe de Constructions Mecaniques de la Loire. One list deals with the "Automotor" petrol engines, which are made in sizes from 2½-h.p. single cylinder up to 100-h.p. four-cylinder. Another deals with the Automotor set of fittings for building motor-bicycles, two styles being shown. The third list deals very completely with the light car set; this should prove of interest to small motor-car agents up and down the country, as it enables them to turn out an attractive little two-seated car with 4-h.p. engine to sell at the popular price of £110. List AA is a general one and gives particulars and illustrations of the 4-h.p. voiturette, a 4-h.p. motor-tricycle, and the Automotor 10-h.p. two-cylinder car, the latter being one of the company's latest productions.

THE duty on motor cars and cycles imported into British India is at the rate of 5 per cent. *ad valorem*.

MR. SAMSON PARSONS has opened a garage for electrical vehicles near the Bank Top station, Darlington. It is equipped with apparatus for the re-charging of batteries.

ON Thursday Mr. Rowland Winn read a paper on "Various Types of Transmission as Used on Motor-cars," at the headquarters of the Yorkshire Automobile Club at Leeds.

THE Woodstock Motor Mart and Repository have opened a garage at 56, Broad Street, Birmingham. Adjoining it is a large workshop well equipped with tools for carrying out all classes of repair work.

THE Locomobile Company of Great Britain have sent an invitation to the American team competing for the Gordon Bennett Cup to make their depot in Sussex Place, South Kensington, their headquarters while in London.

A CAPITAL catalogue of the Clyde motor-bicycles comes from the Clyde Cycle and Motor-Car Company, Limited, of Leicester. A general description of the various parts of the machine is one of the features that should prove of interest to novices.

AT the garage of the Firefly Motor Company, High Street Croydon, an auction sale of about forty motor-cars and motor-cycles is being held to-day (Saturday). This is the first of a series of sales to be held every two months during the season.

THE Dechamps Motor Company, Ltd., has been registered with a capital of £1,500 to acquire from the Graphic Motor and Engineering Company, Ltd., the business, goodwill, and the right to use the name Dechamps in connection with motors, motor-cars, etc.

AMONG the witnesses in the Cavendish settlement case have been Mr. Frederick Frenzels, who deposed to going to the Strutt's house at Maidenhead on a motor-car and making the acquaintance of Mr. Cavendish; and Mr. A. F. Collins, who testified as to purchase of a motor-car by the plaintiff.

MR. GEO. LINNELL, of Market Deeping, and a member of the Lincolnshire Automobile Club, has sent us a photo, reproduced herewith, showing the simple and handy luggage-carrier he has



Mr. and Mrs. Geo. Linnell on their 6-h.p. Marshall Dogcart.

devised and applied to his 6-h.p. Marshall dog-cart. The carrier, which can be put on in two minutes, folds up neatly so as to be out of the way when not in use.

MOTOR-CARS were a feature of the election at Woolwich on Wednesday, and will prove equally useful in the bye-election for the Rye Division of Sussex. Amongst the Parliamentarians lending automobile aid are Lord Brassey, Sir George Newnes, Mr. C. D. Rose, M.P., and Mr. R. L. Harmsworth, M.P.

THE Swiss Automobile Club is organising an international race from Neuchâtel to Corcelles-la-Tourne for the 5th July next.

MR. FREDERICK LITCHFIELD, of the Sinclair Galleries, Shaftesbury Avenue, W., has disposed of his lease to a firm of motor-car manufacturers.

CAPTAIN J. A. COLE, J.P., has been elected chairman of the Lincolnshire Automobile Club, and Captain Boothley and Mr. Parsons Wright have been added to the committee.

MESSRS. LAKE AND ELLIOT, of Braintree, Essex, have just issued a new catalogue describing brazing lamps, rim punchers, motor jacks, together with many other new tools suitable for motor-car and cycle repairers.

THE Automobile Components, Limited, have this week supplied to the North-Eastern Railway Company an "Automotor" 100-h.p. four-cylinder petrol motor, of which an illustration is given herewith. It is the last of an order for six engines, five of which were delivered some time ago, and are doing satisfactory work. The dimensions of the motor are as under:—Height 4 feet, length 4 ft. 10 in., depth 1 ft. 11 in. Bore of cylinders, 100 millimetres, and length of stroke 260 millimetres. The mixture is supplied by a special Longuemare carburettor. The speed of the motor ranges from 200 to 600 revolutions per minute. At 350 revolutions 100-h.p. is developed, while at 600 revolutions the engine is said to give off nearly 200 brake h.p.

MR. H. F. FRIEDERICH, the chief engineer of the Corporation Electricity Works, West Hartlepool, writes that they have excellent facilities for the charging of the batteries of electrical vehicles, the charge during the day being 3d., and at night 5d. per unit.

MR. HENRY F. JOEL has purchased the lease, plant and stock of the branch at 31, Wilson Street, London, E.C., from the firm of Messrs. Henry F. Joel and Co. and Thomas Potter and Sons, United, Limited. He purposes carrying on business as a dynamo, motor, and electric motor-car manufacturer and contractor at that address in his own name.

MESSRS. J. COCKSHOOT AND CO., LIMITED, have sent us copies of catalogues of the Stanley steam car and the Northern petrol automobiles. The latter is neatly got up and gives illustrations of the complete vehicle in several different positions. Both the Stanley and the Northern cars have already been described in the *Journal*.

FINE new premises are being opened by the Highgate Motor Company, of which Mr. J. Keele is manager, at 23, Grand Parade, Archway Road, Highgate. These are in addition to the present place in the Archway Road, and also a garage in the vicinity, where is storage room for from eighty to 100 cars. The Highgate Motor Company is making a special feature of Darracq cars.

THE Leicester Corporation have ordered a combined motor-fire tender and chemical fire engine from Mr. C. T. Crowden.

MR. H. WHITE, the first secretary to the American Embassy in London, is now among the motorists, having just ordered a 22-h.p. Daimler car.

THE electrical engineering department of the Speedwell Motor and Engineering Company, Limited, has been disposed of to Mr. A. E. Felgate, of Reading.

THE Locomobile Company of Great Britain, which, as already announced, is introducing the Waverley electrical cars, are arranging to equip a portion of their extensive premises at South Kensington as a charging station.

A FRENCH engineer has introduced a new idea with regard to the upkeep of motor-cars which is worth recording. For a monthly charge of £5 he undertakes to visit his clients once a week to keep their cars *au point*, this work to include the grinding of the valves, setting the ignition in order, overhauling the carburettor and the water circulation, adjusting the chains, bearings and change-gear, attending to the lubrication of the various parts, etc., but not the washing of the car. Special charges are of course made for any repairs or new parts that may be necessary.

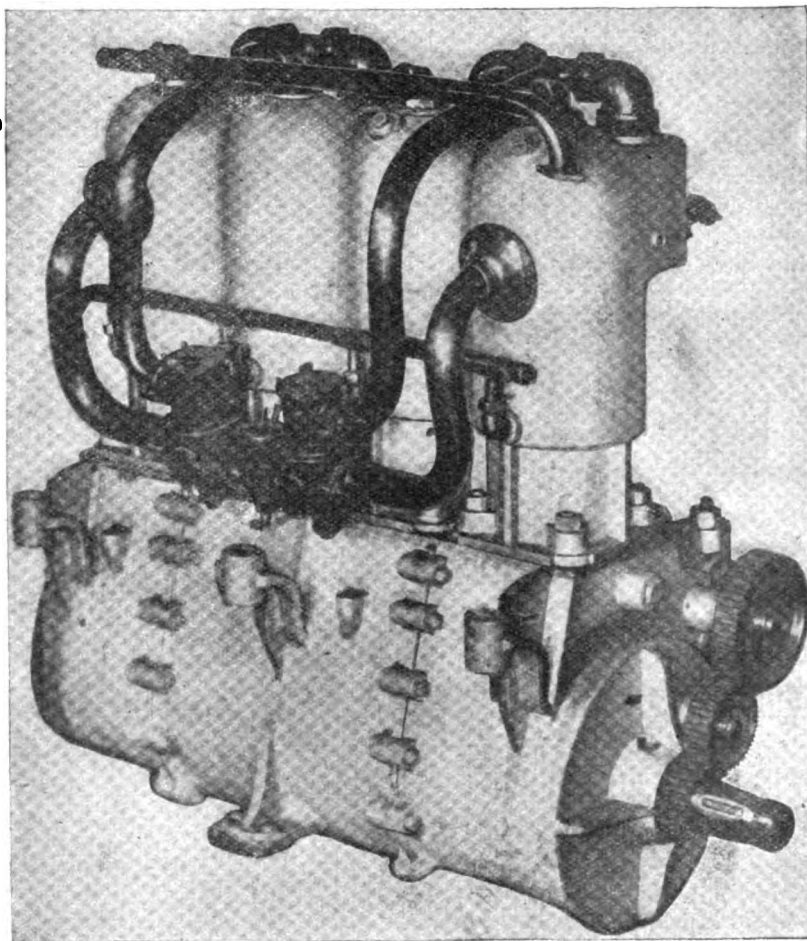
THERE was a large increase last year in the value of the motor-cars and parts exported from Belgium, the returns just issued showing a total of £58,596 as compared with £39,800 in 1901. The exports of motor-cycles and parts also underwent a large advance, attaining a total of £16,744 as contrasted with only £14,608 in the preceding twelve months.

MR. SOMERSET PLAYNE, of the Wycliff Motor-Car and Cycle Depot, Durban, recently made the first motor-car trip between that city and Maritzburg, a distance of about seventy-three miles. The road, with the exception of about five miles, is free from sand,

but the whole surface from Botha's Hill to within a few miles of Maritzburg is one mass of boulders and sluits, many of the latter being almost impassable. Mr. Playne, whose car is a 4½-h.p. Stirling, has come to the conclusion that, until the main road has been considerably overhauled and repaired, motorists would do well to give it a wide berth.

THE Standard Motor Company, Ltd., has been registered with a capital of £5,000 to carry on the business of manufacturers of and dealers in motors, motor-vehicles, etc. The first directors are Messrs. R. W. Maudslay and G. A. Maudslay, and the registered office is at 37, Earl Street, Coventry.

MR. LOUIS SINCLAIR, M.P., entered a meeting at Stratford the other day, having rushed down from the House of Commons on a motor-car. He had successfully eluded the members both of the Metropolitan and City constabulary, and he hoped the audience would wish him an equally successful return journey.



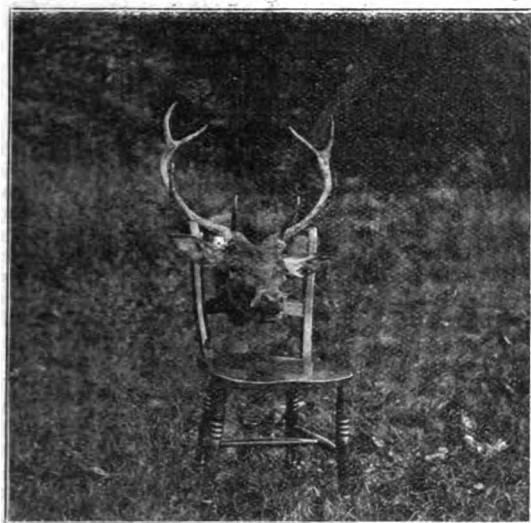
The "Automotor" 100-h.p. Petrol Motor.

CORRESPONDENCE.

MOTOR-CARS IN THE HUNTING FIELD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see in your last issue a photograph illustrating the use of motor-cars in connection with stag hunting. I may say that I had charge of a car during August, September and October of last year at a shooting lodge eighteen miles from Inverness. The vehicle was used a great deal for that particular class of work, mostly for conveying the heads into Inver-



ness to be mounted for ornamental purposes; the beasts often weighing 16 to 19 stones. I enclose you a photograph of one of the heads, the points of which reached from corner to corner of the tonneau; also a photograph of the car in its Highland home; the vehicle, which is an 8-h.p. De Dion, ran perfectly for the whole time with one exception, when a part of the water circulating pump wore out.—Yours faithfully,

ALFRED W. WASTNAGE.

CHAINS AND LIVE AXLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have just been reading your report of Mr. Sennett's recent paper to the members of the Automobile Club, and am somewhat surprised at his sweeping condemnation of chains. It would be interesting to hear the opinions on the subject of Messrs. Renold, Brampton, and Hill, our leading motor chain manufacturers, not to mention those of the builders of automobiles, who rightly, in my opinion, still adhere to side chains in preference to transmitting the power direct through a cardan shaft and bevel gear to a live axle. It cannot, of course, be denied that the adoption of live axles has made considerable progress, but at the same time it is hardly to be imagined that the Daimler and Wolseley Companies at home, and the Cannstatt-Daimler, Panhard, Mors, De Dietrich, and Rochet-Schneider concerns—to cite a few examples—on the Continent, still adhere to chain driving, without having fully weighed the *pros* and *cons* of the live axle.

Chains certainly are troublesome at times, but 90 per cent. of these troubles are due to want of attention on the part of the user, for it has yet to be properly recognised by many motorists that the efficient cleaning and lubrication of chains are just as important as any other part of the mechanism of motor-cars. Neglected chains may break or mount the sprockets, but by carrying spare links, or even a spare chain, the damage can easily be repaired on the roadside. I pity the poor motorist, however, who, when miles from anywhere, strips his bevel gear, a by no means unusual occurrence, as a visit to any motor repairer's establishment will prove. In mechanical engineering I believe that bevel gear is only adopted as a last resort, and I am one of those who consider bevel gear in motor-cars is but a temporary makeshift, and that it will ultimately be abandoned altogether. This is, however, another story; and I will conclude by venturing the opinion that the time when chains will be cast off permanently is not so near as Mr. Sennett would have us believe.—Yours truly,

JACK-IN-THE-BOX.

THE MOTOR-CYCLE AS A GUIDE TO CAR DRIVING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Motor-cycling is such a fascinating amusement, the wonder is so limited a number of the upper classes have as yet mastered an art as agreeable in practice as it is simple in acquirement. In olden days, when his "mount" broke down with the utmost regularity, the motorcyclist required to be born half an engineer and half an acrobat to assure his own stability and that of his machine. Fortunately, in this

new century, our manufacturers have given us greatly improved designs. Evolution at a rapid rate is remodelling everything in this best of all possible worlds. Ardent enthusiasts can ride from Cornwall to Caithness with little mechanical knowledge. Interchangeable box spanners, fitting every nut, a file, a pair of pliers, and a screwdriver meet all roadside requirements. Puncture troubles are becoming bugbears of the past, magneto ignition takes care of itself, while portable jacks, when the evening destination is attained, make cleaning a positive pleasure, and are invaluable next morning when testing the machine before starting.

If Englishmen intend to hold their own in the world's progress, they must become skilled in the best means of locomotion. All we ask of men of sense, whose trade, occupation, or it may be inclination, carry them away from home, is that they should give the motor-cycle a patient trial. In half an hour of honest endeavour they will have overcome most of the difficulties of early progression. The world is already converted to the motor-car; how much more difficult is that complicated conveyance to understand than the sweet simplicity of the merry motor-cycle. Clutch driving, associated with discordant notes which too frequently arise when a speed-change is misjudged, cannot be acquired at a moment's notice. As a car owner of more than four years' standing, the writer recommends all would-be automobilists to commence their career as motor-cycle riders. In due course, when the automobile arrives (English-made throughout) and is installed within the coach-house precincts, you will be familiar beforehand with most of its mechanism, and have considerable knowledge of its working capacities.—Yours truly,

EDWARD KENWARD.

THE GORDON BENNETT RACE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice that Mr. S. F. Edge has placed himself and his car at the disposal of the Automobile Club to go over the Gordon Bennett course and advise the Club on the subject. Whilst everyone must recognise Mr. Edge's public spirit, I fear it has not occurred to either that gentleman or the Races Committee of the Club that if he is going to take part in the race his frequent trials of the course may give rise in the minds of some competitors to the idea that thereby he might obtain unfair advantage over his foreign rivals.—Yours truly,

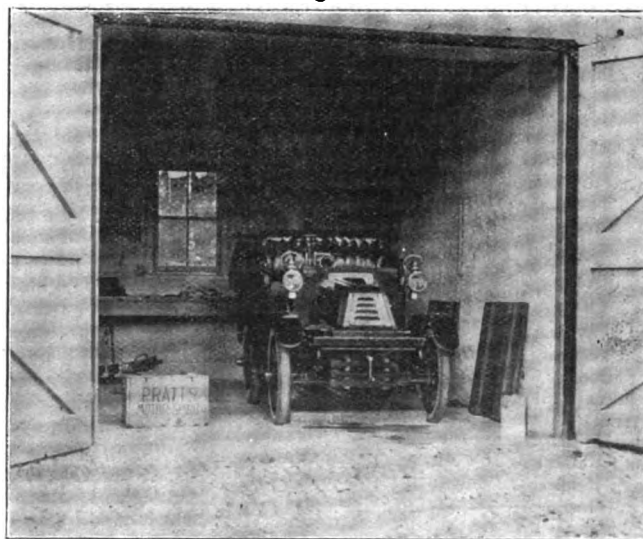
SPECTATOR.

THE SPARKING PLUG "DISCOVERY."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have noticed several remarks about the spark gap and fire, so thought I would see if I could fire petrol with it. I saturated a rag and placed it over the open spark, moved it about in all directions, but could not get it to fire. There is one thing I have noticed in connection with the spark gap: you cannot run your accumulators so low; this I think rather an advantage, as the accumulators cannot be run down, and by removing the gap a considerable amount of current can be obtained, perhaps enough to get you home. I certainly think the gap a great advantage.—Yours truly,

E. ESTCOURT.



AGScott Motor-Stable (see Mr. Wastnage's letter above.)

"H. A." asks for the best way of treating leaky valves.

"LITIOUS" writes:—"Has the A.C.G.B.I. given up the idea of holding club runs? The Sheffield, Nottingham, Oxford, and Yorkshire Clubs have already held their first turn-out of the 1903 season."

A LETTER awaits Dr. R. N. Pickering, who inquired recently with regard to the clutch in a De Dion car. It will be forwarded on receipt of his address, which has been mislaid.

MR. J. E. HUTTON writes:—"With reference to Dr. Arthur Fenning's letter in your last issue, pointing out the danger of the exterior sparking gap, I should like to say that all danger can be eliminated by using a sparking plug which is unaffected by sooty deposit, therefore requiring no external aid. The new Pognon sparking plug answers these requirements exactly, and although I have used them on cars immediately out of the works for testing purposes, where ordinary plugs invariably break down in the first half-hour, I have not had to take a single Pognon plug out."

MR. F. WELLINGTON writes:—I notice in your issue of the 28th ult. particulars of a small valveless motor which was shown at the last Paris Salon, made by an engineer named Gevey. It may be interesting to your readers to know that I made the same kind of motor in 1897 for a motor-bicycle; the engine is still in stock, and can be shown to you any time you like. Although I do not desire to claim the idea as my own, as it was used some time before 1897 for a gas engine, you will see it is by no means a new invention.

We shall be glad to have the address of Mr. Thomas Browning, the Kentish motorist who won a case in the law courts recently.

DEVELOPMENTS IN THE AUTOMOBILE:

(Concluded from page 17).

MAKERS have not given the pigmy electric installation entailed anything like adequate attention. In the first place the switches, the commutators, the contacts, the binding screw arrangements are too often of the commonest description, and the roughest workmanship, bringing about many *contre-temps* quite avoidable. Makers, moreover, seem to think that in no matter how slipshod a fashion the wiring is carried out, it will be equally efficacious. That no radical changes have been carried out upon the motor by no means proves that they ought not to have been, nor that considerable modification may not be observable in the immediate future. At first it was thought that the problem of production of an equilibrium motor, that is to say, one in which the explosions should be equally and oppositely equilibrated, merited very serious study. An equilibrium motor is such, in fact, only when it is working in a correctly normal and perfect manner; but if anything on the one side—be it but a trifling derangement of a valve—be abnormal, then the equilibrium immediately disappears. Such motors require a very heavy fly-wheel, seeing that the explosions only take place half the number per unit of time, and are intrinsically twice as violent. It is obvious that the whole of the transmission is subjected to much more serious torsional strains, and has in consequence to be made both stronger and heavier. The equilibration also holds good for certain speeds, and there appear to be "critical" speed at which it is most violent. Moreover, it almost invariably entails additional complication by reason of the necessity for supplementary gear. The last consideration tells in favour of multiple cylinders; the thing to be aimed at obviously is to impart to the propelling shaft the greatest possible number of impulses per unit of time, and these of the least possible violence for a given horsepower. Multiplication of the cylinders reduces their diameter, ensures ease in starting, and paves the way for more efficient silencing. From these points of view much might be expected from the eight-cylinder motors about to be tried upon the Continent. From the point of view of actual power obtained, however, I think it quite possible that these may not come up to expectation, because we must not lose sight of the fact that even a four-throw crank is an undesirable thing, and when you come to have a long line of eight cranks, loss of power due to torsional stress and twist is likely to arise. The multiple cylinder effect, however, is so desirable that I am sure we ought to be thankful to the house of Charron for having the enterprise to make the *essai*. A still more efficient arrangement would, doubtless, be the employment of four double-acting cylinders; the double-acting cylinder problem is a nut not yet cracked by evolution. Nothing can be more unscientific than the present system of mounting vertical cylinder motors upon the suspension springs of pleasure carriages, and, although they were placed there by the exigencies of rapid inspection and road repair, their *emplacement* does not represent a phase of evolution of a lasting nature.

The thing to consider is what is it we ought really to strive for? It is to produce an internal combustion motor giving off its power by means of impulses analogous to those of the steam engine. In other words, an internal combustion engine *per se* as opposed to an explosion engine. That is the first thing. Then the second thing is so to bring this internal combustion under control that we may increase or diminish the length of time during which it shall act for each stroke—in other words, to control the power of our motor by the length of combustion and subsequent expansion of the gases within the cylinder in a manner very analogous to the automatic varying cut-off of a good steam engine. Nothing can be more unscientific than the present system of mixing the fuel with its oxygen before admission to the motor, nor the derivation of its power by means of combustion so rapid that it may well be termed an explosion. What is wanted in place of it is a means of sustaining that combustion and of passing fuel into the cylinders in exact accordance with the power required *pro tem*. By this means we should obtain a motor embodying that valuable attribute of the steam engine often spoken of as the "great elasticity" of its power. A motor, moreover, of far greater efficiency, both theoretical and practical, and of extraordinary simplicity, even when compared with our old and

trusted servant the steam engine, if we take, as we must take, the engine and boiler together. Such a motor would at the same time solve the change-speed problem, its range of power would quite equal the steam engine, for from the same motor we should have moderate power with very great efficiency, and great power—when required—with moderate efficiency.

With regard to the immediate future, one would expect to see improvements in the direction of running motors with hotter cylinders—which the introduction of thin steel cylinders will enable to be done—a greater degree of expansion, enabling silencing to be more effectively dealt with; the use of higher initial compression enabling automatic ignition to be made use of, and with it a great advance in simplicity.

THE OWNERSHIP OF A MOTOR-CAR.

ERNEST JARDINE, motor and cycle manufacturer, of Nottingham, has brought an action at the Nottingham Assizes, against Arthur Collins, motor repairer, of 128, Manvers Street, Nottingham, to recover possession of a motor-car.

Mr. Stevenson said plaintiff lent out a car on the hire purchase system to Mr. Allen, who was to pay a sum of £314 by instalments, and the motor was to remain the property of Mr. Jardine until the instalments had been completed. Mr. Allen paid a sum of £50, and further sums by instalments. Ultimately, however, he made default in payments, and Mr. Jardine was entitled to have his motor back again. The car needed repair, and was sent to the defendant, who did the necessary work. The car was sent back to Mr. Allen with a bill for £16 3s. 5d., who disputed payment, as he thought the charge was too much. After using the car for some time he then sent it back to Mr. Jardine for repair. Mr. Jardine, having repaired the car, rather demurred at letting Allen have it again, but ultimately he did so. Allen had in his service as driver a man named Collins, who did repairs. On November 22nd Allen discharged Collins (who was a brother of the Collins who had previously repaired the motor), and on the morning of December 2nd the latter went to Allen's premises, fetched the car, and took it to his brother. The defendant refused to let the car go out of his possession until he was paid the £16 3s. 5d. owed him by Allen. When Mr. Jardine asked for the car he set up the same claim against him. Twenty pounds had been paid into court in order to regain possession of the car subject to jurisdiction. After hearing counsel for the defendant, the learned Judge said there seemed to be no case for the defence to go to a jury, and entered judgment for plaintiff with costs.

MOTOR-CAR LITIGATION.

In the Chancery Division Mr. Justice Farwell has heard the case of Hodgson v. the Speedwell Motor and Engineering Company, Ltd., which was a motion by the defendants to strike out the statement of claim on the ground that it disclosed no cause of action. His Lordship found there was a case to be reasonably argued, and he refused the motion, with costs.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Bristol	*G. Smith, Bristol	20 m. p. h.	20s., etc.
Kingston	C. Swinton, Victoria St., S.W.	—	£5, etc.
"	A. Goodwin, Chiswick	20 m. p. h.	£5.
Epsom	T. Hersey, Epsom	—	£1, etc.
Winchester ...	W. S. Weller, Norwood	24 m. p. h.	£5, etc.
"	R. Hargraves, Reading	25 m. p. h.	£10, etc.
South Shields	*E. Wilkinson, South Shields	—	10s., etc.
Accrington ...	F. Karno	—	£5, etc.

Where no alleged speed is given it is understood to be above the legal limit.

*Motor-Cycle Cases.

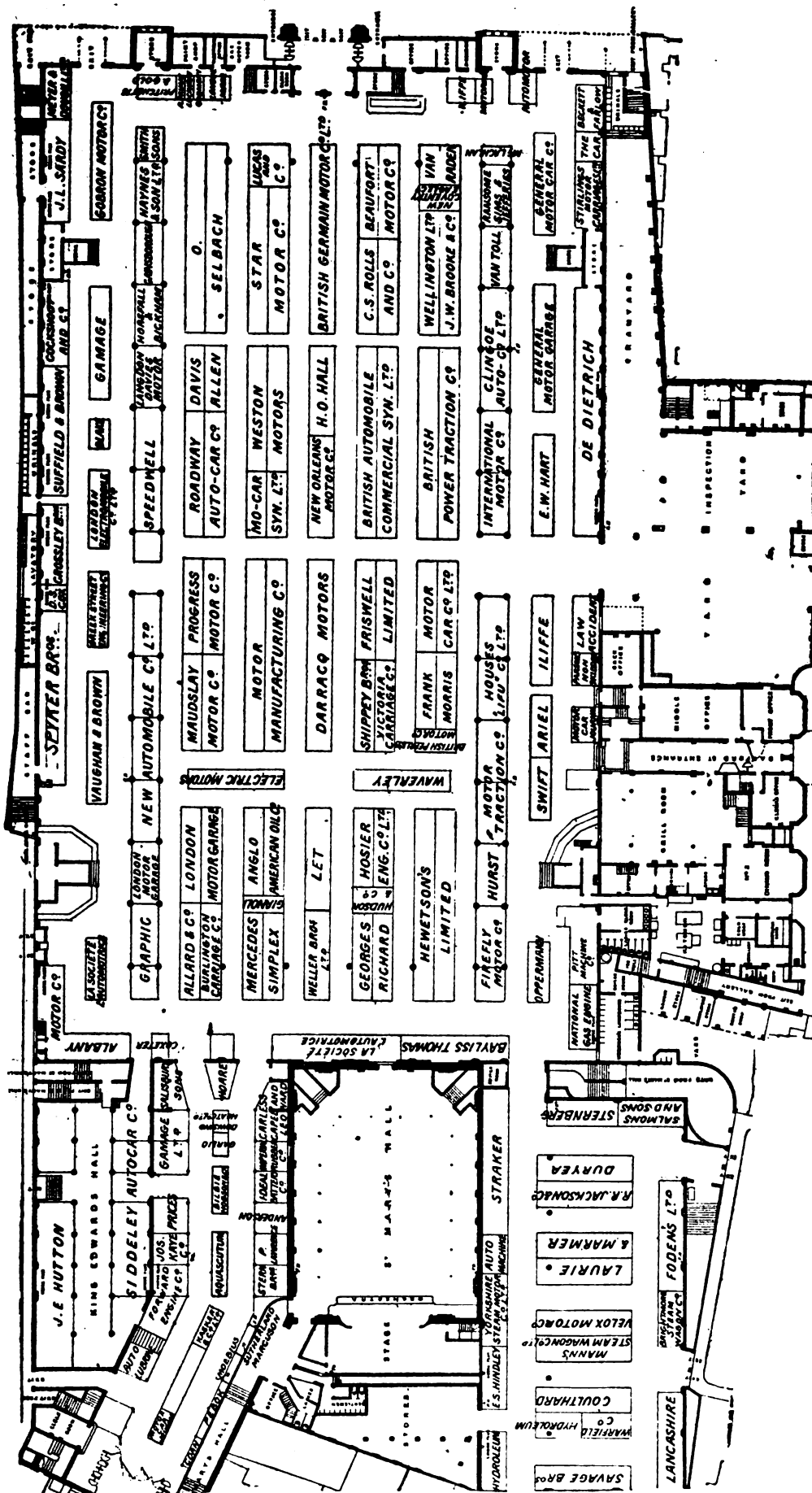
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* From a paper read before the Automobile Club on February 27th, by Mr. A. R. Bennett.

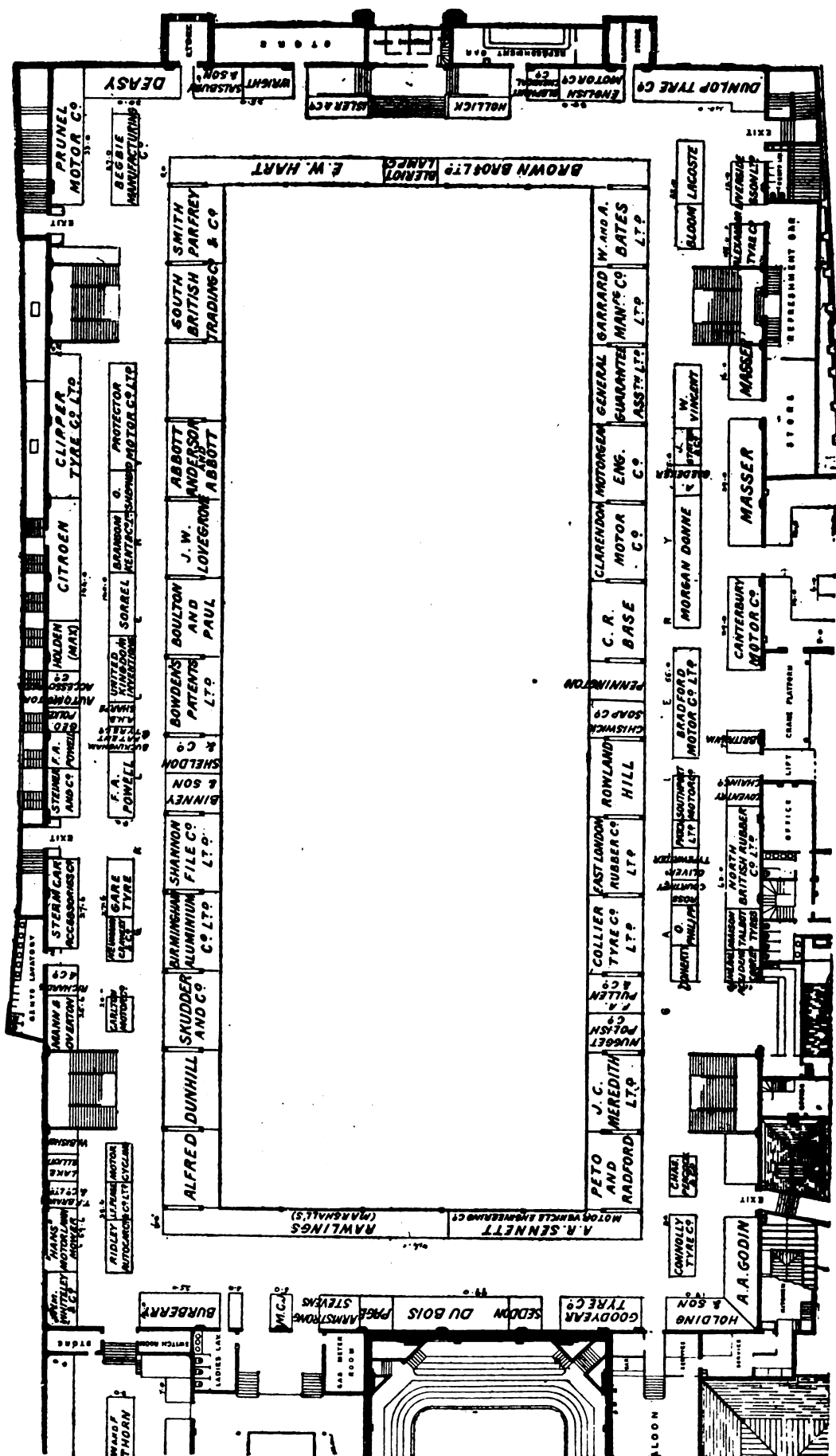
Cordingley's Automobile Exhibition.

MARCH 21ST TO 28TH, 1903.



PLAN OF GROUND FLOOR.
(FOR PLAN OF GALLERY SEE NEXT PAGE.)

MARCH 21ST TO 28TH, 1903.



PLAN OF GALLERY.

THE Motor-Car Journal.

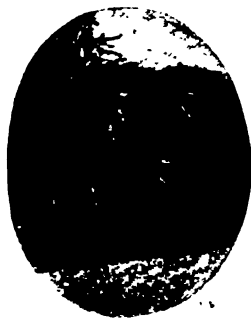
VOL. V.]

LONDON, SATURDAY, MARCH 21, 1903.

[No. 211.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



stretch between Athy and Old Kilcullen will have the opportunity of seeing each car pass twice in each circuit, so that with a dozen cars competing there should be ninety-six opportunities of seeing a racing vehicle. And such a succession of incidents will give ample excitement during the eight hours that the race will be in progress.

Competitors' Colours.

England, emerald green; Germany, white; America, red; and France, blue. It is easy to see that the selection of green is a compliment to Ireland, while the adoption of red, white, and blue by the other three competitors should be of good omen for another British triumph.

The Lords Agree.

IN the House of Lords, on Monday, the Marquis of Londonderry moved the second reading of the Light Locomotives (Ireland) Bill, which has already passed through the House of Commons. He explained that the measure was intended to permit of the Gordon Bennett Automobile Race taking place in Ireland. The Bill, if passed, would be of enormous benefit to Ireland, as the race would attract people from many parts of the world. Earl Spencer supported the measure, remarking that it was a new sensation to have a Bill on which all parties in both Houses were agreed. The Bill was then read a second time, so that only formal matters have now to be complied with to secure the legalising of the forthcoming race.

The Irish Automobile Fortnight.

ON the assumption that the race for the Gordon Bennett Cup will be run on Thursday, July 2nd, the suggested programme is as follows:—July 1st: Exhibition of the Competing Cars at Earlsfort Rink, Dublin. 2nd: The Gordon Bennett Race. 3rd: Gymkhana at the Phoenix Park, Dublin. 4th: Speed Trials in the Phoenix Park, Dublin. 6th: Tour to Newcastle and Belfast. 7th: Four-mile Time Test at Newcastle; Hill-climbing Trial for the Henry Edmunds Trophy. 8th: Return to Dublin. 9th: Start for

Cork (156 miles). 10th: Arrival at Cork; Eliminating Race for Motor-boats at Queenstown, in the morning; Speed or Hill-climbing Trial at Cork in the afternoon. 11th: Motor-boat Race for the Alfred Harmsworth Cup at Queenstown. 13th: Start of tour through the South. 14th: Arrival at Killarney. July 15th: Hill-climbing Trial on the Killorglin-Tralee Road for the County of Kerry Cup, and termination of the official tour.

The Exhibition.

TO-DAY (Saturday) the great Motor-Car Exhibition opens at the Agricultural Hall, London, and scarcely a motorist within a reasonable radius of the Metropolis will omit taking a trip to Islington on one of the days of next week. From a distance, too, will come many enthusiasts, while the new interest given to automobilism in Ireland will result in a strong contingent of visitors from the Emerald Isle. Several Continental leaders of automobilism have expressed their intention of being present, and doubtless a good many designers of world-wide reputation will take the opportunity of seeing what English firms are doing.

The Club Day.

AS generally known, the Exhibit will be open from 10 a.m. to 10 p.m., the admission being oneshilling, except on Wednesday, the 25th, when, as was the case last year, the charge for entry will be half a crown. Many Society leaders and members of both Houses of Parliament will be present on that day, and everything bids fair for an advance on last year's success.

Early Preparations.

DURING the last few days the quiet little Barford Street, Islington, has been a scene of animation, and the preparations for the great Show opened to-day at the Agricultural Hall, have kept the neighbourhood lively and busy. One characteristic feature of the Agricultural Hall Shows has always been the celerity with which stands have been occupied, and only a very few minor touches will be required on a few of the displays during the early hours of Saturday. Some idea of the extent of the Exhibition may be obtained from the fact that all the electric current obtainable from the plant at the Hall and also at the generating station of the Borough Council has been booked, and additional engines and dynamos have had to be fixed to meet the demands of exhibitors. This is the first time in the history of the Hall that such an event has occurred, and it is a testimony to the energy with which the trade has interested itself in the great Show that this extra expense has been rendered necessary.

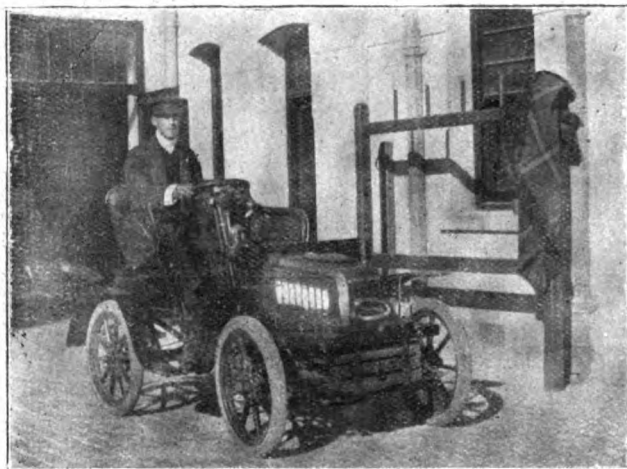
Some Features.

AMONG the vehicles shown, public curiosity is being excited by the presence of the Hon. C. S. Rolls' racing car which recently established a record at Welbeck, while the interest of the trade has been whetted by the announcement that the Star car which is to take part in the eliminating contest in connection with the Gordon Bennett race, will be on

view. The fact that this is the first of the vehicles entered for the International event to be shown in public, lends additional interest to the stand whereon it is shown.

The Scottish Club.

THE annual general meeting of the Western Section of the Scottish Automobile Club was held in Glasgow on the 11th inst., Mr. John Adam, Chairman of Section, presiding. The annual reports and accounts were unanimously adopted, and the membership of the Section, exclusive of honorary vice-presidents of the Club territorially attached to the Section, reported at 127. The Lord Provost of Glasgow was re-elected Honorary President of the Section. Messrs. H. M. Napier, W. H. Kingsbury, and James Burns, with the Chairman and Secretary *ex officio*, were elected representatives to the General Council of the S.A.C. Messrs. James R. Nisbet and Thomas Syminton were elected representatives to the Council of the A.C.G.B.I., and Messrs. James R. Nisbet and Robert J. Smith appointed to the Council of the Motor Union. On the motion of Professor Galt the Committee and office-bearers were cordially thanked for their services during the past year. At a meeting of the reconstituted Committee, held after the annual meeting, Mr. John Adam was re-elected Chairman and Mr. R. J. Smith, 59, St. Vincent Street, Glasgow, Secretary of the Section.



Mr. J. W. Courtis, the Winner of the South African Small Car Pursuit Race, on his 6-h.p. Baby Peugeot.

London Traffic.

ACCORDING to Colonel Yorke, the Chief Inspector of Railways to the Board of Trade, the American city of Boston can claim the premier position in regard to the handling of street traffic. He rightly points to the heavy van traffic as causing the congestion found in Metropolitan thoroughfares. There are no alternative routes by which to separate the slow and fast vehicles, but the introduction of automobiles would make traffic fast and lessen it also. They occupy small space, and are easily steered when not bigger than a 'bus. Colonel Yorke thus emphasizes the value of the motor-car, and has established the right of its advocates to be heard by the Royal Commission now sitting to inquire into the conditions of London traffic.

Automobile Education.

Few cathedral cities have shown the interest in automobilism that has been evidenced at Exeter, where the local Chamber of Commerce has been making special inquiries into the details of the industry. Sir Edgar Vincent, M.P., presided at the annual meeting of the Chamber the other day, and said one interesting feature of the year's work was the action which had been taken locally regarding the possibility of starting new industries. Attention was devoted to establishing a motor

car factory in the city. For his own part, although the result of the inquiry which was made led to no immediate practical result, he believed the subject deserved to be kept constantly before their minds. He was absolutely convinced that the motor industry had come to stay, and that within the next ten or twenty years a very large portion of the horse-drawn traffic would be superseded by mechanical traffic. Outside the question of construction, there was another field where the new industry offered considerable opportunities for energetic men. He alluded to the opening which there undoubtedly was at the present time for mechanically trained men to drive cars. He did not know what was the precise rate of wage gained in Exeter, but a driver of a motor-car of moderate accomplishments and knowledge could count upon £2 a week, and a good many up to £3 and £4. That was an opening for bright lads who wanted to make their way in the world, and he suggested, in connection with a commercial scheme of education, that it should examine whether it was not possible to turn out from Exeter a certain number of those candidates.

Motor-Car Imports and Exports.

ALTHOUGH the large totals recorded in January last have not been maintained, the returns now available relating to the British imports and exports of motor-cars and cycles during February last show an increase, as compared with the same month of last year, both as regards the imports and exports. To deal first with the imports, no less than 300 cars and cycles were imported into this country last month, the value of the same being returned at £82,542. The value of the "parts thereof" is given as £12,193, so that we get a combined total of £94,735, as compared with £167,112 in January last and £52,682 (representing 213 cars) in February, 1902. Some of the imports were only of a temporary character, being re-shipped to foreign destinations. Thus last month the re-shipments comprised twelve vehicles, amounting in value to £5,937, and £717 of parts, bringing down the net imports in February to £88,081, as against only £48,564 in the same month a year ago. As regards the exports of automobiles of home manufacture, the shipments during the past month amounted to fifty-three vehicles of a value of £24,205. Of parts, the exports attained a value of £2,024, making a combined total for February of £26,229, as compared with £16,876 in January last, and £6,569 (representing twenty vehicles) in February, 1902.

Motor-Cars at the Delhi Durbar.

ONE of the first serious attempts to introduce motor-cars to the Indian public may be said to have been embodied in the "Motor-Car Depot" established by Messrs. Turner, Hoare and Company, of Bombay, at the Delhi Durbar. Judging from the thousands of people who visited the temporary structure in which the display was made, the advent of the automobile into India caused an immense amount of curiosity, if not interest. The great question which seems to be exercising the mind of the would-be motorist in India is, what should be his source of power? Is the car to be propelled by steam, electricity, or oil? And if the latter, is it to be petroleum or petroleum spirit? In the exhibition at Delhi, above referred to, electric cars were absent, but steam and petrol cars were shown, the latter predominating. There were, moreover, a number of "Locomobiles" to be seen, all of which appeared most satisfactory, and we understand that these were introduced by Messrs. Shaw, Wallace and Company, of Calcutta. For use in India they are fitted with kerosene burners. The Maharajah of Rewa has a Gardner-Serpollet steam car; H.H. the Maharajah of Ajodhya has also selected a steam car; the latter is of English construction and is fitted with a "Lifu" burner. The chief difficulty in the case of petrol cars appears to be the importation and transport of the necessary spirit to work them. The Indian Petroleum Act was obviously drafted at a time when motor-cars in their modern development were not thought of, but even this is no excuse for designating every

inflammable liquid as "Dangerous." Unfortunately, the Government have even gone further than this, and in dealing with the transport of petrol or naphtha over railways, they classify it as an explosive. It is surely time that these rules should be entirely revised. With careful but reasonable restrictions, the importation, transport, and storage of petroleum spirit could be regulated as easily as paraffin. The assertions which are made as to the impossibility of the use of petroleum spirit in India owing to the heat are, remarks the "Indian and Eastern Engineer," based on simple ignorance. "Petroleum spirit is used in countries as hot as India, and it is actually produced both in Assam and Burma. We know of some launches which have been running in this country for some years on petroleum spirit, where the temperature frequently exceeds 100 degrees in the shade, and there has been no difficulty of any kind."

The Eastern Highways.

WHAT a pity the means of access to the beautiful sylvan glades of Epping Forest are so abominable—the only adequate word—from whatever part of the City or West End they are approached. Going towards Woodford by either the Forest Gate or Leytonstone routes, the old Mile End Road with its frightful paving and congested traffic has to be passed, while the more northern highway, the Lea Bridge Road, is equally distressing to motorists. This road turns off at right angles from the Lower Clapton Road, and is the main artery to Walthamstow, Leyton, and Epping Forest, and thence further into Essex. A single line of indifferently kept tramlines passes up its centre. The macadam strips by the side of the tramway track are always in a very bad condition. It is a road that ought to be widened ere both sides are built upon, and those motorists who are interested in the suggestions of Mr. Jeffreys, at the Automobile Club, last week, might well urge such a course upon the local authorities ere it is too late—or, rather, too expensive.

Motor Buses on the Coast.

At the last meeting of the Hove Town Council, Alderman Bulmer pointed out that the local omnibus company was licensed to run motor-omnibuses, but had not yet done so. He asked if they did not put them on the road by June would the Town Council license anyone else to do so, to which several members replied with a vigorous "Yes." In closing the discussion, Councillor Leeney said the omnibus company had had sanction to run motor-omnibuses for some time past, and he thought the reason why none had been put on the roads was very well known; it was the impossibility of getting a reliable motor-bus to carry anything like a fair number of passengers at a reasonable price. But, all the same, he certainly hoped they would soon see their way to provide something of the kind, in which they may be materially assisted by offers of help from manufacturers.

Oil as a Fuel.

PROFESSOR VIVIAN B. LEWES has just delivered a lecture on this subject at the Petroleum Institute, the Principal (Dr. P. Dvorkovitz) presiding. The Professor pointed out that many of the uses, and most of the dangers, of mineral oil are due to the more volatile portions, which, having a flash point below 73 deg. Fahr., are ineligible for use as ordinary lamp oils; but, owing to their extreme volatility, are specially adapted for generating combustible vapours, which, in admixture with a due proportion of air, give highly explosive mixtures, which are now utilised in many forms of motor, and which also have given rise to highly disastrous results when accidentally formed and ignited. Professor Lewes also referred to the devices for utilising mixtures of petroleum spirit and air in place of coal gas and air; but the danger and many accidents that arose from the use of petroleum spirit led to attempts being made to utilise ordinary paraffins of high flash point.

Agriculturists and Motor-cars.

MR. RIDER HAGGARD's references to motor-cars at the meeting of the Associated Chambers of Commerce, mentioned recently, do not seem to have wholly carried conviction to the minds of his hearers. His idea was that as much as 100 lbs. could be carried by the agricultural post, but they could not expect parcels to be posted and delivered under the same conditions as a letter posted at, say Wick, for Land's End. It should be a branch of their ordinary postal service, and he contended that as much as 100 lbs. should be carried. The goods should be collected by means of motor-cars once or twice a week, and the whole thing should be combined with a system of "pay on delivery." Mr. Jasper Moore, M.P., suggested that Mr. Rider Haggard should form a company, and experiment as to whether the running of motor-cars on the lines he had proposed would have beneficial results. In reply Mr. Haggard said he had neither the means nor tastes to allow him to fall in with the suggestion as to forming a company. Although we do not expect much practical good will result, the discussion of the subject will prove useful in popularising the automobile among the agricultural community.



A Heavy Load on one of the Societe Nanceennes Petrol Lorries.

White v. Black.

ARE the spirits entering the motor business? This is a question suggested by a letter received by the Motor Manufacturing Company, Limited, bearing the Fulham postmark, as follows:—"At the request of your guides we write to ask you not to use or make black goods but those of curative colours. Black came into the world through evil agency, and is against God's divine laws; your guides earnestly pray that you will help us in this important matter.—Yours faithfully, Snowdrop." Probably Snowdrop has been consulting a planchette, and had she—or is it "he"—given her real name and address other manufacturers might have applied for hints as to the future. When will the speed limit be removed and who will win the Gordon Bennett race are two questions upon which information would be welcomed—prior to both events. Can "Snowdrop" oblige?

A Ballot.

"THOSE who attended the meeting of the Society of Motor Manufacturers on Monday at the Hotel Cecil," write the Duryea Company, "spent a very diverting, though certainly not an instructive afternoon. But the picture of all the leaders in the motor industry wrangling and squabbling over a matter concerning which there should be no dispute—to wit, a perfectly fair ballot for positions at a motor show—is not an

edifying one, and we can only conclude that the entire system adopted upon the occasion is wrong."

Visit to Sir J. H. A. Macdonald.

THE Eastern Section of the Scottish Automobile Club have had a run to Coll-Earn, Auchterarder, to pay a visit to the President of the Scottish Automobile Club, the Right Hon. Sir J. H. A. Macdonald, K.C.B., Lord Justice Clerk, and were there most hospitably entertained to luncheon. Owing probably to the very threatening-looking morning, and to the inconvenience of crossing the five miles of the stormy Forth by the Granton Ferry, few cars went direct from Edinburgh, though there was a fair muster of members from the surrounding country, north, east, and west. Unfortunately, the weather was not on its good behaviour. The members who took part in the run were:—Messrs. W. H. Cox (Snaigow, Dunkeld), 10-h.p. Wolseley; R. Douglas Creall (Edinburgh), 9-h.p. Napier; Drake (Edinburgh), 10-h.p. Stirling-Daimler; P. Drummond (Stirling), 3½-h.p. tricycle; C. J. Hoggan (St. Andrews), 8-h.p. Clement; Wm. Hunter (Edinburgh), 12-h.p. Gobron-Brillie; George Macmillan, Secretary Eastern Section, 7-h.p. Panhard; Thos. Sanderson (Edinburgh), Benz; and J. Stirling (Edinburgh), on a 15-h.p. double Stirling Phaeton. In the absence of the Lord Justice Clerk, who had to go to Dundee to hold a High Court of Justiciary, the company were received by his son, Mr. Norman D. Macdonald, Chairman of the Scottish Automobile Club. His Lordship drove in his Delahaye car from Auchterarder to Dundee, some thirty-seven miles, as being quicker and more convenient than going by train. He is the first judge who has arrived in a circuit town by motor-car. He returned to Auchterarder by the road again, arriving just after the Club had left, owing to the short days and bad state of the weather compelling an early start.

In Cape Town.

THE City Council of Cape Town has made new regulations with regard to automobiles, which are of special interest in view of the considerable number that are being sent out to the Cape. The speed within the area of the municipality is restricted to eight miles an hour, and cars must have two effective brakes able to act independently of each other. At night they must have a white light in front and a red light in the rear. Cars used for public and business service must have the name of the owner or owners, and the place of abode, painted in a conspicuous position on the side of the vehicle, and those employed for goods purposes are required to pay a registration fee of £5. The registration fee of passenger cars is £2 10s.

The 1904 Exhibition.

PLANS are ready for the 1904 Exhibition at the Agricultural Hall, London, which will be held from March 19th to 26th, and already firms are booking space. The anticipations of good business at the Show which opens to-day has led many to be anxious to obtain good positions for next year; and there is no doubt that the Ninth Annual Motor-Car Exhibition at the Agricultural Hall will prove a worthy successor to its predecessors.

The Motor Volunteer Corps.

THE Secretary for War has approved of the following special grant to the Volunteer motor corps. In lieu of all grants given to ordinary volunteer corps (a capitation grant of 40s. for each efficient officer and a capitation grant of 40s. for each efficient member) a capitation grant of 50s. for each proficient officer and sergeant; an allowance of 30s. a day, not exceeding ten days, for each day of attendance of any officer or volunteer on duty with his car, and, where fuel is not obtainable from the stores of the Army Service Corps, a further allowance of 30s. a day, which is also to cover wear and tear of machines.

An advance of three-fourths of the capitation grant will be made as members are enrolled to cover cost of uniform and initial expenses, the recovery being spread equally over the next three years.

Club Arrangements.

THE changes consequent on Mr. C. Johnson's retirement from the secretaryship of the Automobile Club have been considered by a sub-committee of the Club, and the results of their deliberations have just been announced. Mr. Julian Orde is to be the general secretary of the A.C.G.B.I., with Mr. Basil Joy as secretary of the Club trials and garage, and Mr. W. Rees Jeffreys as secretary for the legislative work of the Club. This sectioning of the work appears, in the judgment of the sub-committee, to be absolutely necessary in view of the great development that may be expected in the near future.

The Road Problem.

THE paper by Mr. Jeffreys on the Road Problem summarised on another page draws attention to a very pressing question. Some difficulties in connection with the proposed road were pointed out by Mr. Harold Sanderson; Sir John Thornycroft deprecated the presence of obstructions in the centres of streets; the Hon. Arthur Stanley, M.P., hoped the County Council and the City Corporation might be induced to enter into a joint arrangement; the Hon. J. Scott Montagu paid a high compliment to the author; Messrs. Worby Beaumont and Aveling expressed approval of the paper, and the Chairman, Colonel Crompton, hoped that motor-car builders would show their appreciation of the suggestions by giving attention to the construction of motor-wagons for goods and suitable vehicles for passenger services.

Latest About the Present Show.

AMONG the special attractions at the Motor-Car Exhibition on Club day will be an augmented band, and vocal, as well as instrumental, soloists. It will be remembered that *Le Passe Partout* left the Agricultural Hall nearly a year ago amidst the plaudits of the crowd, having occupied the position of honour during the previous week. How it failed to complete its tour of the world was told in the *Journal* on the 14th ult. Now it stands in the covered yard at the Barford Street entrance to the Motor-Car Exhibition—a dilapidated object with no cylinder head, the chains gone, the pneumatic tyres down, the front of the bonnet absent, and altogether a woeful picture of foiled ambition.

"MOTORS" Co. of the Quadrant, Richmond, have issued a list of privately owned cars that they have for sale.

ON Thursday next Professor Dalby will read a paper at the A.C.G.B.I. on "Vibration Problems in Engineering Science."

AT the monthly dinner of the London Chamber of Commerce on Wednesday, Messrs. S. Straker and C. Jarrott were among the speakers.

AMONG the latest entries in the Paris-Madrid race is one in the heavy car class by the Wolseley Co., and one in the voiturette class by the Eagle Engineering and Motor Co.

PRESSURE on our space has resulted in the omission of several advertisements this week, and firms wishing to ensure a position in the next issue of the *Journal* should send their announcements as early as possible—by Monday if possible.

AT the shareholders' meeting of Messrs. Vickers, Sons, and Maxim, Ltd., on Wednesday, Col. Vickers, who presided, stated that the sum invested in the Wolseley Tool and Motor-car Company gradually rose during the year till it reached, at December 31st, rather over £160,000. The results obtained and expected are such that it is proposed rather to increase than to diminish the amount employed there. The entire capital of the Wolseley Company is owned by Messrs. Vickers,

THE MORS 1903 CARS.

FOR the 1903 season the Mors Company are building three sizes of four-cylinder cars—11-h.p., 18-h.p., and 22-h.p. As the general arrangement of these cars is the same, the following description will apply to all, except where otherwise mentioned. The frame is built up of pressed steel. The front and rear crossbars and the front and rear bars supporting the

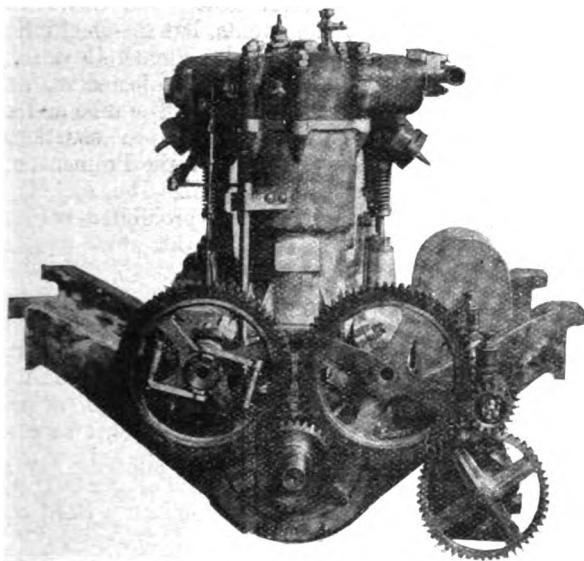


Fig. 1.—End View of Mors Engine.

gear box are also of pressed steel. This has permitted a variable section to be given to these pieces according to the stress at different points along their length. The front of the frame is narrowed, to allow of turning in a shorter radius than would otherwise be possible.

The motor (Figs. 1 and 2) is of the four-cylinder type, with mechanically-operated inlet valves. The intake and exhaust

honeycomb type, with a fan to induce a strong current of air through it. The water circulation is maintained by a gear-driven pump. The advantage is claimed for the honeycomb radiator that the motor may be run at slow speed for long periods without evaporating an appreciable amount of water. The trouble of renewing the water supply is therefore avoided. A single carburettor is used for all four cylinders, the pipe from it branching to each pair, and again branching to each cylinder. Special care

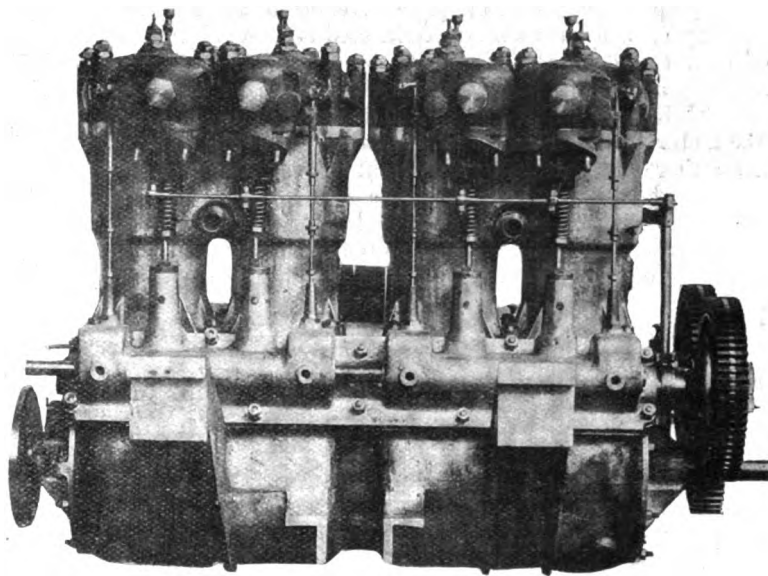


Fig. 2.—Side View of Mors Engine.

has been taken in constructing these pipes to equalise the freedom of passage of the explosive mixture to all four inlet valves. The carburettor is an improved form of float-feed, provided with a throttling device so arranged as to give a perfect "mixture" even when the engine is running at the slow speed of 300 revolutions per minute. The governor is adapted to act on the admission of gas, and in conjunction with it is a pedal by means of which the

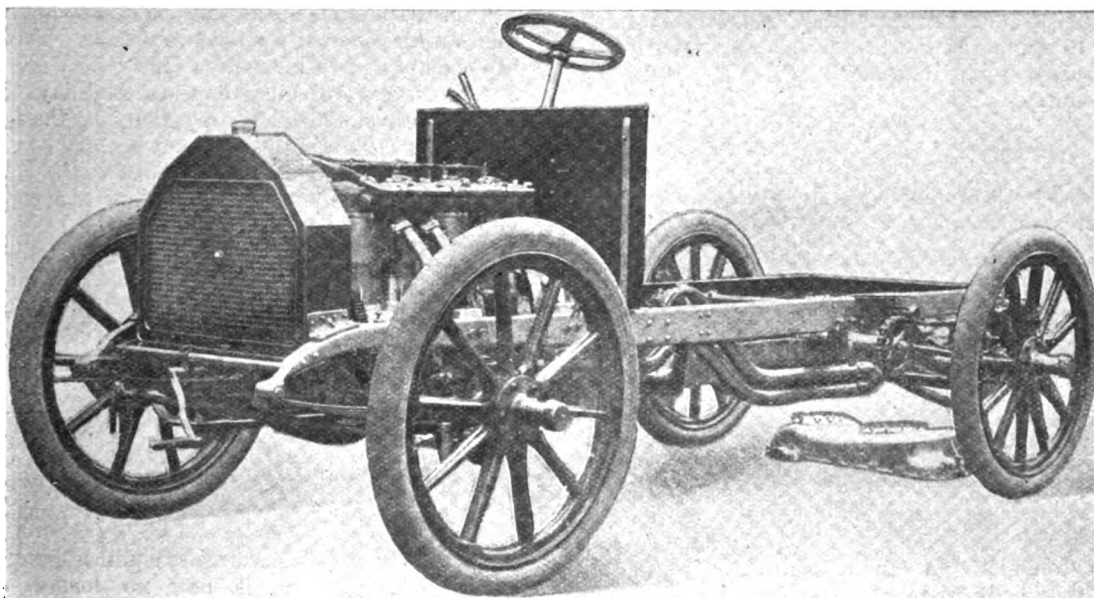


Fig. 3.—The Mors 18-h.p. Chassis.

valves, which are interchangeable, are located on opposite sides of the cylinders, each set having a separate cam shaft, driven from the crank shaft by spur gears. One peculiarity of construction is that each cylinder is cast separately with its water-jacketed head and valve chambers. The jackets for the cylinder walls, however, are made of aluminium, and are cast in pairs. The cylinders are fixed to the jackets by studs, and the jackets serve to hold them to the crank chamber. The water-cooler is of the

governor can be cut out and the engine "accelerated" as desired, as well as a hand lever working on a sector on the steering wheel, acting as a "moderator."

The ignition system is of the primary, or make and break type, the current being furnished by a rotary magneto driven by the engine by means of spur gear. The stationary insulated electrode passes through the cylinder head, and the movable electrode, which has a rocking motion, through the side wall of the

cylinder. This movable electrode is operated by a rod pushed by a cam on the inlet valve cam shaft.

Formerly the point of ignition in the Mors vehicles was invariable, but in the new models the driver can advance the ignition up to the most favourable point when the engine runs on the high gear at high speed. The variation in the point of ignition is obtained by the displacement of a movable part provided with a roller interposed between the igniter cam and the igniter rod. The displacement of this piece is effected through the intermediary of a lever which is connected to a small handle located on the steering wheel.

A new starting handle is now provided, and consists of a ratchet crank in front, which engages and disengages automatically with the motor shaft. This result is secured as follows: A pawl on the starting handle drops by its weight into a position of disengagement when the handle is in the vertical position, but engages in a notch on a ratchet wheel on the motor shaft when the handle is turned. As soon as the motor speed exceeds the speed with which the handle is turned the ratchet engagement is automatically released.

A new form of conical clutch designed to obviate all end pressure is employed between the motor and the gear box. The new Mors change speed gear, which has already been described in the *Journal*, is used in the new models. Four speeds and reverse motion are available, the drive on the high gear being direct.

Double-acting hand and foot brakes are provided. The hand brake is applied by pulling the lever towards the driver instead of pushing it forward, as is usual. The system of lubrication is based on a new principle. In most systems in which the lubricant is fed to the cylinders by pressure, this pressure is derived from the exhaust. It is claimed, however, that it is most difficult to obtain a constant pressure from this source and one capable of regulation. In the new Mors vehicles the pressure for feeding the lubricant is furnished by the cooling water, which forces the oil through sight feeds, according to the usual method of distribution. The advantage of regularity is claimed for this system, while in addition the oil is maintained at a constant temperature, which facilitates its distribution during cold weather. The road wheels are of equal size, while the wheel base of the 11-h.p. car is 7 ft. 10 in., and of the 18-h.p. car 8 ft. The Roadway Autocar Company, Limited, are the agents for the Mors vehicles in this country.

MOTOR-CAR speed trials are likely to take place at Southport during the summer season.

A MOTOR-CAR garage has been established at 69, Sidbury, Worcester, by Mr. G. Bladder.

THE Daimler Motor Company, Ltd., have commenced the issue of a bi-monthly list of carriages for sale.

MR. MCADAMS is opening a garage in the Avenue Road, West Hartlepool, where he is about to establish a motor-car agency.

IN Hood Street, Newcastle-on-Tyne, Messrs. Kerson and Company have opened a large showroom for the display and sale of motor-cars.

THE Finance Committee of the Wiltshire County Council is recommending that body to purchase a motor-car at a cost of not more than 300 guineas for the use of the county surveyor.

AUTOMOBILES DE LUXE, LIMITED, is the title of a company registered with a capital of £200 to manufacture, repair, buy, sell, let on hire, or otherwise deal in all kinds of motor-cars and accessories.

It is expected that the airship which Dr. Barton, of Beckenham, was commissioned to build for the War Office will be completed about the beginning of August, when experimental trips will be made in the presence of the Department's experts.

CONTINENTAL NOTES.

BY "AUTOMAN."

"FAUTE de grives, on mange des merles" is the motto of the Nice automobile meeting this year, as it was in 1902, when, at the last moment, the Italian Government put a veto on the Nice-Abazzia race, and raised a howl of indignation from manufacturers who had spent considerable sums of money in preparations. The Nice-Abazzia race was replaced by various minor events, but the chief interest of the meeting was gone. This year the French Government has for some unexplained reason vetoed a projected road race and authorised only the La Turbie hill-climb. The mile and kilometre competitions do not need a Governmental sanction, as they take place on the cement footpath of the Promenade des Anglais, which is under municipal control. The A.C.N. are, however, making an effort to replace the prohibited road race by something novel and interesting. In this they have succeeded, so far as concerns what they call the "*Concours au Bidon*," which may be freely translated into the "tin of petrol trial." This will take place on April 4th, when all the competing cars must put in an appearance on the Place d'Armes. The vehicles will then be weighed with passengers, tools, water, and oil; in fact, "with all aboard" with the exception of petrol. The petrol tanks and pipes and the carburettor must be empty. Each competitor will then be given a tin of petrol containing 100 grammes of petrol for every 50 kilos of the weight of his car, and with this petrol he must start off on a fixed course at any speed he likes, and go on until his petrol gives out. The car which accomplishes the greatest distance will be the winner.

ON March 30th and 31st, the A.C.N. will hold a reliability trial, and for this they have taken a leaf out of the book of the A.C.G.B.I. The trial is divided into two chief classes, namely, a competition for big touring cars and one for small touring cars. The former includes only cars with three or more cylinders and carrying at least four passengers comfortably; the latter is for cars with one or two cylinders, carrying two passengers. The competition lasts for two days in each case, but the route is different for the two classes. The big cars will have to accomplish 257 kilometres (160 miles) on the first day, and 300 kilometres (187 miles) on the second day. The small cars will have to travel 128 kilometres (79 miles) the first day, and 200 kilometres (125 miles) the second day. There will also be included two hill climbs. Speed will not count in the competition, but any car taking more than a minimum time to accomplish the distance will be disqualified. The start will be made at any time desired by a competitor between 5 a.m. and 9 a.m., the actual time of starting being placed on record. The hills on which the climbing trials will take place are, first, the ascension of the Col de Braus from the far side of the Pont de l'Escarène, to the sign-post on the top, which indicates the altitude; second, from Grasse to the Col de Saint-Vallier.

AMONGST the entries for the Nice-La Turbie hill-climb is the name of Mr. Alfred Harmsworth. It is said that he will drive a Mercedes car.

THE winter season has caused quite a slump in flying-machines, and the atmosphere is now no longer disturbed by the passage of the navigable balloon, which has been relegated to its winter quarters. The winter is, however, quickly passing away, and already there is a flutter in the aero world. M. Santos Dumont is busy building a big balloon shed, which will house at least three of his airships. He has purchased 12,000 square metres of land facing the Seine at Neuilly, just opposite the island of Puteaux, where the crack summer club for Parisian sportsmen has its home. A familiar sight in the Champs Elysees is the tiny little electric "runabout" of American make, standing outside the residence of M. Santos Dumont, and the dapper little

man in the smart little car, always alone, may be seen on his way to or from Neuilly two or three times a day.

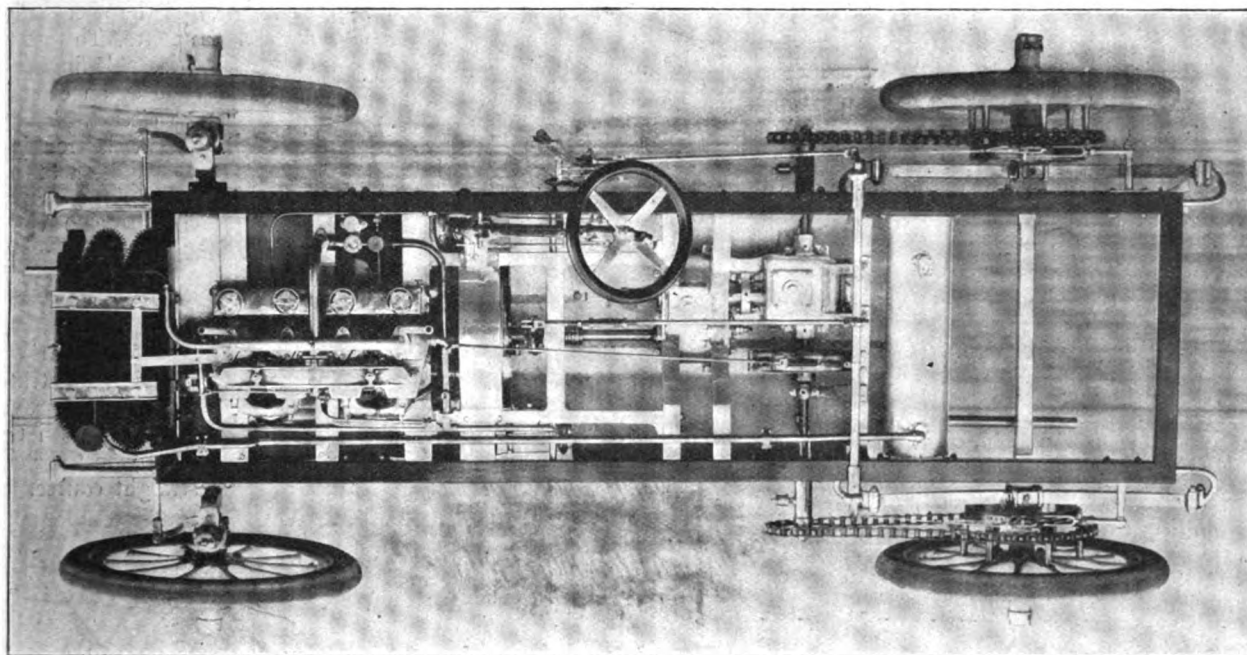
Of the brothers Lebaudy and their airship "Le Jaune" there is hardly any news except that one Don Simoni, an Italian, has attacked them for infringement of his patent, which seems to be for a navigable balloon of the form "trapeze," higher than it is wide, and dwindling almost to a point.

THE Hon. C. S. Rolls' 133½ kilometres an hour has particularly attracted attention in France to the shape of body required for high speeds. This question first came up in automobilism when Count Chasseloup-Laubat and Jenatzy were struggling for speed supremacy, and when a speed 25 per cent. lower than Rolls' record was an achievement which made the world wonder, accomplished as it was on a car with a cigar-shaped body. Serpollet made the next astonishing record on the Easter Egg, of which the peculiar shape is well known to everyone; and now a Mors car which seemed incapable of doing more than 120 kilometres has suddenly, with an inverted boat-shaped body, run up to 133½. It is, therefore, quite evident that the immediate attention of those who wish to score a win in this season's racing

countries the latest improvement. The Archduke Franz Salvator formally opened the Vienna Show, and the Kaiser William the Second visited in person the Berlin Show, expressing his admiration of the state of the industry, and chatting amicably with the representatives present on some of the stands.

A NOVEL and practical trial of the military utility of the steam tractor is about to be made by the Austrian War Office. On Sunday, M. Turgan, of the firm of Turgan-Foy, starts from Paris on one of his steam tractors accompanied by two mechanics. The body of the tractor has been fitted with a cover and with three beds for the three occupants, who will sleep aboard. There is also to be a load of four tons. The tractor is to travel from Paris to Vienna, but it is to be controlled and guided by telegrams from Vienna. Each day instructions will be wired to the driver to make for such and such a city, and so the War Office will see whether it could be relied on in time of war. The journey will take about a fortnight.

THE eight cylinder C.G.V. car was put through its trials at Longchamps last week, its flexibility in the way of speed, being fully demonstrated. The cylinders are 100 mm. diameter by



Plan of M.M.C. 20-h.p. Four-Cylinder Car.

will have to be paid to the question of the shape of the body, which can evidently make a difference of 10 per cent. in the speed of the car. There is also another question which has been raised and will be solved this season. Mors and Serpollet are both experimenting with wheels which have no openings between the spokes—plate wheels, in fact.

I HAD the good fortune to be a witness the other day of some remarkable experiments with a 40-h.p. motor on the testing bed, and supplied with the Eisemann ignition. The motor, with the throttle valve wide open, without touching any of the gas or air connections, but using only, to regulate the speed, the ignition, turned from 850 revolutions down to 112 with absolute regularity, and at the low speed the exhaust pipes were no hotter than at the high speed. There was not a single misfire, the exhaust giving a constant teuf, teuf, teuf, until the motor actually stopped. The experiment was repeated several times over with the same result.

THE motor-car exhibition season is at its height; both Berlin and Vienna are vying with London to show their respective

130 mm. stroke, the engine being nominally rated at 45-h.p. The speed can be regulated as desired between 125 and 1,500 revolutions per minute. The engine transmits its power direct to the differential countershaft and thence by chains. No mechanical change-gear is employed, the speed being entirely controlled by the throttle on the induction.

THE final act in the Criterium de Consommation took place on Monday, when what is known as the "Poule des Vainqueurs" was run off. The following are the results:—

VOITURETTES.

1. 6-h.p. De Dion covered 146.13 kil. on 5 litres of petrol.
2. 6-h.p. De Dion covered 122.3 kil. on 5 litres of petrol.

LIGHT CARS (400 to 650 kilogs.).

1. 6-h.p. Peugeot covered 118.05 kil. on 6 litres of petrol.
2. 6-h.p. Peugeot covered 112.31 kil. on 6 litres of petrol.

CARS from 650 to 1,000 kilogs.

1. 12-h.p. Chenard-Walcker covered 121.3 kil. on 7 litres of petrol.
2. 12-h.p. Chenard-Walcker covered 113.18 kil. on 7 litres of petrol.

HEAVY CARS.

1. 8-h.p. Mors covered 100 kil. on 8.4 litres of petrol.

INDUSTRIAL VEHICLES OVER 1 TON.

1. Peugeot carried 3,200 kil., a distance of 67.3 kil. on 15½ litres of petrol.

THE SIMPLEX VARIABLE-SPEED GEAR.

THE British Simplex Gear Company, of Kensington, W., are introducing a somewhat novel form of mechanism, devised by Mr. W. N. Dumaresq, which is intended to overcome the long-standing difficulty of gradually varying the speed while continuing to transmit power, between the extreme limits of 1 to 4 with the standard type of gear-box, or by the use of a third drum with a range of 1 to 20. Briefly the gear consists of two drums (Figs. 1 and 2), each having a series of small toothed pinions mounted on roller clutches and supported on small cross

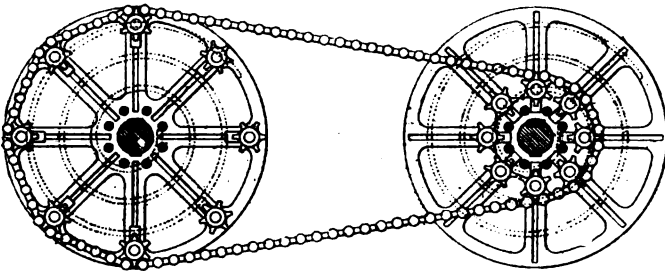


Fig. 1.

arms, which are capable of moving along radial slots cut in the sides of the drum. The effect of the roller clutch is to lock the pinion in the pulling direction of the chain and leave it free in the reverse direction. The radial movement of the arms and pinions is effected by rotating two scroll plates, carried on either side of the drum, the scroll plates having spiral threads on their faces, into which the ends of the small cross arms engage (see Fig. 1). The rotation of the scroll plates is effected as follows: On the axle shaft carrying the drum a long slot or groove is cut, in which slides a flat rack having teeth cut on it in a diagonal direction, which teeth engage in similar teeth cut in the bosses of the scroll plates, thus forming a modification of what is known as a "skew gear." It will readily be seen that as the rack is moved forward or backward the scroll plates are caused to rotate in the required direction. A similar rack is provided on each of the axles carrying drums, but has the teeth cut in the opposite direction, so that on the two racks being moved forward together, the arms on one drum expand and on the other drum contract.

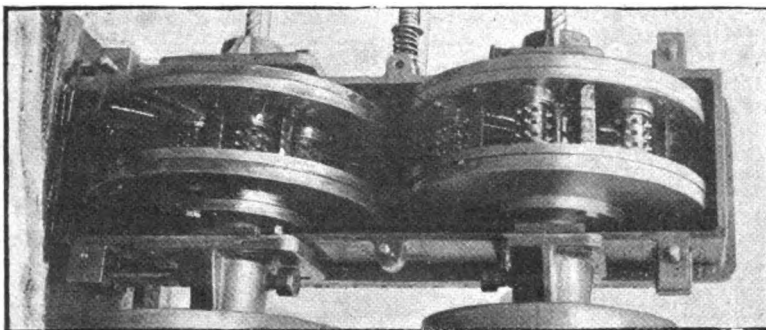


Fig. 2.

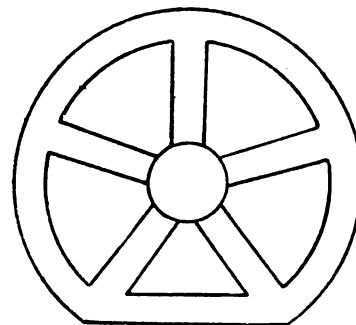
The actuating racks are moved by a yoke piece at one end, a screw passing through the same, causing the yoke piece (and racks) to travel forward or backward, such screw being actuated in any suitable manner from the motor. The transmitting chain engages in the outermost teeth of the pinions, which being then locked, rotate with the drums, but on the diameter of the drums being altered, each pinion rotates on its own axis sufficiently to allow of the chain adjusting itself. The gear runs practically noiselessly in oil, and is easily adjusted. Its immediate adaptation to motor-car work is intended, and we shall watch its progress with interest.

SOME USEFUL NOTES.

THE following directions for the charging of ignition accumulators are taken from the latest catalogue of Messrs. Peto and Radford, Limited:—An accumulator or storage battery can be re-charged from any source of electric current, such as a primary battery, a small dynamo, or current from the mains of a supply company, provided that the current is continuous and not alternating. (By continuous we mean flowing in one direction.) Whichever method is adopted in charging accumulators, the pressure and quantity of current must be suitably regulated according to the pressure of the charging current and the number of volts of the battery to be charged. The best method of charging is from a continuous-current house service. When this method is adopted the accumulator is inserted in the circuit of one of the lamps used in the house, so that the current flowing through the lamp also goes through the accumulator after leaving the lamp before it returns to the main. In this way, if the lamp does not exceed 32-c.p., a current of not more than one ampere will flow through the battery.

In connecting up a battery for charging, the terminal marked + must be connected to the + wire of the mains, and the terminal marked — to the — of the mains. If the accumulator is connected up the reverse way it will be spoilt. To test which main is positive + pole or negative — pole, pole-finding paper can be used, but we recommend the advice of an electrician being taken when first arranging a charging circuit. The vent plugs of accumulators, when charging, should be removed. When charging in series on 100 or 110 volt circuit, a 32-c.p. lamp in series with a 4 or 6 volt battery, will allow 1 ampere of current to pass through. If the circuit is 200 to 220 volts, use two 32-c.p. lamps to pass the same current. If the voltage of the accumulator to be charged is from 8 to 12 volts, the current passed in series with lamps as above will be slightly less.

ON one of the cars at the recent *Salon* in Paris we noticed the useful improvement in steering wheels illustrated in plan herewith. It will be seen at once that the improved form of wheel allows freer access to the driver's seat than the ordinary form; it has also the advantage, if set truly on the steering pillar, of assisting the driver in making a straight course. We cannot



remember on which particular car we saw the new wheel, but those motorists who like the idea should have no difficulty in getting one made.

AN American motorist, in the course of a letter to a transatlantic contemporary, makes some useful remarks on the question of cooling water circulation, from which we take the following:—"It is not advisable to place a tank of water to be cooled or to be kept cool on top of an engine cylinder. Put the tank at any other place, preferably a cool one, and take the water from the bottom of the tank first through the pump, which must be located so that the water in the tank will flow to it by gravity. The supply pipe of the pump should be large, at least double the size of the outlet. From the pump the water should be forced through the motor jacket, entering at the lowest and leaving at the highest point, then through the radiator and finally into the bottom of the tank. This will prevent any steam getting into the tank.

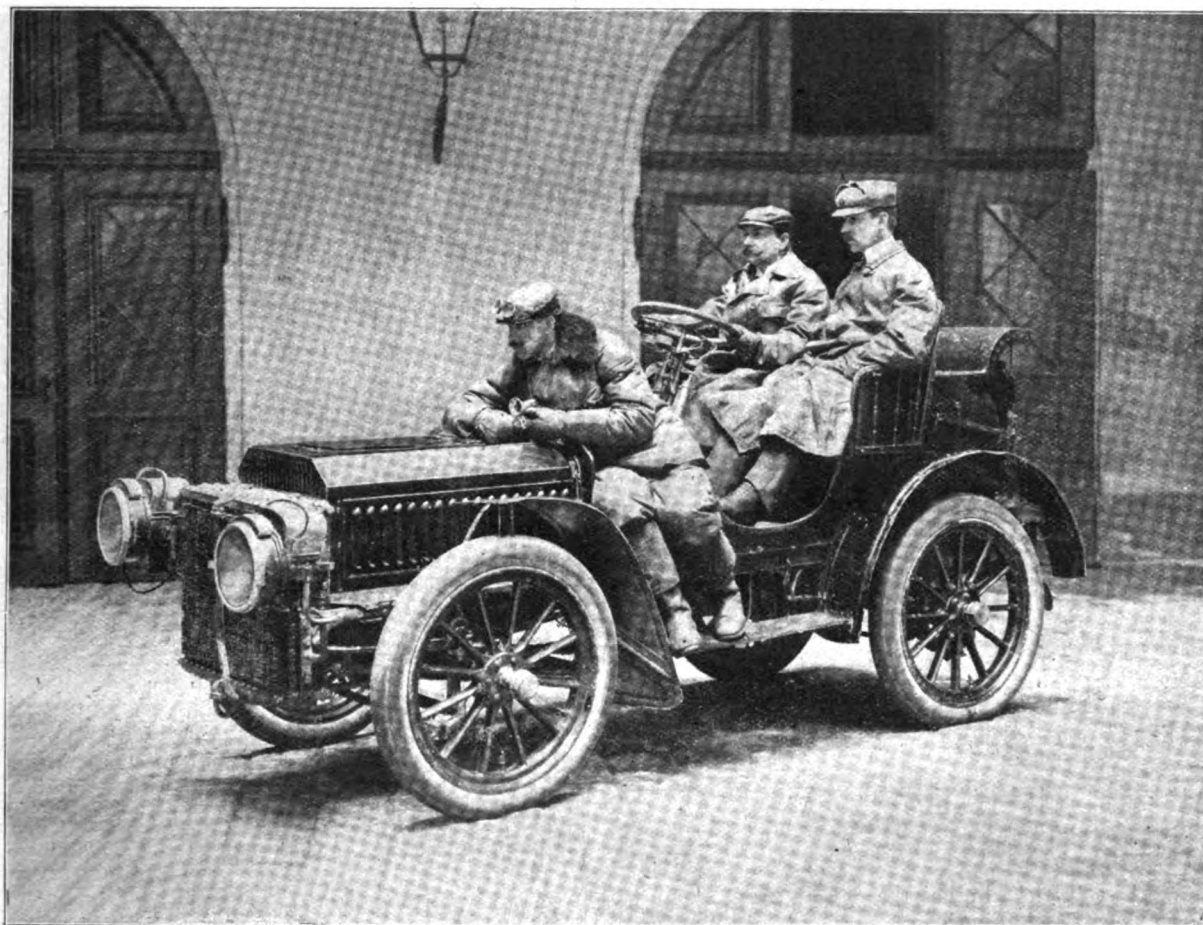
There are many who run the water directly from the motor into the tank. This leads the hot water, which is perhaps steaming, into the tank where the steam or vapour escapes through the overflow pipe, and causes it to be wasted rapidly. It should pass through the radiator before it goes into the tank, if it goes into the tank at all.

THE very best system I know of does not send any of the water in the circulating system through the tank at all. The latter is only used to supply what is wasted or leaks out of the circulating system, and to accomplish this the supply pipe leading from the tank to the circulating system just in front of the pump contains a check valve, this valve allowing water to pass into the circulating system but not to return to the tank, except through a safety or pressure valve located between the engine and tank. No water will pass through this safety valve except when steam is

vessel in which the sieve is located, from which it may be drawn by means of a cock.

IN those cars in which the "make and break" takes place between the platinum surfaces, these should always be kept scrupulously clean. After being in use some time (quite a short time if abnormally high voltage is used) small corrosion due to volatilisation and re-deposit of the metal, or small pits, will be seen on the surfaces. These should be removed with a fine file, but care must be taken that the newly-filed surfaces are strictly parallel to one another when in position, so that when they come into contact they are in accurate opposition.

SOMETIMES it happens that the piston-rings work round until the slits in them are opposite one another. When this occurs there is sudden loss of compression. The remedy consists in injecting a few drops of paraffin oil into the cylinder while the engine is



Count Siegfried Wimpfen, of Vienna, on his 1903 Gardner-Serpollet Steam Car.

[Allgemeine Automobil Zeitung.]

formed and the pressure of the circulating system is increased to a point determined by the adjustment of the safety valve. The water in the tank not being in communication with the circulating system, is cool, and at once condenses any steam passing into it, while new cold water flows from the tank into the circulating system and the normal condition is at once restored. I pump four gallons a minute through the engine and radiator."

OCCASIONALLY complaints reach us from motorists that the petrol they buy contains water, and that in consequence they experience trouble with their engines. It may be well, therefore, to call attention, remarks the "Horseless Age," to means for effectively separating water from the petrol on its way to the carburettor. It is known that fine mesh wire gauze will not let water pass, while it allows the petrol to flow through it freely. If, then, the petrol is caused to flow upward through a wire gauze sieve, the water will be separated from it and will collect at the bottom of the

running. One or more of the rings will work round after a time and compression will be restored.

WHEN an engine has been running for a short time after paraffin has been injected into the cylinder a reddish deposit will be found on the plug which may interfere with the firing. This is sometimes ascribed to over-lubrication, but is in reality due to the paraffin.

EVERY intending purchaser of a car should insist on the fitting of a petrol gauge if no provision is made for easily estimating the quantity present in the tank. How often have we seen drivers worried by the uncertainty of having sufficient petrol left to carry the car to its destination, and compelled to make some crude measurement by means of a stick thrust into the tank, at the imminent risk of contaminating the spirit, or driven to the necessity of making a rough and frequently inaccurate calculation based on mileage covered and average consumption of engine.

MOTOR-CYCLING NEWS.

THE motor-cycle match between Maurice Fournier and Charles Barden, which was postponed from the 7th inst. on account of the rain, was decided at Canning Town track on Thursday of last week. In the opening mile race (flying start), the Frenchman won by 100 yards in 1 min. 14 $\frac{3}{4}$ sec. The second race (standing start) gave him a still easier victory, for he finished more than half a lap in front of his opponent in 1 min. 40 $\frac{3}{4}$ sec. Barden showed rather better form in the third encounter, but was eventually beaten by 120 yards in 1 min. 18 $\frac{1}{2}$ sec. Fournier afterwards secured the six and seven miles motor-bicycle records, being in each instance two seconds inside the previous best, made by F. W. Chase.

ON Saturday, however, the latter rider retaliated on the same track, reeling off his first mile in 1 min. 27 2-5 secs., and improving at each succeeding mile; so much so, that at six miles (7 mins. 44 secs.) he was 9 secs. inside record, and at 7 miles (8 mins. 59 13-5 secs.) he was 13 secs. inside Fournier's time. From this point Chase established new figures up to ten miles, inclusive, and, completing the ride in splendid trim in 12 mins. 56 4-5 secs., he erased no less than 21 secs. from his own previous world's records, made at the Crystal Palace on



The Motor the Master of the Man.
[Das Schnauferl, Munich.]

September 24th last year. His machine was fitted with a M.M.C. 2 $\frac{1}{2}$ -h.p. engine made at the company's Coventry's works.

At the last meeting of the Sussex Centre of the National Cyclists' Union, held at Littlehampton, the secretary asked for some rules for motor-cycle racing in Sussex, for 1903. Last year there was much friction over the handicapping and the way the motor races were run. At present motor-cycle racing seemed to be in a chaotic state. It was unanimously agreed that in all races under N.C.U. rules in Sussex the ordinary cycling regulations should govern motor-cycle racing, and that in all motor-cycle races the handicapping be undertaken by the official handicappers.

A good deal of discussion is just now taking place anent the relative merits of surface and spray-type carburettors for motor-bicycles. Mr. J. Van Hooydonk considers that spray carburettors are added complications, and even were they to give 10 per cent. more power, it would be far better to make the motor of a size that would allow of the same power being obtained from a surface carburettor. He admits that "when running fast, at speed, the spray, when perfect, will get more power out of a given engine than the surface," but on the other hand he considers that "it is when the speed slows down, in hill climbing, that the spray of the size and type used on motor-bicycles no longer supplies the necessary gas to the motor, and there the

full head of gas, which is always present in a surface, allows more power to be obtained than would be the case were a spray used." The reason for this is, Mr. Hooydonk thinks, "that when running slow the suction or vacuum in the spray carburettor is so reduced that there is not sufficient to cause the carburettor to work under the conditions intended." Mr. E. Arnott, on the other hand, thinks that the complaint against the spray type is largely due to the use of badly-designed devices. While, as compared with these, a good surface carburettor is to be preferred. He himself favours a spray carburettor, so designed, that instead of choking the induction pipe the full quantity of gaseous mixture required by the engine is supplied at all speeds. The question is an interesting one, and if any amateur motor cyclists have considered the matter from the point of view of practical experience with both types we should be glad to have their opinions.

IN connection with this matter of carburettors, Mr. C. Sangster, of the Ariel Cycle Co., Ltd., writes: "In the early days of motor-cycles, when we made tricycles, we proved over and over again that the surface carburettor was superior to any spray carburettor which we could procure or design at that time; but it is possible that this may not be true now. At any rate, we are making experiments, and we will know for certain in a comparatively short time. We are convinced that, taken all round, the surface carburettor will give much better results in the hands of the every-day rider than any form of spray which is likely to be produced in the near future."

A LECTURE on motor-bicycles has been given by Mr. F. H. Wheeler, an engineering student, under the auspices of the Students' Engineering Society of University College, Liverpool. Professor Hele-Shaw presided. The lecturer, by the aid of lantern slides and the black-board, gave intelligent descriptions of the motive systems in different makes of the motor-bicycle.

PROFESSOR H. S. HELE SHAW has accepted the presidency of the Liverpool Motor Cycle Club. A tour in the direction of Morecambe is being arranged by the club for Easter.

A MEETING of motor-cyclists in Edinburgh and district was held on Friday last week. Mr. T. M. Sleight, the convener of the meeting, said the first point for consideration was the desirability or otherwise of forming a motor-cycling club for Edinburgh and district. He thought a club would prove a valuable aid in developing the sport of motor-cycling, as well as a stimulus to the trade. After some discussion the formation of the Edinburgh Motor-Cycling Club was decided upon, and a committee appointed to draft a constitution and rules, which will be submitted to a later meeting.

A MOTOR-CYCLING club is in course of formation at Southampton.

THE Motor Cycle Union of Ireland has just obtained an important concession from the Irish Railway Clearing House whereby motor cycles will be carried by rail at rates double those charged for ordinary cycles. Under the old arrangement such exorbitant charges were made that most motor cyclists were prevented from availing themselves of the railway. A uniform rate throughout Ireland has now been arranged.

ON Saturday last Messrs. Shaw and Lee, Brixton Hill, in conjunction with the Firefly Motor Company, of Croydon, held the first of a series of monthly auction sales of motor-cars and cycles. The catalogue ran to over fifty lots and the interest evinced in the new departure was very great. Over forty cars of various horse-power and types were offered and excellent business resulted. The biddings were keen, and in a number of cases sharp contests ensued for ownership. For the April sale an even larger entry is expected.

A NOVICE'S EXPERIENCE OF MOTOR-CYCLING.

I HAVE now taken the *Journal* a little over two years, and have derived therefrom much useful information from time to time *re* motors, and certainly had my interest in self-propelled road-vehicles aroused by its means. I have now run a motor-tricycle a little over a year and wondered if my experience of what can be done with a small motor (if one really tries to get at the why and wherefore), would be of sufficient interest to the general reader to merit publication.

I am a working master plumber and decorator, and thought a small motor that would carry a few stones of material and self, or self and apprentice with kit of tools, would be of great use to me, as I have several customers at outlying villages in a radius of twelve to fifteen miles, which is not served by rail. I consequently made enquiries and came across a good strong old Beeston tricycle, which had given the first owner much worry, and was then in the hands of a motor engineer, who was running it fairly well, except for ignition troubles. I purchased the machine, getting some useful hints as to driving and managing, and then commenced my own troubles, which at first were really confined to contact breaker, the springs of which rarely lasted above a dozen miles before snapping. Of course I always carried spare ones, but the constant stopping to renew them was disheartening, as they would generally go at the most awkward places. The form was this: a curved top spring, fast at one end to terminal bolt, the other end working in slot; the bottom spring was straight, and with being weakened by the hole in the middle for the platinum rivet the constant "knock" of the plunger from the cam soon did the mischief. One day I had run about forty miles without a break and wondered greatly, so I took the contact-box cover off and found the bottom spring broken just beyond the platinum, the end of the same lying in the bottom of the box. This at once taught me the form required to stand. I then made both springs short with free ends, since which time I have had no trouble. In fact, I have not had to clean the points or adjust them for the last 700 miles. As now arranged the points have a slight rubbing action and thus they clean themselves. My total mileage for last season was about 1,400 miles.

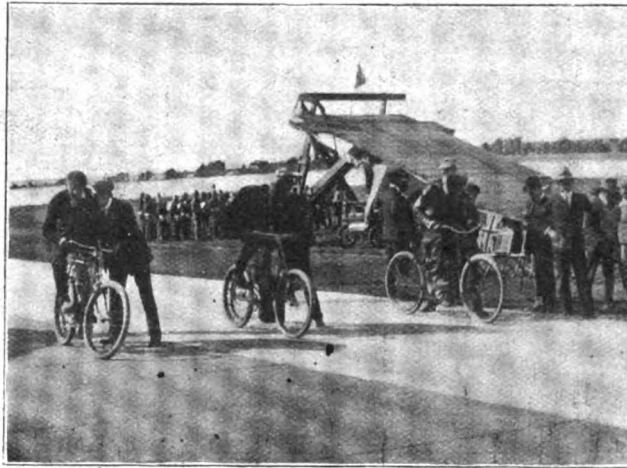
My first real trouble was when I had run the machine about a week. I was twelve miles from home, and suddenly heard a bad scraping; I dismounted, but could not find the cause; tried again, but no better, but ultimately found that the bolt with eccentric ends which carries the motor on the brackets of the bridge had one end gone, so allowing the motor-case to grind on back axle. Here was a job for a novice a week old! However, I set to work and took the motor off, drawing broken bolt out of the crank case, and made my way to a village smith's shop, hoping he might be able to drill same and fix new end in bolt. The job was, however, too light for him and he would not tackle it. I asked him if I might try, and he giving me permission, I set to work with his elaborate machines and managed to drill a fairly true hole. I was then as far off as ever, he not having a suitable tap to thread same. Necessity is, however, the mother of invention; so I rummaged amongst his scrap heap and found an old cycle crank-pin, which proving to be steel, he hardened, and with this I managed to put a decent thread in the hole; the rest was simple, and in less than two hours I was on my way rejoicing. Although I had a new bolt turned and fitted, I still retain my repaired one for a standby.

My next breakdown was more serious—the breaking of the large gear wheel on the back axle. This was beyond my power to remedy. I was five miles from home, so took off the engine pinion wheel and pedalled the machine home. Stoppage No. 3 was one which ought not to have been worthy the name if I had been supplied with spare parts, which all motorists should carry, the head of the exhaust valve breaking. I was eight miles from home, so I took the broken valve out and left the machine on the roadside in care of a cottager, making for home on a bicycle. I managed on my little lathe to turn a brass head for the valve and screwed the old spindle into same, making it as near in size and bevel to the old one as possible. Returning with it and some emery powder, I managed to grind the valve in a tolerable fit, and again got safely home.

Breakdown No. 4, and last up to date, was ignition trouble, which took me over two hours to locate, and the remedying of this I really consider my greatest success, and likely to be of most use to others. Well, in this instance I could get no spark whatever with the plug out, and laid in the usual way on some part of the frame. I tried and tested all points—switch handle, contact breaker, wires, connections, etc.—but all to no purpose; at last I took my accumulators out and tried them across with wire. There was no life there, so concluded I was really done. Now came what I must call an inspiration, viz., the thought to take batteries apart and try each cell separately. I then found one completely dead and the other fairly lively. I then connected this latter up and got a nice spark; putting the plug back in the engine, I started at once, and again got home. The crowning part of this experience is that from that time I have constantly run with one 2-volt cell only as well as ever I ran with both connected; so, although I always carry both fully charged, I only run on one. A point here arises *re* the charging of cells. I think they should never be charged in pairs, but each cell connected to charging board separately; although the current could not force its way through the faulty cell, it was ample to drive the motor when unobstructed by the bad cell.

For the last four or five months I have had nothing but absolute pleasure. Although I suppose my tricycle was originally only intended to carry one, I constantly carry two of my children in a seat I have fixed on spiral springs at the back of the machine, and lately I have got a double trailer, and, in consequence of our roads being very flat, am able to take my wife and eldest daughter about without any difficulty. It is really marvellous what a 2½-h.p. motor will do when kept in good condition and repair. My opinion is that there is more harm done to small motors by careless starting and over-running than all the legitimate running one can give them. In conclusion, I can assure any intending small motorist that the ordinary troubles experienced can, with care, soon become matters of very little moment, but would beg him to remember that, as the motor is doing for him all the hard work, it surely deserves his most careful attention to all its working parts, and I am convinced that (as in my case), it will soon become a real pleasure.

A SATISFIED YORKSHIRE NOVICE.

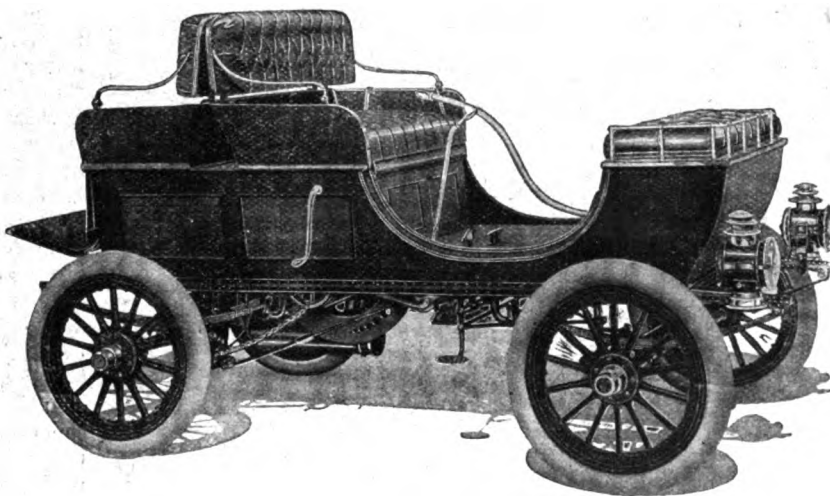


Motor-Cycle Racing in South Africa.—Getting Ready for the 5-Miles Ha dicap.
[See *Journal*, March 7th.]

THE annual general meeting of the Cyclists' Touring Club was held last week. The principal item on the agenda was one proposing that the constitution of the Club be so altered as to admit automobilists and all tourists to membership. This was defeated by a large majority, but a postal vote has yet to be taken.

THE "JACKSON" CAR.

THE latest American petrol car to be put on the English market is the "Jackson," of which an illustration is given herewith. It is driven by an 8-h.p. horizontal single-cylinder motor, located at about the centre of the frame. The cylinder is 5 in. diameter by 6 in. stroke, the normal speed being 700 revolutions per minute. The ordinary system of electrical ignition is employed, the timing of the spark being mechanically accomplished in connection with the throttling of the mixture, which is furnished by a float-feed carburettor. The water circulation is maintained by a gear-driven pump and radiator, about six gallons of water being carried. The motor is coupled direct to the transmission gear by means of a flange coupling. The change gear is of the Crypto type, giving two speeds forward and a reverse, and is operated by a single lever. On the top speed the power is transmitted direct, without the intervention of any gearing. A single roller chain connects the change-gear shaft with the rear live axle. A spur gear differential is used. The two gears are firmly keyed to the axle core, and the rear hubs are keyed to the opposite ends of the core. Two independent brake bands, acting directly on the outside of the main gears, give the same effect as if each wheel had an independent brake on it, without any of the disadvantage of the latter method. The brake is operated by a pedal, with a locking mechanism, so that the vehicle can be left standing on an incline. The brake bands are operated through a pair of eccentrics. Both axles are tubular, the rear axle having four rows of ball bearings adjustable independently. The front wheels have ball bearings on the steering arms, the heads of the arms being fitted with hardened and ground bushings, which run on the steering head bolt. Artillery wood wheels are used, shod with 3 in. by 28 in. pneumatic tyres. By means of a handle at the side the engine may be started from the driver's seat, the clutch connected with the handle being so arranged that when being used the compression is relieved. The car, which weighs about 9 cwt., has a wheel base of 6 ft. We have not yet had a trial run on one of the new cars. The motor and transmission are readily accessible, and Messrs. R. Reynold Jackson and Co. inform us that the vehicle is extremely silent in operation. The illustration shows the dog-cart seating up to six persons; it is also made as a touring vehicle, with accommodation for two passengers and ample luggage space. We may add that the body is attached to the frame by eight bolts, and all that is necessary to detach it is to remove the bolts, the starting handle chain, and disconnect the ignition wires.



The "Jackson" Dogcart.

At the last Sports meeting at Melbourne two motor cycling races attracted much attention. The first was over a distance of eight miles, H. B. James (20 secs. start) winning in 15 min. 3½ secs. S. Day (1 min. 20 secs.) won the five mile race in 8 min. 34 secs.

THE Anderson Motor Tyre Company, Limited, has been registered with a capital of £2,500 to carry on the business of manufacturers of and dealers in pneumatic and other tyres and wheels for motor-cars, etc. The registered office is at 12, Great Dover Street S.E.

FRAME CONSTRUCTION.

THERE has been very considerable variation in the construction of frames for motor-cars, and a final type has not yet been arrived at. The forms of construction which have received extensive trial include the following: Tubular steel, angle steel, channel steel, steel flitched wood, plain wood, pressed steel, and steel tube with wood filling. All of these forms are still more or less in use, but some are declining in popularity, while others are gaining. As regards the tubular body frame construction, the main objection to it is the difficulty of properly fastening the mechanism to it. Plain angle steel is also rarely employed, as angle steel lined with wood furnishes a construction better able to withstand shocks and weighing less for a given strength. The steel flitched wood frame was almost universal with leading French makers last year, but this season pressed steel construction seems to be in the lead with these same makers. Pressed steel frames necessitate a more expensive manufacturing equipment than any of the other forms of construction, and if such frames should prove mechanically superior to the other kinds, they are likely to gain in popularity as motor-cars are manufactured in greater number after the same pattern.

The conclusion to be drawn from the results of experiments so far and the various changes made is, considers the "Horseless Age," that a combination of wood and steel in some form makes

the best frame for automobiles, the steel providing the necessary rigidity for connections, making it impossible for the parts attached to the frame to be displaced therefrom, and the wood giving the whole frame a certain elasticity, which is beneficial alike to the life of the frame and to the proper operation of the machinery placed on it. That a combination of wood and steel makes the most durable structure for a road vehicle had already been discovered by carriage builders, and has now been reaffirmed by the experience of automobile manufacturers.

There are, however, a great many possible variations in the combination of wood and steel for this purpose, and the problem now is to determine the most suitable combination, having regard to cost of manufacture, strength for a given weight, and durability.

THE London Traffic Commission is holding its sittings in the large room of Caxton Hall, Westminster.

THE Continental Caoutchouc and Gutta Percha Company are making arrangements for the provision of mechanics skilled in tyre repairs for the benefit of competitors in the forthcoming Gordon Bennett race.

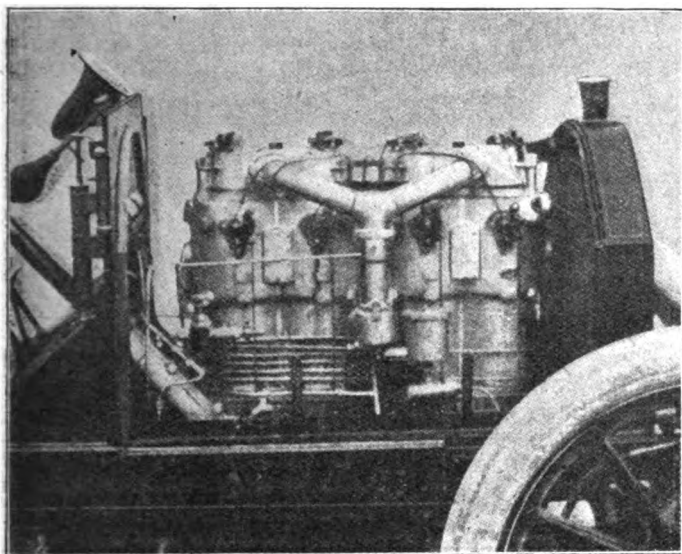
MR. C. M. MATHESON, of the Matheson Motor-Car Company, of Grand Rapids, Mich., announces that he and Mr. J. B. Hedges, both of whom will try for a position in the American Gordon Bennett team, have entered for the Paris-Madrid race and the Ardennes Circuit race.

CLARKSON, LIMITED, is the title of a company registered with a capital of £1,000 in £1 shares, to acquire the business of the Clarkson and Capel Steam-Car Syndicate, Limited, and to carry on the business of manufacturers of steam and other motors, etc. The first directors are Messrs. F. Fremlin (chairman), A. Jones, and T. Clarkson. Registered office, Moulsham Works, Chelmsford, Essex.

HERE AND THERE.

MR. T. HEY, the hon. treasurer of the Yorkshire Automobile Club, has a 20 to 24-h.p. Spyker car on order.

A MOTOR omnibus plying along the front at Hastings has attracted considerable attention there during the last few days.



View of Motor of 1903 60 h.p. Mercedes Car.
(Allgemeine Automobil Zeitung.)

TRIALS of the Hans motor lawn mower are to be allowed at Lord's cricket ground, and will be witnessed by the head grounds-men of many county cricket clubs.

IN the U.S. 1903 Post Office Appropriation Bill, authority is given to appropriate a sum of £20,000 for the employment of automobiles in the postal service.

AN accident was caused at Montboron Hill, between Nice and Villefranche, by an automobile, driven by Mr. Lindsay Scott, colliding with a heavy wagon. The wagoner, who was seriously injured, was conveyed by Mr. Scott to the Nice Hospital.

THE Scottish Automobile Club are preparing lists of hotels, storage depots, petrol suppliers, repairers, etc., throughout Scotland, and petrol dealers, engineers, etc., who are desirous of having their names inserted should communicate with the General Secretary, 59, St. Vincent Street, Glasgow, without delay.

THE Bath Garage and Motor Company (Fuller's), Limited, has been registered with a capital of £10,000 to adopt an agreement with Mr. W. T. Edgar, to acquire the business of the Bath Garage and Auto-Car Company. The first directors are Messrs. S. C. L. Fuller, W. T. Edgar, and R. C. L. Fuller.

A DAILY automobile service has been established between Guadeloupe and the town of Ste. Rose, Guadeloupe. This service is the first step towards the substitution throughout the colony of automobiles for the archaic stage coaches which were the only means of land transport. Two new lines will be shortly established, one from Guadeloupe to Basse Terre and the other from Guadeloupe to Le Moule. The cars used are of French manufacture and of the petrol type.

A NEW lead accumulator for electrical cars possessing several features of great interest is, reports the "Electrical Review," about to be brought out. The plates are of the Planté type; only five are required for capacities up to 250 ampere-hours—three negatives and two positives. A cell of this type, rated at 120 ampere-hours and weighing 22 lbs., has been charged in less than an hour, and discharged in three hours, with a remarkably high quantity efficiency. Moreover, two-thirds of the full charge can be put in within a quarter of an hour.

FOUR self-propelled vehicles are owned by the Liverpool Corporation.

MR. SCARISBROOK, the Mayor of Southport, has been enjoying a motor-car tour in France.

THE dimensions of the 100-h.p. "Automotor" petrol motor illustrated in our last issue are 160 mm. bore by 260 mm. stroke

M. SERPOLLET has expressed a desire for a motor-car race with the Hon. C. S. Rolls on the Promenade des Anglais, at Nice.

THE Sheffield Motor Company, of Broomhall Street, Sheffield, are now catering for the wants of motorists by keeping a stock of petroleum spirit.

THE exports of automobiles from the United States during January last were valued at £22,874, as compared with £5,462 during the same month last year.

ON Friday next, before the Aeronautical Institute and Club, Mr. E. Gaudron will give a lecture on "Twenty-four Years of Ballooning," Dr. F. Alex. Barton presiding.

THE U.S. Treasury Department has decided that automobiles shall be admitted into the United States without paying duty for a period of four months on their owners furnishing a bond.

IN the plan of the Motor-car Exhibition published last week, the General Motor Garage should have been the Great Central Garage, Limited. The Highgate Motor-car Company is also exhibiting.

AT a meeting of shareholders of Frank F. Wellington, Limited, on Friday last week, dividends were declared at the rate of 6 per cent. on preference shares and $7\frac{1}{2}$ per cent. on the ordinary, a balance being carried forward.

THE accompanying illustration shows the new type of omnibus body which Messrs. C. S. Rolls and Co. have lately introduced. As will be seen, it is fitted with detachable top which enables motorists to have either a completely close,

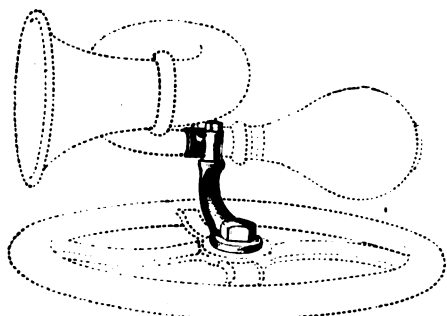


omnibus, or an open wagonette at choice, without having to buy two different cars. The bus body is shown attached to a Panhard car, but it is equally well adapted to other vehicles in which the motor is located in the fore-part of the frame.

WITH regard to the external jump gap ignition, Mr. W. McL. Dann, of Newcastle, writes that this is a very old dodge with oil engines, and was known at least eleven years ago. "At that time it was not generally understood, and was only used on troublesome engines when ignition was very irregular, but on the introduction of the marine oil engine, with explosions both top and bottom of the piston, it came into everyday use. On several occasions during 1894 and 1895 I did passages of 500 miles with this method of ignition." It is a pity that Mr. Dann kept this valuable information to himself so long. Certain it is that the external gap, be it a new or old idea, is of great importance to automobilists.

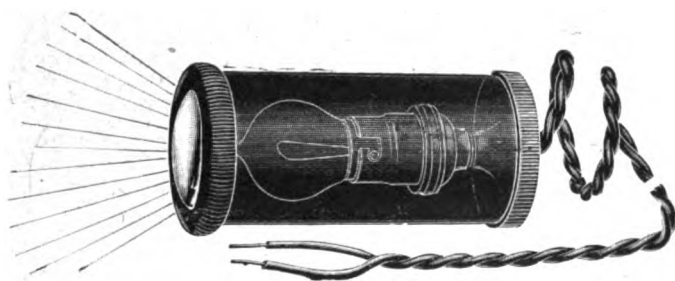
MESSRS. S. BROWN AND COMPANY, who have removed their show-room from New Street to Yeoman's Row, Brompton Road, S.W., have opened a repair shop and garage at 29, Chapel Place, Brompton Road, S.W.

MESSRS. JOSEPH LUCAS, LTD., of Birmingham, have recently brought out the useful little fitting illustrated herewith. As will be seen, it is a plated bracket attachment for fixing motor horns



conveniently on the steering wheel. Two sizes of the bracket are made—a short one for use on flat wheels and a long one for dished wheels.

MESSRS. C. W. BLUEMEL AND BROS. have lately put on the market the four-volt test lamp illustrated herewith. The use of such lamps for testing accumulators is known to most motorists, but the form hitherto available has had a drawback in the liability to breakage either in the pocket or toolbag. The Bluemel lamp, as will be seen, is fitted inside an ebonite case, so that it can be carried without risk of breakage. In the upper end of the case a lens is inserted, so that the lamp can be seen without removing the cover. Two yards of insulated wire are fitted to each lamp, affording the additional advantage that at night this can be attached to the accumulator terminals, and a perfectly safe light thus obtained, in case of any adjustment being necessary to the car or cycle, where a naked light would prove dangerous. In a slightly cheaper form the lamp is supplied with the ebonite case, but without the lens top. By connecting up the wires of the lamp to the terminals of the accumulator a test is provided of ascertaining that cells are in good condition, without the risk of short-circuiting the cells. If the accumulator has still a sufficient charge the lamp should glow very brightly; if it only glows dimly



the accumulators are down, and a run should not be risked without recharging. The lamp also provides a ready means for the discovery of a short circuit, in the primary wiring, one end of the wire should be attached first to the negative terminal of the accumulator and a test made along positive wire or lead to the terminal, or from the positive of the accumulator along negative wire or lead to its terminal, the wire which is leaking to earth being quickly shown by the lamp failing to glow, when in circuit. The first test should always be made at the accumulator, then the whole primary circuit, with the interrupter plug in position and switch on. Hold the wire of the lamp to the insulated screw on contact breaker (the screws must not touch the trembler) and the other lamp wire to the trembler blade. If the lamp glows brightly it proves the primary circuit is perfect, and that the leak (if any) is on the high tension wire from the coil to sparking plug. The lamp takes a current of slightly under one ampere, so that it can be used without risk of rapidly discharging the accumulators.

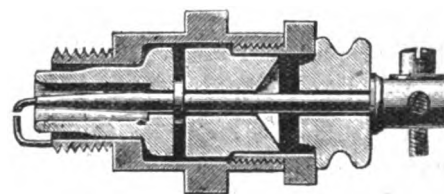
ON Saturday, the 28th inst., the Western Section of the Scottish Automobile Club will hold a run to Ayr.

FROM the E. R. Thomas Motor Company, of Buffalo, New York, U.S.A., comes a copy of their fourth annual catalogue, in which illustrated descriptions are given of the Thomas 8-h.p. car and the Thomas 2½-h.p. motor-bicycle.

THE engineering possibilities of the Garden City are sketched out in a pamphlet written by Mr. H. Guthrie, a Manchester engineer. It will, according to him, be a quiet city; all vehicles will have rubber tyres, and horses will disappear.

THE Warwickshire Farmers' Association have had suggested to them the desirability of calling the attention of the President of the Board of Agriculture to the advisability of taxing heavy motor traffic passing over roads repaired by the farmers.

AMONG the many new sparking plugs that have lately been introduced is the Pognon illustrated herewith. It is made by M. Pognon, of Verdun-sur-Meuse, and that it has features of merit is evidenced by the fact that it has already been adopted by a number of leading concerns in France, including Panhard-Levassor and Georges Richard. The plug is formed of a steel cylinder, containing three sections of porcelain, with a steel rod running through the centre for the passage of the current. At the sparking end, both porcelain and the steel portion of the plug are cup shaped, so that there is a considerable space between the porcelain and the steel rod, and the porcelain and the sides of the steel cylinder. It is claimed that there is thus no chance



of a short circuit being formed through oil or soot bridging over the space. In fact, it is stated that it will spark even when immersed in oil. The plug will be on view on Mr. J. E. Hutton's stand at the Exhibition which opens to-day (Saturday).

MR. A. F. ILSEY has resigned his appointment with Messrs. A. J. Wilson and Company, Limited, in order to join Mr. Van Hooydonk and assist in the development of the business in Phoenix motor-cycles.

A MOTOR department of the Army Service Corps is being formed, and a company of the corps, under Major C. E. McNulty and Lieut. H. R. Hayter, has arrived at Chatham to go through a course of instruction in field traction engines and motor carriages for military purposes.

FINE new show-rooms have been taken by Messrs. John D. Hill and Company at 106, Great Portland Street, W. The premises are fitted with a hydraulic lift from the basement and admirably adapted for the purposes of the firm, which starts under very favourable auspices. It is the intention to deal only in high grade cars.

LAST Saturday's visit of the Nottingham Club to Narpanton was again spoiled by the bad weather. Among the participants were Mr. Walter Foster (son of Sir W. Foster, M.P.) on a 12-h.p. Gladiator; Mr. H. Belcher, on a 12-h.p. Humber; Mr. G. Hodson, of Loughborough, on a 6½-h.p. Darracq, and Dr. Palmer, of Nottingham, on a 5-h.p. Peugeot.

THE Danish Chamber of Deputies has fixed the speed limit of motor-cars at 30 kilometres (18½ miles) per hour on country roads, and 15 kilometres (9½ miles) in towns.

IN the "Poule des Vainqueurs," held at Suresnes, near Paris, on Monday, the 12-h.p. Chenard-Walcker car covered a distance of 121.3 kil. on 7 litres of petrol, equivalent to 49½ miles to the gallon.

WATER CIRCULATION EFFICIENCY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have noticed some remarks about the efficiency of coolers and their joints; I think the following a rather severe trial. I left Wroxham, near Norwich, with the cooler filled up with three gallons of water, drove to London, was four days running about town, and then journeyed back to Wroxham by road, never putting in a drop of water during the whole time. This is the usual cooler as fixed to the Brooke car; the circulation was perfect and the motor ran well up to the finish. As regards joints, I certainly do not hold with soldered joints; the simple rubber rings as used on the Clarkson pipes are much better and will last for years.—Yours truly,

E. ESTCOURT.

MECHANICALLY-OPERATED INLET VALVE FOR BENZ CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In a recent issue of the *Journal* you described an arrangement lately put on the market by which the present suction inlet valve of the 3½-h.p. Benz motor could be converted into a mechanically-operated valve, with consequent gain of power and regularity of running. Being the possessor of a 3½-h.p. Benz, I contemplate effecting the change, but before doing so I should be glad of some independent opinion as to the safety of a mechanically-operated inlet valve used in conjunction with a surface carburettor.

My fear is that, should any slight error occur in the timing, some of the exhaust gases might escape through the prematurely opened inlet valve to the carburettor and cause either explosion or fire. I am aware, of course, of the protection of the gauze box, but am afraid that the gauze, if subjected to the heated exhaust gases, would soon burn through, and a catastrophe would be the first intimation of the damage.—Yours truly,

A. G. J.

AUXILIARY STAND-BY FOR MAGNETO IGNITION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think the following account of an experiment I have just carried out for a friend of mine, Mr. Chatfield Clarke, who owns a Beaufort car with magneto ignition, will prove of great interest to all owners of cars with this method of ignition. Hitherto, I believe, when such motorists have asked for some form of portable auxiliary ignition to carry with them, in case the magneto broke down, they have always been told that there were insuperable difficulties in obtaining this, and that they must be content with the magneto only, and, in fact, take their chance.

In order to assist my friend, I have lately been trying various experiments, and, at last, hit upon a simple form of six dry cells, and a specially wound coil, with which, we found, the car ran perfectly at all speeds, and on all gradients. As the dry cells are of a specially durable type, and as they and the coil fit into a small wooden box some 8 inches by 10 inches, which can be carried on the off-side step, it would appear from this experiment that a simple addition can now be made, without in any way interfering with, or altering, the magneto ignition, but should the latter become deranged from any cause, its place is immediately taken by the cells.—Yours truly,

E. DU BOULAY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It may interest the owners of cars with magneto ignition to know that it is possible to fit a very simple and inexpensive supplementary ignition, which is a very useful reserve, if, by any chance, the magneto should fail on the road. This, of course, is very unlikely, still it has hitherto been the great objection to magneto ignition that one can do nothing to it if the magneto does go wrong on the road, whereas one can usually repair a coil, or recharge an accumulator, or buy new dry batteries. However, this week Captain du Boulay tried running my 12-h.p. Beaufort car with dry batteries and a coil on the low tension system, detaching the magneto wires, and attaching the wires from the batteries and coil to the ordinary rocking plugs. A grand spark was obtained, the engine started at the first turn, and ran beautifully, giving off even more power, if possible, than with the magneto. The sparking advance lever worked just the same as with the magneto, and it was possible to advance or retard the ignition quite easily without any further complication. I carry the coil and batteries in a small box on the off-step, and with two short lengths of wire and an ordinary switch, I have a very reliable duplicate ignition in reserve in case the magneto should fail.—Yours faithfully,

A. H. P. CLARKE.

THE GORDON BENNETT RACE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in your last issue an anonymous letter which suggests that because I am a member of the Committee appointed by the Automobile Club to settle controls and where the road requires improving for the Gordon Bennett race, that, in some way, gives me an unfair advantage over other competitors.

This letter has evidently been written by someone who does not read the current newspapers, as the Automobile Club have already provided against anybody practising over the course except on a relatively slow vehicle, and of low horse-power. If one chooses to practise on a small touring vehicle, over the course, it is perfectly open for every competitor to do so, and to do it every day from now to the race!

The fact that I am acting on the Committee is an actual disadvantage from a practice point of view; as, unfortunately, my time for journeys to Ireland is limited, and the days that I am employed helping to settle controls, interviewing road surveyors, etc., reduces the number of days on which I might practise driving over the chosen route. It is less than two years ago that anonymous writers mentioned that my failure in the 1901 Gordon Bennett race was because I did not practise over the course as the Frenchmen did! Now I notice a correspondent seems to be frightened that the rules passed for the interest of all concerned may not sufficiently safeguard the foreign interests.

I think if your correspondent signs his name his letter will be better appreciated by your readers.—Yours truly,

S. F. EDGE.

MOTOR-CARS FOR MEN OF MODERATE MEANS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—No doubt there are a great number of your readers who are hesitating about buying a motor-car because they are under the impression that it will require a mechanic to look after it and do any slight repairs that are required. Since I bought my car some nine months ago I have had the gear box, differential gear, and every part of it to pieces, without any



outside help or any previous knowledge or experience in engineering. The enclosed photo is taken of myself at work on the car at the rear of my premises. As will be seen, the cylinder and bonnet are dismounted; the bonnet is a water-cooling arrangement on the thermo-syphon principle. You will notice that the car, which is a 5-h.p. Argyll, is run up on to a wooden platform, which I made myself, so as to afford better facilities for cleaning and overhauling.—Yours faithfully,

ROBERT BAINES.

CHAINS AND LIVE AXLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice that in your last number "Jack-in-the-Box" writes implying that the presence of chains on certain cars he names gets rid of bevel gear with its chance of break-down. Further, he advances the theory that, while chains are reliable, bevel gear cannot by engineers be made to stand, and is therefore avoided, and chains used by preference. Will you permit me to point out that neither of these is accurate? All but one (if not all) of the cars he names use bevel gear, the chains being merely an additional complication. As to reliability, gear, whether internal, external, or bevel, has been a perfectly recognised means of transmitting power reliably for many years, and there are numbers of gears which run their nine hours or more a day, year in and year out, and have done for years. How many chains do that? There should be no possible excuse for a gear wheel either stripping or wearing out for years, unless it is damaged by the system of changing gear at present used. On the other hand,

however well a chain is up to its work it has practically to be run naked, and so is always liable to damage.

No one disputes that makers "weigh the pros and cons" of what they do, as in fact Noah probably did when he built the ark of wood. This does not the least prove that everything they take up is right; the fact that they all do different things and constantly change their designs proves that they do not themselves think so.—Yours truly,

F. STRICKLAND, M.I.M.E.

THE NUMBERING QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—An article appears in the *Automobile Club Journal* of March 12th, headed "Identification," in which it is said that I signed a letter which was circulated in the Press in March last year, on behalf of the Eastern Section of the Scottish Automobile Club, in which it was urged that the Government should pass a Bill including identification "to prevent the dangerous or inconsiderate driving so often indulged in by a majority of motor drivers."

As I am made by such a statement to voice the views of the Eastern Section of the S.A.C. in a manner exactly opposite to what they really are, I think there must be some mistake. I wrote to the Secretary of the A.C.G.B.I. to ask what the document was. He referred me to page 17 of a Blue-book, "The Law as to Motor Vehicles, what it is and what it should be." There I find a letter signed by the whole General Council of the A.C.G.B.I., in the course of which it is said that the Club feels that the proviso of the County Councils' Association, viz., "That there should be an easy and complete means of identification," is one to recommend itself to all drivers of motor-vehicles.

As I do not remember having signed such a document, and as I see that the signatures include those of persons who are quite opposed to numbering, and, further, as I see that I am made to sign the word "Chairman" after my name, whereas I am not even an office-bearer of our Eastern Section, it looks as if the names of the General Council had been simply printed at the bottom of the document *en bloc*, or possibly the paragraph has been put into the document without signature. I have asked my friend, Mr. John Macdonald, whose signature appears below mine, and who is the Chairman of the Eastern Section, whether he remembers signing such a document? He bears me out in saying that he does not recollect such a matter coming before the Committee of his Section, and says that he is very unlikely to have signed anything without their knowledge.

I remember signing on behalf of our General Council a document put before us by the Secretary and which we were told was an appeal in the matter of heavy road vehicles, their tare, wheels, &c., such as is printed at the top of page 18 in the Blue-book. If I did sign a document without carefully reading it because it was sent from the A.C.G.B.I., I owe an apology not only to the Eastern Section but to the whole S.A.C., for seeming to make them support a proposal which is the exact opposite of what they wish.

I am not blaming anyone in these remarks, as there may have been some mistake, but I wish to guard against any idea that the Scottish Automobile Club is in favour of numbering or registration.

Passing from these points to the article in the *Club Journal* itself, I feel that the members of the Club have a right to resent such stuff being written in a journal which is supported by their money and exists for their information and pleasure. It seems a complete tirade against the members of the Club, whipping them soundly and sending them off to bed and demanding from them that they shall make some problematical statements as to how certain things are to be worked in the future, if they refuse to give up their liberties as free citizens and to allow themselves to be ticketed as being undesirable persons.

If our Committee would confine itself to impressing upon Ministers, Members of Parliament, and Government Departments that the best thing which can be done is to leave the matter alone till the people have recovered sense—which I believe they have done already—then we should have nothing to complain of. There has been far too much fussiness and trying to ride with the hounds and to run with the hare in the whole matter.

I have been made to express the very opposite of the views of the Eastern Section of the S.A.C. I have now pleasure in giving their true views as expressed at a full and free meeting in the following resolution, which was sent to the Secretary of the A.C.G.B.I.:—"That the Eastern Section of the Scottish Automobile Club are of opinion that while they are in favour of the removal of the speed limit, they consider that it is a mistaken policy for the Automobile Club of Great Britain and Ireland to introduce any Bill to Parliament; that the true policy for the Club to pursue is to act on the defensive and watch jealously any attempt to alter the present regulations."—Yours truly,

NORMAN D. MACDONALD.

[Pressure on our space compels us to omit Mr. Norman Macdonald's criticisms of the official article on "Identification," with which, however, Earl Russell deals in the next column.—Ed. *M.C.J.*]

DR. W. W. HARDWICKE, replying to Dr. Fennings in our issue of the 7th inst., says that he has found the spark intensifier supplied by the Automobile Accessories Company perfectly safe in use. In reply to Mr. E. Estcourt, if he had placed the saturated rag of his experiment *under* instead of *over* the open spark for a few moments he would most probably have had an explosion, as the fumes of petrol vapour, being so much lighter than air, rise and do not descend.

EARL RUSSELL AND "NUMBERING."

THE following letter has been addressed to the editor of the "*Automobile Club Journal*" by Earl Russell:—"I am amazed to see that the persons who are responsible for the conduct of the *Club Journal* are still continuing their disingenuous campaign of misrepresentation on the numbering proposal. I should have thought that the meeting of the 6th inst. would have settled this question, and would at any rate have taught the Committee to try not to misrepresent the views of the members of the Club. What, Sir, happened at that meeting? A resolution was moved to the effect that the Club declared itself totally opposed to conspicuous names or numbers on motor-cars. After a long and exhaustive discussion, as is shown by the report of the meeting in another column of the same journal, this motion was unanimously carried, Mr. Roger Wallace and Mr. Scott Montagu themselves voting for it.

Now, how is the result of this meeting represented in the *Club Journal*? No note whatever appears among the short paragraphs as to the discussion and its result, but at the end of these come four columns in large print of misrepresentations and threats against the membership in general, if they venture to support the unanimous vote of this representative meeting. I for one, Sir, shall require to know at some future time by what authority this has been sanctioned. We know that the campaign for numbering has been carried on by stating that the Club Committee were unanimous in its favour; we know that they have issued at the expense of the Club unlimited Blue-books and reports and notices to the Press, as to their strong and unanimous feeling on this question; and we know that finally they held a conference with some other Committee and allowed this to be represented in the Press as expressing the unanimous opinion of the Club.

"I have said before, and the appearance of the present *Club Journal* compels me now to repeat, that this action is unworthy of a Committee which pretends to represent its electors, but seems to wish only to represent itself. For a whole year I have been labouring to force the Committee into the open and to compel them to meet the membership face to face. When they at last do so, a unanimous vote is taken against them in which all the members of the Committee present themselves joined, and yet the next issue of the *Journal* is used to misrepresent in the most conspicuous position the significance of that meeting.

"Now I take the statements in the article headed 'Identification' one by one. The first is that no members protested by sending in their requisition for a special meeting of the Club. I, and no doubt many other members, protested at once by writing to the Secretary. We did not at that time suppose that the Committee would maintain an attitude opposed to the whole Club for fifteen months without giving us an opportunity for discussion, and we thought it more courteous to leave it to them to fix the opportunity. In response to my repeated pressure the Committee promised a discussion on this matter on November 6th. That discussion was postponed at the last moment without even the courtesy of a notice to me, although I had kept the evening free at special inconvenience, on the flimsy pretext that Mr. Scott Montagu's Bill had no opportunity of passing into law, a fact which was known to everyone from the beginning.

"The second point is that the principle of conceding identification, etc., was confirmed by a letter signed by many prominent members of the Council. Who cares? The point is whether this principle is conceded by the members of the Club as a whole, and not by some particular bigwigs ignorant of the practice of motoring and taken in by specious arguments.

"The third point is an attempt to belittle the meeting that was held. If the Committee thought the matter of any importance, why did they not send a special invitation to the General Council and to the Club Committee to attend? And, having done their best to make it a hole and corner meeting by not advertising it prominently, why do they complain that only eighty-one members attended? I wonder they do not go a step further and deny that the Chairman of the Club and the author of the Bill in question were present.

"The fourth misrepresentation is the statement that the meeting decided that a memorandum setting out the reasons for the action of the Legislative Committee and the opinions of the opposition should be prepared and circulated to members in order to obtain a postal vote. What the meeting did agree to was that the report of the proceedings at the meeting should be sent out and that three of the opponents should be added to the Legislative Committee to draft the form of the questions in order to obtain a fair expression of opinion on the vote, and to that there can be no possible objection. But will it be believed that in the report of the meeting on page 288 there is no sort of suggestion that still another of these one-sided memorandums presenting the Committee's short-sighted views should be sent out to the members?

"For these reasons I protest most emphatically against the extraordinary attitude which the Committee, as represented by their private organ, have thought fit to take up, and against their ridiculous threat that members of importance will resign their membership of the Club. If this be true, which I doubt, it only shows that such persons are not prepared to abide, as I said I was prepared to abide, by the decision of the majority, and are, therefore, unfit to be members of any organisation with a democratic basis. This attitude of domineering and maintenance of oligarchical rule has long been suspected by the general body of the membership, but I confess that I did not expect to find the Club organ so shamelessly avowing it.

"Finally, a week has elapsed, but the co-opted members have not yet been summoned to any meeting of the Legislative Committee to make the preparations for the postal vote. Why is this? I conclude with the same sentiment as that with which I began, that at the proper time I shall take the proper constitutional method of enquiring who is responsible for the publication of this official *communiqué* so diametrically opposed to the attitude of the responsible members of the Committee when face to face with the public meeting.—I am, Sir, your obedient servant, "RUSSELL"

THE ROAD PROBLEM.*

By W. REES JEFFREYS.

- (1) How to construct new roads suitable for rapid traffic.
- (2) How to improve and widen the roads that already exist; and
- (3) How to regulate the traffic on both the new and the improved roads.

I frankly admit that it is to the first of these questions that I attach the greatest importance, viz., how can new roads suitable for rapid traffic be provided?

But it will be obvious that the provision of new roads through and out of the great cities raises at once financial problems of enormous magnitude. But these difficulties must be overcome if we are to secure the building of new roads. I have come to the conclusion that if the schemes are to be realised it must be largely by private enterprise and private capital. If new trunk roads are to be built, trunk road building must be once more brought within the domain of private enterprise. I would call your attention, however, to the following facts:—

(1) Since the abolition of the turnpike system no new main roads through and out of the large towns have been built in this country.

(2) Most of the existing roads were constructed by private enterprise and financed by private capital.

(3) There is little hope that either the State or the local authorities will find very much money for building new roads.

The public authorities have entirely failed to provide new arterial thoroughfares, essential though these be to the development of the country. The question is whether it is possible to make road building a profitable enterprise. It is to the interest of private capitalists to combine together to build railways, tubes, and trams, and, in consequence, railways, tubes, and trams are built. It is to nobody's interest to build trunk roads, and, therefore, these are not constructed. Can we, however, by legislation make it as profitable to the private capitalist to build trunk roads as to build railways, tubes, and trams? It may, I think, be possible to answer this question in the affirmative.

In the immediate vicinity of all large cities there is land possessing little more than agricultural value, because it is not served by any arterial thoroughfare. Hitherto Parliament has only granted to railway and other companies compulsory powers to acquire land for the immediate purpose of the undertaking. A new precedent must be created. The promoters of the road must be permitted to acquire compulsorily the land which their road would improve. The road-building company would, after it has constructed the road, be in a position to sell or lease this land at very greatly enhanced values, and that enhanced value would not only pay for the cost of the road, but leave a considerable profit. The company would be far more than a road company. It would be a land development and transport company. It would build houses and tramways as well as roads. And the profits from lands, houses, and tramways would yield a handsome return upon the sum invested—a return which would increase as the City developed and the population increased.

I venture to advance, as a general proposition, that in a growing industrial district, where population is increasing, the building of a new arterial thoroughfare would increase the value of the land through which it passes, and if that increased value can be secured to the builders of the road, it becomes at once a financially practicable undertaking.

The position may be summarised as follows:—

(1) New motor roads are necessary to the full use of mechanically-propelled vehicles.

(2) That there is no reasonable expectation that such roads will be provided by (a) the State, or (b) the local authorities.

(3) That there is a possibility of inducing private enterprise and private capital to build such roads, with perhaps some small assistance from the State and the local authorities.

Whether motor roads are provided by private enterprise depends almost entirely upon the Automobile Club. It is the only organisation sufficiently interested and with adequate resources and influence to take the initiative in the matter.

It need hardly be pointed out that the Club has only to show the way and others will follow. Demonstrate that the building of trunk roads is a profitable form of investment for private capital, and capitalists will undertake the work for every large town in the United Kingdom.

I suggest that the following course of action should be considered. The Club should formulate a cut-and-dried scheme for a new road out of London. The scheme should show as exactly as may be (1) what such a road will cost; (2) what conditions are necessary to secure a profitable return upon the money invested. The scheme should then be laid before the Royal Commission on London Locomotion. The Club could say:—

Gentlemen, if Parliament can be induced as a result of your recommendations to comply with the conditions necessary to make the building of this road a profitable undertaking, we will form a company and raise the money to build it.

I venture to suggest that a new road from fifteen to twenty miles long can be profitably built through the suburbs of London if the following conditions can be complied with:—

(1) That compulsory powers are given to the promoters to acquire a strip of land fifteen, twenty, or more miles long and a quarter of a mile wide—i.e., the land for, say, one-eighth of a mile upon both sides of the proposed road.

(2) That the promoters are permitted to build, in addition to a track for the horse-drawn traffic—which will be taken over and maintained by the local authorities in the ordinary way—(a) a tramway track for both passenger and goods traffic, and (b) a motor road.

(3) That the tramway track and the motor track remain the property of the company, who shall be permitted to charge tolls for their use.

An arrangement preferable to the levying of tolls upon the traffic using the motor road would be the payment by the State of an annual sum in respect thereof. In other words, the road as a main road should share in the Exchequer grant.

The sources of revenue to the company would be:—

(1) The ground rent from the land let on building leases and fronting upon the road.

(2) The profits from the tramway track, which, as it would be built upon lands acquired, would not be subject to a purchase clause. Market garden and dairy produce would be carried throughout the night.

(3) Tolls from the fast traffic, or contributions from the State or local authorities in lieu of tolls;

(4) Subsidiary source of income, such as the supply of electric current to the houses on the estate for lighting purposes, to factories for manufacturing purposes, and to owners of electric cars. All the hotels and licensed houses upon the estate could be profitably kept in the hands of the company.

Towards the prime cost of building, the company might receive:—

(1) A grant in aid from the State. (Although I do not believe that the State will find all the money to build new roads, I think it would contribute to their cost, as it already contributes to the cost of some light railways made by private enterprise).

(2) A grant from the London County Council, whose policy is to promote schemes for housing the London population upon agricultural land outside the county.

I submit that the Automobile Club could not spend £1,000 to more advantage than in securing the services of an eminent road engineer, a leading surveyor and valuer, and an able Parliamentary agent to prepare a definite scheme, which could be laid before the Royal Commission and the Government for a new motor road out of London.

I suggest that a proposal for a road of this character should be laid before the Royal Commission on London Locomotion, although at the present time there does not exist any administrative machinery by which it can be carried out at the public expense.

If there is any road in the country which we might expect to be kept in the best of condition, it is the one extending from London to Carlisle—the Great North road—that historic highway which forms the principal means of road communication between the two capital towns of Great Britain.

Most of us, both on bicycle and motor-car, have travelled this highway. We have come upon delightful short trips of roads, along which we have been able to speed with enjoyment, and we have murmured grateful thanks to the surveyor and the responsible road authority. Then, with startling abruptness, we have found ourselves upon other stretches the bad condition of which has driven us almost wild with desperation, and we have called upon Heaven to deal out justice in the next world to men whom we cannot bring to book in this.

The Great North road runs through the areas of no less than seventy-two highway authorities, of which number forty-six are actually engaged in its maintenance, but all the seventy-two have some share in its administration. The Great North road should be widened gradually throughout its length to about 100 ft. to 120 ft. But this cannot be done at the present time. On the contrary, under the existing system, everything combines to make such widening, however necessary, as expensive and as difficult as possible. Houses are being erected, too, near the metalled carriage-way. The only restrictions are those imposed by the Public Health Act, and any building bye-laws that may be adopted by the various Urban and Rural District Councils. A general rule governing the Great North road and all other main roads should provide that no new buildings shall be erected within 60 ft. of the middle of the highway. This would permit of the road being gradually widened to 120 ft. without it being necessary to pull down any new buildings or to acquire, at the public cost, fresh land. Rules of this kind should be drawn up by a Central Department.

In conclusion, the chief lines of reform are: (1) The creation of a Central Highway Commission. The Lunacy Commissioners in some respects, the Light Railway Commissioners in others, are bodies which might be taken as examples of the kind of organisation required. Just as the former are instructed to secure the efficient administration of the lunacy laws and the proper maintenance of lunatic asylums, so the Highway Commissioners should be empowered and enabled to secure the efficient administration

* Extracts from paper read before the A.C.G.B.I. on the 12th inst.

of the Highway Acts and the maintenance of the roads in a condition adequate to the demands upon them. Again, just as the Light Railway Commissioners are instructed to encourage the provision of light railways, so would the Highway Commissioners be empowered and enabled to secure the provision of wider and better roads.

(2) The creation of a body of capitalists interested in roads by making it profitable to private capitalists to build new roads.

(3) The unification and simplification of the existing system of highway administration. What the Government has done for education it should do for highways, by making the county councils and the county boroughs (and, in certain districts, joint committees of these bodies) the responsible authorities for the condition of all the highways.

The future is in the hands of the A.C.G.B.I. Whether these reforms are carried through depends largely upon the Automobile Club. It alone is in a position to supply the driving force necessary to bring about these changes. It may succeed in engaging the help of other bodies, but it must organise and engineer the movement. Will it rise to the needs of the occasion? It is for you to say. Judging from its past history, I myself believe that the answer will be in the affirmative.

A SECOND ACQUITTAL.

ON November 16th, Alfred Gregson, Croydon, was riding a motor-bicycle on the Brighton road at Purley, with Mrs. Gregson riding behind in a trailer, when a pony and trap came into collision with the bicycle. The bicycle and trailer were smashed and Mr. Gregson was seriously injured. The driver of the pony trap drove off at once, leaving Mr. and Mrs. Gregson in the road, Mr. Gregson with a broken collar-bone and in an unconscious condition. At a recent sitting of the Croydon County Court Mr. Gregson claimed damages from Mr. Eli Marwood, a builder, of Godstone Road, Croydon, who was alleged to be the driver of the trap. Mr. Marwood denied this, and eventually His Honour gave judgment for the defendant. The matter was re-opened last week through an action brought by Mrs. Gregson against Mr. Marwood for damages for personal injuries received in the accident. After an exhaustive hearing his Honour gave judgment for the defendant again.

THE SALE OF A MOTOR-CAR.

BEFORE Mr. Justice Grantham and a special jury, Isidore Clifford sued Hewetsons (Limited) for the rescission of a contract to purchase a motor-car, or alternatively for damages for breaches of warranty on the sale of the car. The defendants denied that the plaintiff was entitled to rescind the contract or that there had been any breach of warranty, and they counterclaimed to recover £9 3s. 6d., the balance of the price of the car, and £62 10s. 3d. for other goods supplied. They also claimed to be entitled to 10s. a week for storing the machine since it had been returned to them by the plaintiff. The plaintiff's case was that on January 4th, 1902, he agreed to purchase from the defendants a 10-h.p. Benz car for £489 3s. 6d., and paid the sum of £480 on account of the price. Upon the occasion of the sale the defendants, according to the plaintiff, verbally warranted that the motor-car was properly built and constructed and was in good working order, and they guaranteed it for six months. The car, according to the plaintiff's case, was badly constructed in various particulars and never ran well, and was constantly in need of repair. Eventually, on June 8th, 1902, he returned it to the defendants and asked for a return of the £480 paid by him. The plaintiff, in giving evidence, said in November, 1901, he had a 10-h.p. Benz which he had bought from the defendants. He had had it five months and had driven it 10,000 miles, and the car was in every way satisfactory. The defendants asked him if he wished to sell the car, as they had a customer who was anxious to purchase such a car second-hand and was willing to pay the price of a new car for it. The defendants said that, if he would agree to this, he would be getting a new car for an old one. He eventually agreed to let them have his car, and chose in exchange, first of all, a 10-h.p. Charette car, which proved unsatisfactory; and the defendants then suggested that he should wait until a new 10-h.p. Benz tonneau car should come from the factory at Mannheim. When this came he was dissatisfied. On behalf of the defendants, witnesses were called to prove that the motor-car was properly built and constructed, and was in good order and free from defects when it was delivered to the plaintiff. Such defects as were apparent in the car on its return were, it was alleged, due to careless and rough treatment and negligent and improper management of the car by the plaintiff and his driver. Witnesses from the defendants' works also stated that the plaintiff was a faddist in regard to the car, and was in the habit of bringing it to the works for repairs when the latter were unnecessary. No evidence was given on the counter-claim, it being practically admitted by the plaintiff. Counsel having addressed the Court, his Lordship summed up the case to the jury, who returned a verdict for the plaintiff for £260 on the claim, and for the defendants for £89 on the counter-claim. Judgment was given accordingly for the plaintiff on the claim and for the defendants on the counter-claim, with costs to the successful party in each instance.

Application for a new trial is being made on behalf of the defendants.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Bishop's Stortford...	G. Marsh, London	—	£3, etc.
"	A. Crowder, Bow	—	£2, etc.
"	W. Lee, Forest Gate	—	£2.
Leeds	H. A. Routh, Leeds	18 m. p. h.	40s., etc.
Epsom	J. Overton	16½ m. p. h.	30s., etc.
Kingston	E. C. Muir, St. James's Place, W.	—	£2, etc.
"	F. Bircham, Woking	—	£2, etc.
Chelmsford ...	S. Galley, Stamford Hill	23 m. p. h.	£5.

Where no alleged speed is given it is understood to be above the legal limit.

SOME familiar names appear in our list of furious driving cases this week.

In the course of the case against Mr. E. Campbell Muir, at Kingston, an altercation occurred between the Chairman of the Bench and Mr. Stapleton Firth. Ultimately matters were smoothed over by the latter gentleman withdrawing unpleasant observations he had made.

AT Chelmsford, Sidney Galley, motor-car driver, of Stamford Hill, pleaded guilty to driving a motor-car at a greater speed than twelve miles an hour between Widford and Ingatstone. The Chairman of the Bench said:—"We have an invariable rule here—we fine everyone £5 and costs. You will have to pay that and 9s. 4d. costs, or in default, you will go to the house of correction for a month."

FRANCIS BIRCHAM, Beech Hill, Woking, was summoned at Kingston for driving his car at an excessive speed in the Portsmouth Road, Thames Ditton, on the 22nd ult. P.C. Mortimer said that the defendant covered a measured quarter of a mile in forty seconds. Defendant asked how the measurement had been taken, and was informed that it was with a chain. He admitted that he could not swear that he was not going over twelve miles an hour. He certainly did not think he was going at twenty-two miles as stated by the constable. The Chairman: Well, to save time, what speed will you plead guilty to? Defendant: I scarcely know. Eventually, as the offence was committed on a straight and clear road, the mitigated penalty of £2 including costs was imposed.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, MARCH 28, 1903.

[No. 212.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

NOW that the Exhibition of 1903 is closing the trade will settle down to deal with the orders received, and in many offices matters are straightening out for a busy season. To-day (Saturday) the great Show of 1903 will end, and the Agricultural Hall, which has been brilliant every evening with electric light and lively all the week with throngs of visitors, will soon resume its normal condition. Doubtless there will be a rush of visitors on the last day—the only opportunity now remaining for seeing this most comprehensive automobile display.

A Point for Drivers.

The paper by Mr. Kenneth Campbell, which we published recently, inaugurated a correspondence somewhat similar to that which ran through our columns in the early days of the *Journal*. We suppose the question of the annual upkeep of motor cars will be one of perennial interest, as it is of considerable importance to all automobilists. One point, however, is deserving of very serious attention, and that is the wages and emoluments which are paid to motor-car drivers employed by private owners. There is really no standard by which at present to judge as to what is the proper rate, and here the law of supply and demand must necessarily hold the key of the position for some time to come. At the present Exhibition several coachmen have been observed amongst the visitors prying over the chassis and the internal arrangements of motor-cars with a curiosity that would lead us to suspect they were desirous of becoming as well acquainted with the mechanically propelled vehicle as they are with the antics and the vagaries of the ordinary horse. It is evident that the average London man owning motor-cars prefers the coachman to the mechanic, the former invariably taking greater pride and care in the appearance of his vehicle. This is a point that mechanics and drivers should take note of, if they want to enjoy some of the good places that are opening up by the popularity of motoring among the aristocracy.

The Lords and the Race.

THE Light Locomotives (Ireland) Bill has again been the subject of discussion in the House of Lords, having passed through the committee stage last week. The Marquis of Granby had put down an amendment which would have had the effect of giving the County Councils the power to suspend traffic only on the main roads under their control. He thought that great inconvenience would result if the County Councils closed private roads as well; but upon representations being made to his lordship as to the dangers that might be caused if these by-roads were not closed, he consented to withdraw the suggestion. Lord Londonderry also had an amendment on the paper to transfer the power to make provision for temporary suspension and regulation of the traffic from the County Councils to the Local Government Board for Ireland. This amendment, which centralises control, is so obviously reasonable that it secured unanimous adoption in the House.

The Course.

Now that the Legalising Bill has passed through the Lords—that stage having been reached on Tuesday—interest in the Gordon Bennett race is transferred from Westminster to Ireland.

The course has just been shortened to 102½ miles (three and a half times round) and the contest will probably commence near Old Kilcullen at 7 a.m. on the morning of July 2nd. Everyone who has gone over the route seems well satisfied with the prospect, especially as some winding stretches have been eliminated and a deviation made from the original course by which Naas and Newbridge will be omitted from the itinerary. Controls will probably be established at Kildare, Carlow, Athy and Castledermot. The course includes about 250 miles of straight roads in stretches of 8 to 10 miles—and about 100 miles of “curly.” Some of the sharp corners are being removed, and two bridges are being levelled off so as to minimise the dangers. Messrs. Edge and Jarrott having been selected as two of the British champions, it only remains to be said that in the Eliminating contest Count Zborowski will drive a Napier car against the Star car which has just taken its first spin on the road.

The Napier Racer.

WE are this week able to give a few brief particulars of the racing car which Mr. S. F. Edge will drive in the race. The vehicle is very much on the lines of last year's winner; it is fitted with a four-cylinder engine said to develop 30-h.p. The ordinary high-tension system of ignition is employed, while the governor is adapted to act on the throttle. The water circulation is maintained by a friction-driven pump and Clarkson radiators. Four speeds forward and reverse motion are provided, the power on the top speed being transmitted direct, no secondary gear wheels whatever being in motion. Like last year's racer, the new car is provided with a live axle, power being transmitted from the gear box through a longitudinal universally-jointed shaft and bevel gearing. The frame is built of steel and wood, and the racing car complete weighs 17½ cwt. The road wheels are of equal size, 34 inches diameter, and shod with 90 mm. tyres, the wheel base being 7 ft. 10 in.

The Manchester Club.

LAST week the Manchester Automobile Club held its third annual dinner, about eighty gentlemen being present. Mr. F. Smith, President of the Club, presided, and among those who apologised for absence were the Duke of Westminster and Mr. Arthur Balfour. In the course of a speech, in proposing the toast of “Automobilism,” Mr. Smith mentioned that the Club now had a membership of 150, and he was glad to see that Mr. Galloway, upon whom they had recently passed a vote of censure, had ordered a motor-car. It was suggested that they should let bygones be bygones. Motorists were not wilful breakers of the law, but they naturally considered that the twelve miles an hour limit was absurd and ridiculous. They did not wish to monopolise the highway. Even the wagoner who was invariably found on the wrong side of the road, and the driver of the hooded van, who sat where he could not see either

to the left or right or behind him, should have consideration. The speakers included Mr. A. F. Bird, of Birmingham, Mr. G. Milner, Alderman Rudman, Mr. Henry Edmunds, and Col. Dickson, chairman of the Cheshire County Council. The latter gentleman expressed his sympathy with automobilists in their desire for the speed limit to be done away with. In time he thought separate tracks might be provided for the use of automobilists.

A Gloucester Automobile Club.

At a representative meeting held at the Queen's Hotel, Cheltenham, on Monday, the 16th inst., a motor club was formed for the county of Gloucester, with Cheltenham as headquarters, under the title of "The Cheltenham and County of Gloucester Automobile Club." The Club has a very promising outlook, there being a large number of motorists in the county. Full particulars can be obtained from the secretary, Mr. H. Dyer, Juniper Cottage, St. Marks, Cheltenham.



"In Heaven's name, Policeman, come and bring my husband from the public-house."
 "Go away, you silly woman. Don't you see a motor-car approaching without a number?"
(Das Schnauferl, Munich.)

Control of the Highways.

THE President of the Local Government Board has just appointed a Departmental Committee to inquire into the general condition and sufficiency of the roads of England and Wales. This is asked to report whether any, and if so, what, amendment of the law relating to these matters or its administration is desirable in view of the various purposes for which the roads now are, or shortly may be, utilised, and particularly whether any change of the authorities who have control over the roads or of their powers is required. Among those on the committee are the Hon. A. Stanley, M.P., the Hon. J. Scott-Montagu, M.P., Mr. W. J. Bull, M.P., Mr. E. R. Pickmere (Town Clerk of Liverpool), Mr. G. C. Kent (Town Clerk of Longton), and Mr. S. Woodbridge (Clerk to the Brentford Urban District Council). Mr. R. G. Duff, of the Local Government Board, will act as secretary to the committee, the deliberations of which will be awaited with considerable interest by motorists.

"B. P." goes a-motoring.

THE other day Major-General Baden-Powell took a trip in Mr. Frederick Harrison's 12-h.p. car, travelling from London to Aldershot via Staines and Bagshot. On the return they proceeded by way of the Hog's Back to Guildford, and thence to Putney. A halt was made on the bridge to see the practice of the University crews in the boat race. This was the first motor-car ride the General has had since his return from South Africa.

Tare Limit of Motor Wagons.

THE Association of Chambers of Commerce has adopted a resolution "that in order to meet the urgent wants of the commercial, trading, and agricultural communities of the country in the matter of facilitating the carriage of merchandise and agricultural produce in motor-wagons, the tare limit now fixed for such vehicles should be raised without delay; and, further, owing to the importance of the interests concerned, this Association recommends that a deputation should be appointed to wait upon the President of the Local Government Board with a request that he will take the steps necessary to give effect to the recommendations contained in the first part of this resolution."

A Dismissal in Sussex.

AT length the magistrates of Arundel have seen fit to dismiss a charge of alleged furious driving against an automobilist, and a severe cross-examination by Mr. Staplee Firth was a strong contributory factor in the result. The police had measured a distance of one third of a mile, and with the aid of stop watches had formed their conclusions as to the actual speed at which the motorist was travelling. A driver of a horse who saw the car travelling through the town expressed the opinion that it had covered the measured distance in two or three seconds. Mr. Firth seized upon the point with his usual legal celerity, and having bound the witness to his statement as to covering the distance in three seconds, gravely calculated, for the benefit of the court, that this worked out to about 400 miles an hour. No wonder the chairman of the Bench remarked that there was some difficulty in deciding in this instance, as the police had only estimated the speed at 18 or 19 miles an hour, and when their witnesses came forward to make such alarming declarations the only course that remained for the Bench was to dismiss the case—a result upon which Mr. Firth is to be congratulated.

Novelists and the Motor-Car.

THE value of automobilism in freshening jaded nerves and reviving dull memories has been frequently urged by leading literary men. Among doctors Sir Henry Thompson has advised the motor-car as an aid to good health. Mr. Rudyard Kipling is a devotee of the automobile, Mr. J. M. Barrie is a recent convert, and now comes the news that Sir Arthur Conan Doyle has become the owner of a Wolseley car. Only a few days ago Mr. Rider Haggard reiterated his belief in the value of the automobile to the agricultural industry, and Mrs. Edward Kennard has frequently testified in our columns to the welcome change from other sports that automobilism provides.

The Speed Limit.

THE Northamptonshire County Council has again been discussing the subject of motor cars, and upon the resolution of its Finance Committee has agreed that the attention of the president of the Local Government Board should be drawn to the speed at which automobiles are driven. They suggest that the limits as to speed should be removed, that identification should be provided for by day and by night, and that the limit of penalties for breach of the law should be raised. In the

course of the discussion, Earl Spencer thought that the present limit of speed could not be enforced, and the fact that the motor was driven furiously and at a dangerous pace was the principal element to be considered. If a practical and suitable scheme of identification could be provided it would be an advantage, but he expressed a doubt whether they could identify cars which belonged to any part of the country. Ultimately the resolution was adopted, with the addition that the penalty for breaches of the law should be increased, and that there should be "alternative imprisonment" with the option of a fine. Evidently some members of the Northamptonshire Council have been taking the hint given by Earl Russell in our recent interview, and imprisonment may yet be added to the other delights associated with automobilism.

In the Peak District.

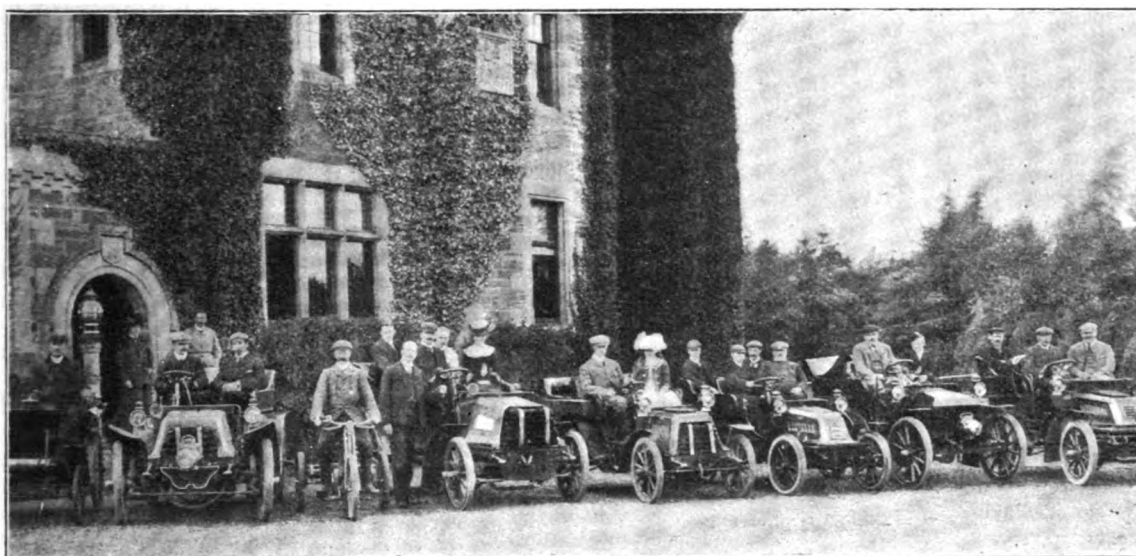
NOT the least important advantage rightly claimed for the motor-car is that it will relieve horses of many of their burdens. We have often watched animals straining every muscle to draw a heavy load up an incline, and their sufferings were plainly apparent. In many holiday-making

Motor Ambulances.

It is reported that the Metropolitan Asylums Board will shortly have a motor ambulance for the conveyance of fever patients. There ought to be little difficulty in developing the idea beyond fever patients and in installing similar machines at all the ambulance stations. Horses are too expensive to keep standing in connection with ambulance work, but the provision of motors for the purpose will prove an economical and serviceable innovation that should be carried out without difficulty or great expense.

A Daimler Dinner.

A DINNER was given by the Chairman and Directors of the Daimler Motor Company at the Trocadero Restaurant, London, to a large and representative gathering of the Company's agents on Tuesday evening. An excellent dinner was followed by an interesting programme. In the unavoidable absence of the chairman of the company, Sir Edward Jenkinson, the chair was occupied by Captain Longridge, who, with Mr. Ernest Instone, the manager of the company, was able to hold out a flattering prospect for prompt deliveries of 1903 cars.



(photo by) The Meeting of the Eastern Section of the Scottish A.C. at the Home of the Rt. Hon. Sir J. H. A. Macdonald, K.C.B. (Mrs. Norman D. Macdonald.

districts, too, such hardships have to be borne by horses, and hence we welcome anything that leads to the substitution of the automobile for the horse in such places. Recently a conference of the local authorities of the Peak district was held at Bakewell, when it was decided to propose a scheme of uniform bye-laws for the whole of the district, and so prevent the overloading of animals, which has, unfortunately, been a feature of the excursion traffic of the locality. Why not go further and suggest the encouragement of motor-car services?

Automobile Nescience.

IN making inquiries as to the different varieties of motor-cars many of our correspondents display a nescience that is almost amusing. The other day a correspondent in the Midlands wrote saying he wanted a motor-car to cost not more than £70, and which could be run at a weekly expense of not more than 7s. or 8s. including depreciation through wear and tear. He wanted to run about 2,000 miles per annum in ordinary daily work, supplemented by 500 miles during the summer holiday. Having regard to the expense associated with the horse and carriage, such queries occasion much amusement.

Mr. Mecredy gave a most amusing account of his experience in connection with the preparations for the Gordon Bennett Cup Race, and promised the warmest of welcomes to all who should cross the Channel to view that historic contest. The keynote of a most pleasant evening's entertainment was one of harmony and friendliness, together with anticipation of the increased prosperity of all connected with this leading firm. A number of faces well known in the motor-car industry were to be noticed among the company.

In New Zealand.

ALREADY the British Colonies are beginning to appreciate the advent of the motor-car, and the first cars to arrive to the order of the New Zealand Motor Company, Limited, of Wellington, were received lately. Their appearance in the streets naturally drew the public gaze, and the company's depot was besieged by spectators, who showed an eagerness to see, if not to buy. One of the first members of the New Zealand Parliament to become a motorist is Mr. Barber, member for Newtown. He should form the nucleus of a strong Colonial Automobile Party.

BIG GAME HUNTING IN THE ROCKIES.

By W. S. MONTGOMERY.

SHOULD hunting big game in an automobile ever become popular Mr. W. W. Price, of Colorado Springs, may justly claim to be the pioneer in that kind of sport. Quite recently, accompanied by Dr. C. E. Smith, he took his Winton touring car from Colorado Springs to Meeker, Col., via Ute Pass, South Park, Buena Vista, Leadville, Red Cliff, Glenwood Springs and Newcastle, where they picked up Mr. Lewis Lindahl, of Denver. From Newcastle the journey was continued to Rifle, and thence over the old stage road to Meeker, where the writer became connected with the trip.

Several days were pleasantly occupied in hunting deer in the "Flat Top" country, the party afterwards returning to Thirteen Mile Creek, making headquarters for three days at one of the cow camps. The deer were crossing in large numbers just at that time, and the hunters succeeded, without much difficulty, in getting plenty of game. As the party was bowling rapidly along a few miles out of Meeker, a band of deer attempted to cross the road ahead of the touring car. Mr. Lindahl, who was at the wheel at the time, put on more speed to head them off, and as pretty a race ensued as one could wish to see. The deer seemed determined to cross ahead of the machine, but the pace was much faster than they had calculated upon. They turned slightly and ran with the car for a considerable distance, and then, evidently much surprised, stopped and looked on in amazement as the car sped by. They were within easy gunshot, but, of course, none of the party thought of molesting them.

Had an air-ship dropped down in their midst, the astonishment of the natives could not have been greater. No automobile had ever been seen on either the Grand or White rivers before, and there were those who evidently had never heard of a horseless carriage. Upon entering a small town, the car was instantly surrounded by a great crowd of curious people, who plied us with so many questions that we were glad to pull out for the next village.

Starting on the homeward journey, with four of us and two saddles of venison on the car, we left the ranch at Thirteen Mile Creek at three o'clock in the afternoon, and arrived at Rifle shortly after five. The road was in excellent condition. From the top of the hill to Grand River is a slight grade, enabling us to coast most of the way. The road between Newcastle and Glenwood is extremely difficult, especially on a dark night. We wended our way up and down grades that seemed almost perpendicular. Because of the narrow winding roads in the cañon it was impossible to see more than a dozen feet ahead of the car. Luckily we did not meet any teams; for if we had, one or the other would have been compelled to back out of the cañon, as there was no room to pass.

The attractions at Glenwood Springs were so alluring that it was not until the afternoon of the following day that we left there. As we slowly picked our way over the half finished State road through the Grand River cañon, we all agreed it was the most interesting part of the journey. There are those (and the writer is one of them) who pronounce the Grand River cañon the most beautiful in Colorado. It cannot, however, be appreciated to the fullest extent in passing through by rail. For miles the chasm is cut through layers of limestone of more or less regularity, the perpendicular walls being brilliantly coloured from the effects

of iron and other mineral stains. At times the walls appear to come together and further progress seems impossible, but, by the expenditure of much money and nitro-glycerine, the new State road has been blasted out, and may some day be fairly passable for other vehicles than a petrol motor-car. A considerable portion of the road has not yet been surfaced with earth, and the sharp edges of rock were especially trying to the tyres, but fortunately no punctures or other mishaps occurred, although several times the rear wheels spun round, skidding towards the edge at the same time.

There were not more than a dozen places in the whole canon where teams could be passed. Only one was encountered, and this happened to be near one of these places. The driver had to unhitch and lead the horses by, we taking the outer edge of the road, as we were not afraid of our horses jumping off.

Passing through an extinct volcano district, we were soon in Wolcott. The run up the Eagle, through the town of Eagle to Minturn, was quickly made. The roads were excellent, and the morning air, while bracing, was not too cold for comfort. And then came one of the most difficult parts of the trip, up over Battle Mountain. So steep was the gradient that we all had to get out and walk, with the exception of Mr. Price, who was driving. We took a straight cut up the mountain side, arriving

at the summit some time before the car, which had to follow the zig-zag trail. One can form some idea of the fearful gradient the Winton car went up, when it is mentioned that the rugs and some of the other loose articles lying on the tonneau floor slid out over the rear door.

Passing through Gilman and down into Red Cliff, the slopes were very steep and there was always the danger of meeting teams as we rounded the dangerous curves. To avoid accident, one of the party usually ran ahead, and thus, while our progress was necessarily slow, it was without mishap. Above Red Cliff the wagon road follows the abandoned narrow gauge railroad track. And then came the ascent of Tennessee Pass, the great Continental Divide, where was gained an altitude of 11,500 feet, the highest point of the trip. The water that drains off on one side flows into the Pacific, and on the other into the Gulf of Mexico.

We intended making the trip through from Leadville to Colorado Springs, 160 miles, the next day. The run was made in excellent time to Granite and Buena Vista, over Buena Vista Pass and across South Park to Hartzell, where we arrived in the middle of the afternoon, in ample time to reach the Springs that evening, if all went well. As we were leaving Hartzell one of the rear tyres, the covering of which had been threatening to go to pieces for several days, collapsed completely. It took an hour to replace it, and in the meantime snow began, and the wind blew furiously from the east. A blizzard was upon us, and we were compelled to return to Hartzell for the night. An early start was made next morning, and shortly after noon we were at home in the Springs. About 750 miles were covered, mostly over mountain passes and through almost impregnable canons, at an average running speed of fourteen miles an hour. It proved that hunting big game in the Rockies may be done in an automobile. Although it may be a precarious undertaking, there is just enough excitement about it to make it a real pleasure for most men.

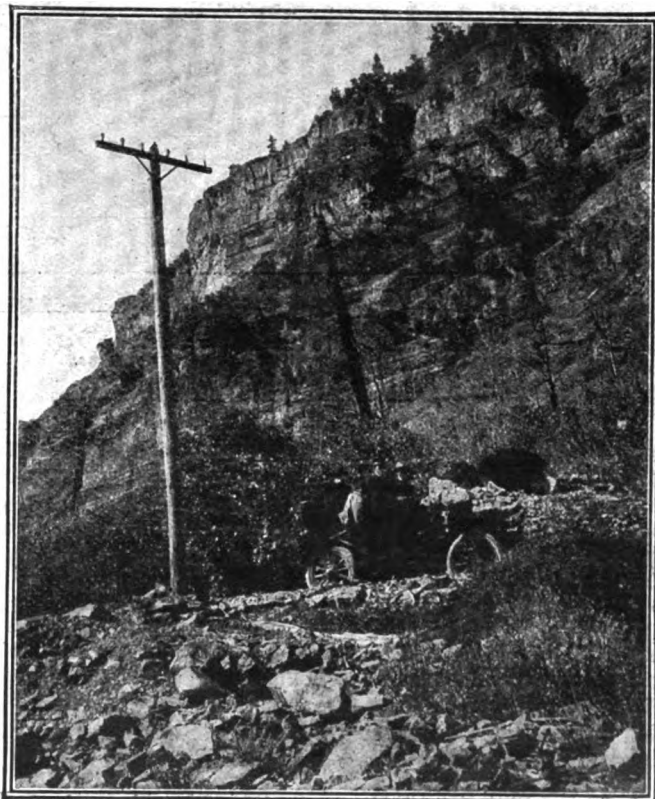
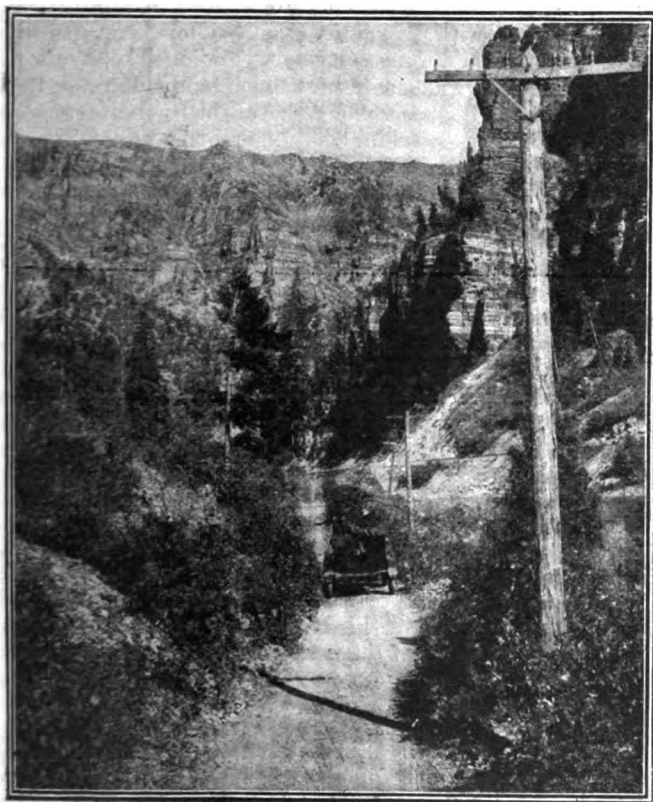
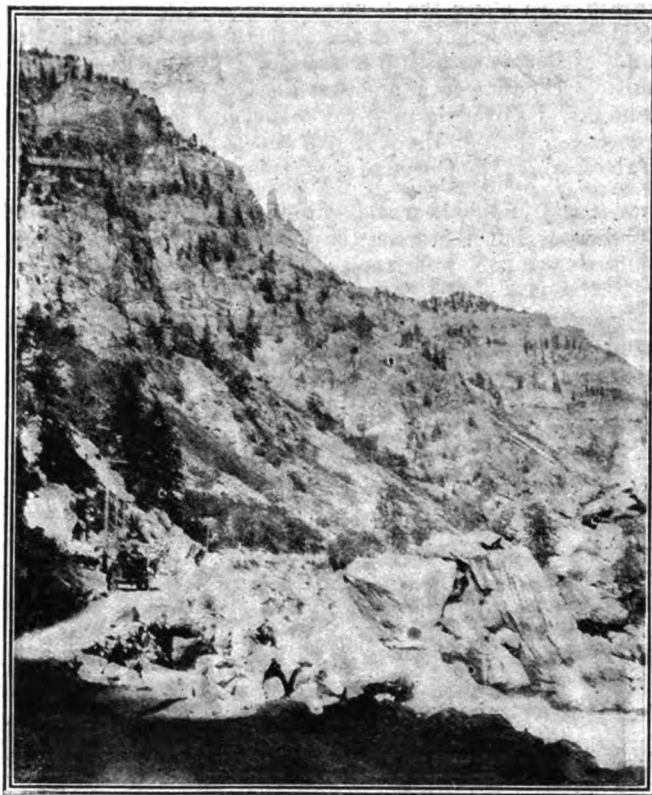
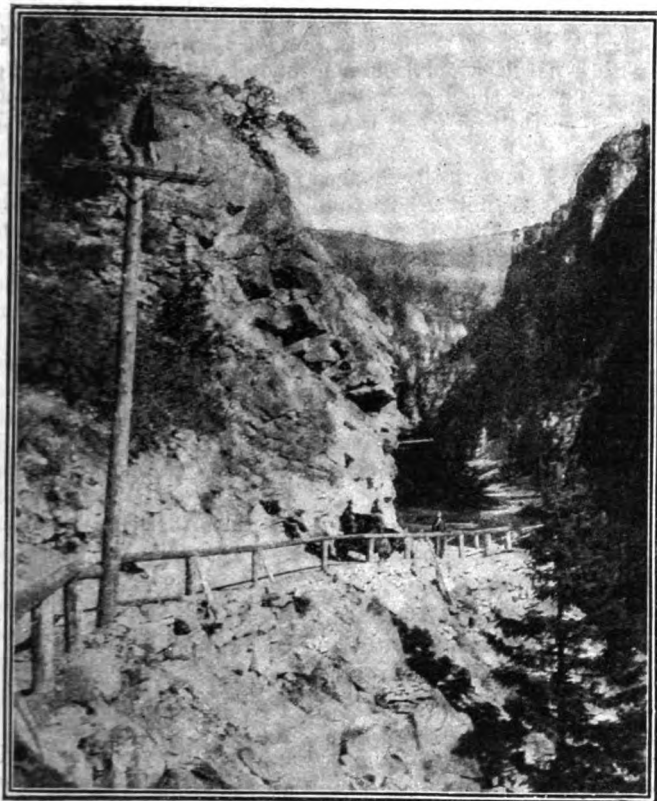
PRINCE LOUIS OF BATTENBERG has ordered a motor-car from the Wolseley Co. which has four orders in hand for the 50-h.p. racing cars now building for this year's races.



The Spoils of the Chase.

Big Game Hunting in the Rockies.

(SEE OPPOSITE PAGE.)



Snapshots of a Winton Car among the Mountains.

CONTINENTAL NOTES.

BY "AUTOMAN."

MID-LENT Thursday is a general holiday in Paris, when King Carnival takes possession of the city, stopping the traffic, bringing out the sightseers, and giving occupation to hundreds of poor people by the sale of confetti which, by night time, constitutes a multi-coloured carpet three or four inches deep along the boulevards from side to side for miles. Mid-Lent is the holiday of the washerwomen and of the markets, and each great institution selects a Queen, the united committees choosing from amongst the Queens a Queen of Queens, who presides over the carnival. The chief feature of the fete is a procession through the principal streets and a visit to the Elysee Palace, where the Queen of Queens is received by the President.

THE triumphal cars have from time immemorial been drawn by horses, but this year the Queen of Queens dispensed with animal traction, and replaced it by a self-propelled vehicle.



The Mi-Careme Carnival—The Car of the Queen of Queens.

Strange to say, this year's Queens of Queens is employed in a *boucherie hippophage*. I will not offend the delicate tastes of the readers of the *Journal* by translating this technical term, but will leave it to their imaginations. Fate, however, played a spiteful trick on automobilism, and on the sovereign lady, for the electric car which was provided to carry her in triumph was a victim to *la facheuse panne*, and had to be ignominiously pushed by the assistants and finally dragged by a friendly petrol car.

AMONGST the visits made by the Queen of Queens was one to the A.C.F., where there was a reception in her honour. A great many members gathered in and about the club at the hour of her promised visit, but it was not until nearly two hours later that the triumphal car turned the corner of the Rue Royale and drew up before the Hôtel Pastoret.

AT the 1901 Paris Salon there was in the side gallery a little stand with one car on it, the invention of M. Megy. I gave in

these columns a description of this ingenious car, with its automatic change of speed gear. The other day I was invited to inspect the car in operation, and the results were so interesting that no excuse is necessary for referring to them here. Let us suppose, then, that we are about to take a run in the Megy car, that the motor has been started, and the driver has taken his seat behind the steering wheel, which is the only piece of mechanism in view, there being no change-speed levers or pedals of any description whatever except a foot brake, which is never used, but which the law requires. There is, however, a dial on the dash-board with a needle which points to one of four speeds. In order to start the car, the driver presses the steering wheel forward, and off we go on the first speed. As soon, however, as the motor begins to race, we hear a click and the needle on the dial shows that we have automatically changed on to the second speed; again the motor races, another click, and we are on our third, and then on our fourth. By this time we have reached a steep hill, and the motor begins to slow down, when—click—we are on our third; the hill gets steeper, the motor begins to slow down more; in goes the second speed, and afterwards the first. Once on the brow of the hill the speeds go in automatically again. As we are going down hill, however, and do not desire to go too quickly, the driver pulls the steering wheel towards himself and brings in gear the speed he requires, the needle always indicating it. Half-way down the hill we come to a restive horse, a rare thing to find in France, the driver considers it wise to stop, and has only to pull the steering wheel a little further, which puts on the brake. The restive horse, however, will not face the motor-car, and the driver pulls the steering wheel again, when the car backs up the hill. After seeing these wonderful evolutions, and to convince myself, I asked if I might take the steering wheel. Consent having been given, I took the helm and went some miles up and down hill, backwards and forwards, with the greatest facility.

THE operation of the automatic change-speed gear is not very complicated, and is worked by the well-known "servo-motor" movement. Each of the speed gears is always in mesh with its corresponding pinion on the driving shaft, but a clutch on the "Megy" principle makes any one of the four speed pinions solid with its shafts. These clutches are worked by a governor and a double ratchet, with which the "servo-motor" engages whenever the speed of the motor rises much above or much below the normal. An increase of speed engages one ratchet, and a decrease the other, and so regulates the position of a shaft, which actuates successively the four clutches, working the different speeds. The steering wheel when pushed forward engages the main clutch, and when pulled backward brings the reverse motion into gear. The car is very crude in construction, but an up-to-date model is being made, with a two or four-cylinder vertical motor placed in front with all the latest features of the 1903 automobile.

ON the occasion of the Automobile Congress which the A.C.F. is organising there will be three gala days. The French Club has voted a sum of £2,000 for the purpose. The fêtes will include a gala performance at the Opera, which has been hired exclusively by the Club; a dinner for 200 people in the theatre belonging to the A.C.F. at the Place de la Concorde, and a monster excursion to the forest of Fontainebleau. It is a programme worthy of the A.C.F.

THE latest news from Cannstatt is that none of the 90-h.p. Mercedes racers will take part in the Nice Week. The fleet of 90-h.p. cars are being reserved for Paris-Madrid, and will be driven by Count Zborowski, Baron Forest, and M. Degrais. At Nice there will be six of the new 60-h.p. cars, driven respectively by Baron de Caters, and Messrs. Degrais, Werner, Max, Hieronymous, and Gasteaux.

THE following item of news in last Sunday's *Velo* is, I think, worthy of reproduction in the original:—"L'Automobile Club d'Angleterre tient actuellement son Exposition à Londres, et les sportsmen et chauffeurs anglais ont insisté si fortement auprès

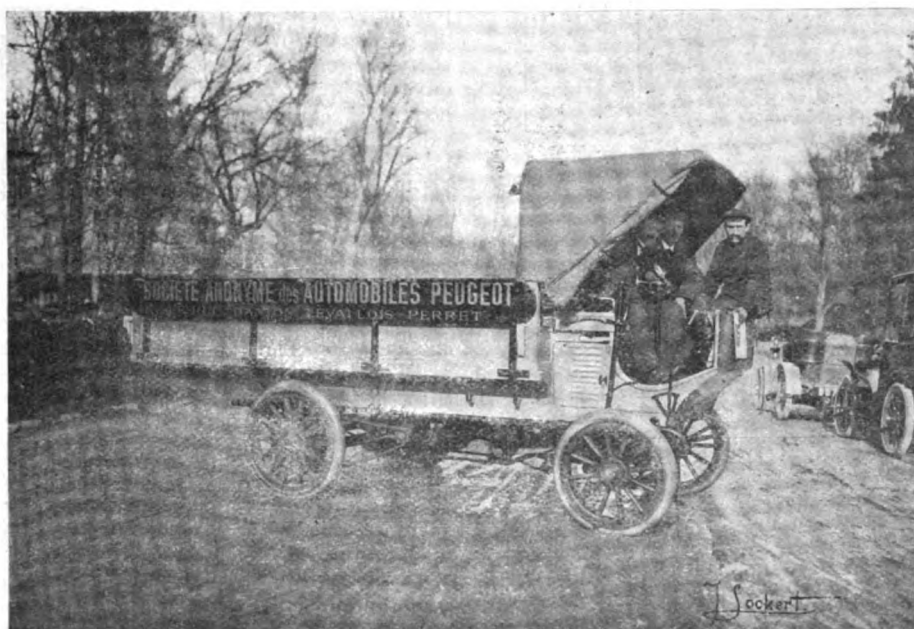
du commissaire général, que celui-ci a demandé à la maison Charron, Girardot et Voigt de vouloir bien lui envoyer la nouvelle voiture 40 chevaux huit cylindres, qui s'est révélée comme le dernier mot de la perfection. M. Voigt est parti par la route pour Londres, où il présentera le nouveau modèle aux amateurs."

At the meeting of the *Chambre Syndicale du Cycle et de l'Automobile* in Paris last week a resolution was adopted protesting against the way the Sporting Committee of the A.C.F. has selected the French team to compete for the Gordon Bennett Cup.

ON July 19th there will be a motor-car race in France organised by the *Chambre Syndicale de l'Automobile*. It is to be called the "Circuit de l'Argonne," and it will take place in the east of France, between Sedan and Vouziers, on a circular course where there will be absolutely no neutralised ground. There will be two distinct sets of classifications—the one being the familiar classification by weight, divided into the usual four categories of 50, 400, 650, and 1,000 kilos, and the second will be an entirely new classification, namely, by the cubical contents of the cylinders. For this class

soon have to be established to which reference can be made. All automobilists know the weight of the decisions of the A.C.F. or the A.C.G.B.I., and they probably are aware that the A.G.A. are putting up danger signals all over France on the roads. Some few who are international know of the D.A.C. or the A.C.B., the A.C.S. or the O.A.C., but when it comes to the local clubs in France, such as the A.C.N., or the C.A.O., matters become a little more complicated, whereas if we leave the automobile and go on to the bicycle, we find ourselves lost in contemplation of the meaning of U.S.F.S.A. and F.C.A.F., only to cite one-hundredth part of the clubs and associations.

A PARISIAN electrical engineer—M. E. Zay—has lately introduced a new circuit interrupter plug, so designed that only the driver of a motor-car or the rider of a motor-cycle may complete the ignition circuit. As is well known, a small piece of brass is frequently used for this purpose, but now that motor-cars and cycles are becoming so numerous greater care is necessary to prevent one's possessions being stolen when left unattended. The new interrupter is made on the principle of the combination letter lock, with which all are familiar. The female part of the interrupter is of special construction to correspond with the plug,



The Peugeot Petrol Lorry—The Winner of the Industrial Section (over 1 ton) of the "Poule des Vainqueurs" (See last issue).

[Le Chauffeur.

the competing cars will be divided into five groups, namely, $1\frac{1}{2}$ litres, $2\frac{1}{2}$ litres, $3\frac{1}{2}$ litres, 5 litres, and 7 litres. All the competing cars must have four wheels and two seats side by side. The entrance fees will be—for the 50 kilo. vehicles, 100 francs; for the 400, 200 francs; for the 650, 300 francs; and for the 1,000 kilos, 400 francs; whilst the five subdivisions of the second category will have to pay 200 francs each for the $1\frac{1}{2}$ and $2\frac{1}{2}$ litre cars, and 300 francs for the others. Entries with a single fee close June 15th, and with a double fee July 11th, and the entries received on or before April 16th will have the advantage of balloting for starting-places; the rest will start in their turns. Entries should be addressed to the treasurer, M. Lemoine, 21, Rue de Lappe, Paris.

In one of the principal music-halls in Paris, in what is entitled the *revue*—that is to say, a sort of pantomime, where local and national events of the day are made fun of and pass in review before the spectator—a great deal of merriment is made out of the letters representing the names of the legions of sporting clubs which are now becoming so common all over the world, owing chiefly to the bicycle and automobile trades. Indeed, it is getting so confusing nowadays that a special directory will

the latter consisting of four discs on a central stem. The discs can be rotated, and bear on their periphery a series of letters. A great variety of combinations can be made, but the circuit cannot be completed until the discs are set in such a position as to give the proper combination of four letters, known only to the owner.

MESSRS. SCAIFE AND PEARSON are opening the City and County Garage, at 13, Stonegate, York.

SOME M.P.'s are urging upon their colleagues that they may do a good turn to British industry by supporting the adoption of benzol in place of petrol for the propulsion of motor-cars.

THE Hozier Engineering Company, Limited, have added considerably to their machine tool plant in order to give a reasonably early delivery to purchasers at the Motor Car Exhibition at the Agricultural Hall, London.

THE Imperial Motor and Cycle Repairing Works at Lyndhurst are erecting a new garage, the only one in the neighbourhood, and are undertaking the purchase and sale of cars. They have recently had lamps put up at the important cross roads in the district lighting motorists to their works.

MOTOR-CYCLING NEWS.

THE motor-cycle club which has just been formed in Paris is to be known as La Société d'Encouragement du Moto-cycle.

AMONG the races at the meeting to be held on the Putney track on Easter Monday is a five miles scratch motor-bicycle race. Machines with engines up to 3-h.p. will be allowed to compete.

WITH reference to the decision of the Sussex centre of the National Cyclists' Union as to motor-racing given in last week's issue we would point out that the result of the deliberations was arrived at in error. All motor-racing is in the hands of the Automobile Club, who will appoint handicappers for all contests.

THE annual meeting of the Motor Cycle Union of Ireland (Dublin centre) will be held in the Red Bank, D'Olier Street, Dublin, on the 7th prox. Mr. M. A. Wheeler will propose, and Mr. J. B. Dunlop will second, a resolution making the fees for membership of the Motor Cycle Union of Ireland as follows:— Entrance fee, 10s.; annual subscription, 10s.



Filling up the Petrol Tank.

(Automobil Welt.)

MR. C. H. OLIVERSON writes:—I have noticed the correspondence lately with regard to the efficiency of surface and spray carburettors. I have an Ariel 3 1-8-h.p. tricycle which weighs 3 cwt., and I have done 105 miles with one gallon of petrol. I myself weigh over 1½ cwt. The above is with a surface carburettor which has never yet given the slightest trouble during 11,000 to 12,000 miles. I have also driven a Benz Ideal several thousands of miles with surface carburettor. It has flooded once, but not owing to any fault of the carburettor. I can use up every drop of petrol in the carburettor, and the motor runs over 40 miles, with one gallon, carrying two persons."

A MEETING is to be held in Glasgow on Friday, April 3rd, to consider the question of forming a Glasgow Motor Cycle Club. Owners and prospective owners of motor-cycles are invited to attend.

PRIOR to 1902 the imports and exports of motor-cycles and motor-cycle parts were included in the Board of Trade returns with the figures relating to ordinary cycles. Beginning with 1902 a change was made, motor-cycles being separated from cycles but included with motor-cars, a case of jumping "from the frying pan into the fire," so far as rendering it possible for any one to ascertain the foreign trade that is being done in motor-cycles. With the view of increasing the usefulness of the monthly returns so far as the automobile industry is concerned, we recently addressed a letter to the Board of Trade on the subject, and now publish a copy of the reply received:—

"I am directed by the Board of Trade to acknowledge the

receipt of your letter of the 26th ultimo, suggesting that the imports and exports of motor-cars should be shown separately from those of motor-cycles in the official trade accounts. In reply, I am to state that the form and scope of the accounts to be issued for the present year have for some time been definitely fixed and cannot now be altered, but that your suggestion will be referred to the Departmental Committee for the Revision of the Trade Accounts for consideration at their next annual meeting, which will take place during the autumn."

THE Coventry Chain Company have lately introduced the flexible belt hook for motor-bicycles illustrated herewith. The four



hooks work on a common fulcrum (a bearing having a hardened rivet) when passing over the small pulley. Each hook is in alignment, so that they support one another, and give a direct pull only. The pitch of the hooks coincides with the distance of the copper rivets generally found on V shaped belts. It therefore follows that to fit the hook all that is needed is to drive out two copper rivets from each end of the belt and insert the hook. It requires no driving in, or bending over on the under side. Even though the holes be large ones, it is claimed the hooks keep in place by the belt tension, and will not tear the leather. The belt hook is to be seen at the Motor Car Exhibition.

HEREWITH we illustrate, in section, the new throttle valve for use in connection with the spray-type of carburettor which the E. M. Bowden's Patents Syndicate, Limited, have lately put on the market. The valve is actuated by Bowden wire mechanism and a twist handle, the latter enabling the rider to regulate the throttle to such a nicety that the motor can be cut down to its slowest speed almost instantaneously. The valve can also be actuated by a ratchet or friction lever, but the makers recommend the twist handle, it being more delicate of adjustment, and always in the hand of the rider, so giving complete control. The valve is being made in two patterns. Fig. 1 shows the straight-through pattern, the hollow piston being drawn up by the Bowden wire against the spiral spring inside the throttle, gradually cutting off the area of the induction pipe till quite closed. Fig.

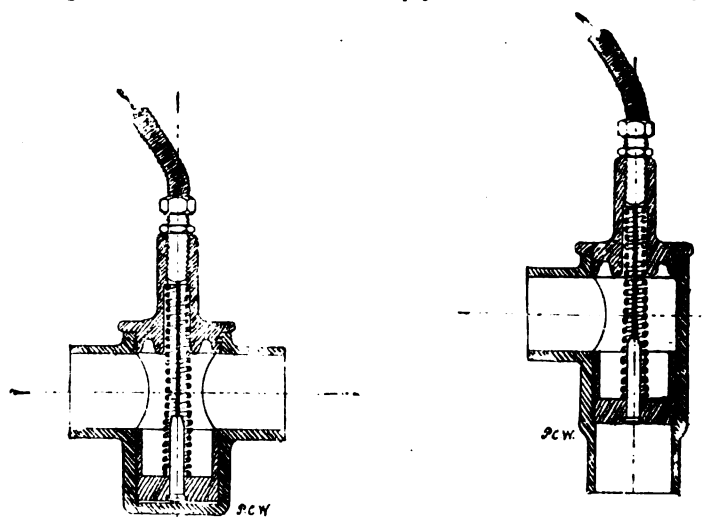


Fig. 1.

Fig. 2.

2 represents the right angle pattern. In this case the gas passes through the hollow piston, which, as in the other type, is drawn up by the wire against the internal spring, so closing the induction pipe.

HERE AND THERE.

MR. J. M. BARRIE is now among the novelists who own motor-vehicles.

THE German Automobile Club is organising a tour from Berlin to Paris for June next.

THE Western Road Carrying Company, of Bristol, has twenty motor vehicles on order.

MR. T. C. AVELING has been elected hon. secretary of the Midland Automobile Club.

THE Standard Motor Company, Limited, has been registered with a capital of £5,000. The office is at 37, Earl Street, Coventry.

MR. B. C. SELLARS, an enthusiastic Manchester motorist, has been placed on the commission of the peace for the county of Lancaster.

THE Triumph Cycle Co., Limited, Coventry, have just issued a handsome new show card illustrating the Triumph cycles and Triumph-Cottareau motor-cars.

THE Calcutta Port Commissioners have agreed that a depot for the storage of petroleum spirit may be established at Moyapur, below Budge Bridge, near the city.

THE British Motor Tyre Syndicate, Limited, has been registered with a capital of £50,000. The registered office is at Northern Assurance Buildings, Albert Square, Manchester.

THE Norwich Corporation have just put in service a steam motor-vehicle designed for dust collecting and street watering purposes. It was built by the Yorkshire Patent Steam Wagon Company, of Leeds.

A MOTOR-CAR service will be run on Friday, Saturday and Sunday during the season from the Savoy and Claridge's Hotels, calling at the Naval and Military Club, Piccadilly, to the Naval and Military River Club, Maidenhead, the fare each way being 5s

THE 40-h.p. 8-cylinder C.G.V. car, to which we referred in our last issue as having been put through its trials at Long-champs, Paris, has been in London this week, it having been on view at the London depot of Messrs. Ewart-Hall, Limited, prior to its despatch to the Agricultural Hall Exhibition on Wednesday.

MR. THOMAS SYLVESTER died at Ashford, on Monday, from the effects of a motor-cycle accident. He was descending a hill on the Canterbury Road when a dog ran across the road and the machine went over the animal. Mr. Sylvester was dashed violently to the ground and death resulted from his injuries.

IN the photograph of the visit of the Eastern Section of the Scottish Automobile Club to Coll-Earn, Auchterarder, N.B., on page 55 Mr. Norman D. Macdonald, the Chairman of the Club, is seen with his hand on the lever of Mr. Stirling's car. His daughter is on the car, with Mr. George Macmillan, the secretary, and his boy, in Highland dress, is with Mr. Cox, of Snaigow.

THE Wolseley Tool and Motor-Car Company, Limited, have received an order from the North-Eastern Railway Company to supply two Wolseley horizontal four-cylinder petrol engines developing about 95-b.h.p. These are to be used in their petrol-electric automotor railway carriages which are to run between the two Hartlepoons and are to replace the existing vertical engines. The performance of these two engines will be watched with great interest by all makers of petrol motors.

THE Earl of Mayo, in the House of Lords, has asked his Majesty's Government, in view of the increasing number of small steam boilers in use in motor-vehicles, lorries, &c., what system of inspection was adopted with regard to these boilers. Lord Wolverton, who replied, said that neither the Board of Trade nor the Local Government Board had power to require an inspection of steam-boilers in automobiles, but in the event of an explosion the Board of Trade had power to order a preliminary inquiry.

THE Lord Lieutenant of Ireland has been motoring in North Wales.

LORD CADOGAN, the Ex-Lieutenant of Ireland, is the owner of a 24-h.p. Napier car.

AT an auction sale to be held at Louth on the 3rd prox., several motor-cars and cycles will be included.

MR. D. E. CAMPBELL has opened the Northern Counties' Automobile Garage in Pilgrim Street, Newcastle.

MESSRS. LORAIN, Barrow, Stead, Gras, and Jarrott will each drive 60-h.p. De Dietrich cars in the Paris-Madrid race.

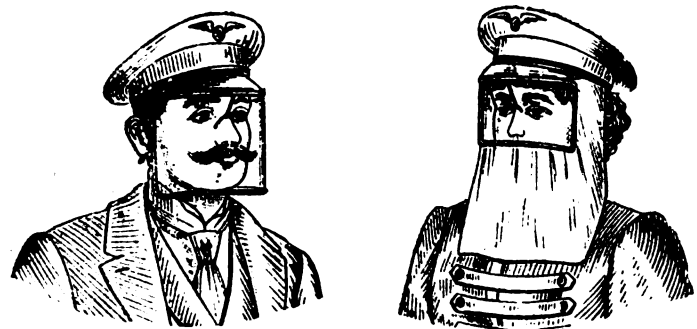
CAPTAIN SHOWERS, Chief Constable of Essex, has employed a motor-car in his visits of enquiry in connection with the mystery of the Moat Farm, Clavering.

To get quickly to a fire which had broken out in a Leamington school during school hours, the fire brigade had their engine drawn by a motor-car instead of horses.

FROM the Packard Motor Car Company, of Warren, Ohio, U.S.A., comes an elaborate catalogue, in which the latest type of Packard 12-h.p. car is exhaustively described.

THE title of Mr. Radford Cooke, the chief clerk to the A.C.G.B.I., is to be the "Assistant Secretary" in future. Mr. F. Straight is the assistant secretary for motor cycling matters.

A GERMAN concern has lately introduced the novel face shields for motorists illustrated herewith, protecting the eyes, nose, and mouth from cutting wind, rain, and dust. It consists of a thin window of mica set in a light aluminium frame, that for



ladies' use being combined with a veil. The shield is held in position by wires extending behind the ears, and a central wire with forked ends to clip the bridge of the nose. The "Mica" face shields can be obtained in this country from Mr. Henry Waterson, of Aston, Birmingham.

SPEAKING at a Romford Cricket Club dinner, Col. Lyon, V.D., alluding to the interest taken by the chairman, Mr. L. Sinclair, M.P., in motoring, said he thought motor-cars would be of great assistance in the defence of the country—a view that has become universal among military authorities.

A NEW garage is about to be opened by Mr. Walter Scott at 109, Goldhurst Terrace, Finchley Road, N.W., with accommodation for forty cars. A stock of petrol, oils, greases, and spare parts for all the well-known makes will be kept, while there are facilities for carrying out all classes of repair work.

THE Hart Accumulator Company, Limited, have just issued a new leaflet, giving particulars of the Hart cells specially manufactured for motor-car ignition work. They can be supplied either singly or in two or three compartment cases, which may be of ebonite or celluloid, and are made in sizes from 9 up to 90 ampere-hour capacity.

THE motor fire engine recently installed at Whitefriars Station, in Carmelite Street, E.C., has been sent back to headquarters for repairs.

MR. WALTER LONG's assurance as to the introduction of motor-car legislation—given to Dr. Farquharson in the House of Commons on Monday—depends on it "being found practicable"—a condition of things which Mr. Arthur Balfour does not consider likely to occur.

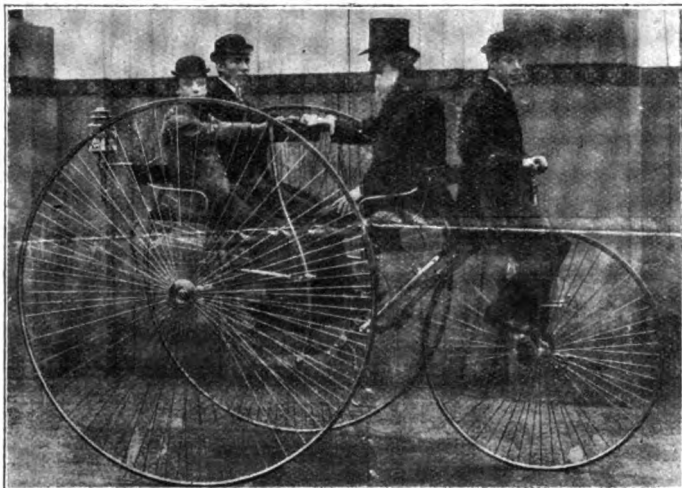
EXHIBITION ECHO.

SUCH an imposing collection of heavy steam vehicles has never before been seen at an Exhibition. That in this branch of the automobile industry England is maintaining its position cannot be questioned. Although most of the firms showing will be full up with orders for some time to come, they have deemed it wise to keep their productions to the front, and the absence of only one builder of such vehicles has been much commented upon.

AMONG the visitors to the Show on the opening day were Sir Francis and Lady Jeune, who, we understand, have placed an order for one of the latest types of 20-h.p. M.M.C. cars.

LE PASSE PARTOUT, lying amid a collection of boxes and packing cases in the yard, presents a woebegone picture, and has caused many amusing comments during the week. Certainly it may be regarded as an "awful example" of fallen greatness, despite the presence at the rear of the vehicle of the Russian official Number 31.

NEVER before has the interest of the Press been so pronounced in an English automobile show. All day on Saturday there was a constant stream of representatives of the leading daily and Sunday journals, while the lengthy reports in the evening papers testified to the position these annual displays have attained in the estimation of those who reflect public opinion.



A Relic of the Pre-Motor Days.

ONE of the features of the Upper Street, Islington, during the Show has been the long string of carriages—both self-propelled and horse drawn, which has been seen on either side of the wide thoroughfare. Every afternoon there has been a large influx of visitors from the West End—a feature of the attendance highly gratifying to the exhibitors.

THE Gallery is now recognised as an important section of the Exhibition, and not only is the display of accessories representative and important, but the collection of cars is equally interesting.

REPRESENTATIVES of some of the firms who were late in applying for space have been seen in the Hall on every day during the Show, and many have taken time by the forelock by intimating their desire to book space for the 1904 Exhibition.

COPIES of the catalogue can be obtained from the office of the *Journal*, 39-40, Shoe Lane, London, E.C., price 6d., post free 1s. To those at a distance who have been unable to visit the Exhibition the catalogue will be useful as giving an idea of the comprehensive nature of the display.

BEYOND the shadow of a doubt the Exhibition will rank among the most successful events held in any country—not excepting France itself. Year by year the official catalogue has, with the number of exhibits and the importance of the Show generally, steadily increased in bulk, and now comprises no fewer than 180 pages.

APPROPRIATELY enough for this year Irish frieze seems to be becoming increasingly popular among motorists, judging by its prominence on the tailors' stands at the Exhibition.

ALTHOUGH the Hans Motor Mower was not ready in time for the Show, demonstrations of its capacity are to be made during the next few days at Lord's, the Oval, Kew Gardens, and one of the metropolitan parks, the latter by permission of the London County Council.

MR. ERNEST OWERS has ordered an 80-h.p. racing car from Messrs. Weller Bros. in anticipation of next year's Gordon Bennett race. A notice to this effect on the firm's stand on Wednesday attracted much attention.

DURING the Show the Post Office has been kept busy with telegrams both inwards and outwards. About four o'clock on Tuesday afternoon one arrived from A. Chase, at Doncaster. He had started from London in the morning and reached the sporting town after a non-stop run of 161 miles on an 8-h.p. single cylinder M.M.C. car—a good feat for a vehicle of that power.

AN event of much interest at the show on Wednesday was the appearance of the new eight-cylinder 40-h.p. C.G.V. car on the stand of the Great Central Garage, Limited. The object of multiplication of cylinders is to produce perfect balance of the engine, noiseless running, and great flexibility of control. The car is not fitted with any mechanical change-speed gear, all variations of speed being obtained by the accelerator. For starting and climbing steep hills at a slow pace two speeds will be fitted in the cars put on the market. The long bonnet covering the eight cylinders gives the car a rakish appearance. At all speeds the engine runs absolutely quietly, and only the noise of the chains can be heard in the running of the car. The vehicle was only on view a few hours prior to its being despatched to Nice, and attracted considerable attention.

AMONG the visitors to the Exhibition on Wednesday were the Lord Chief Justice (Baron Alverstone), Lord Charles Beresford, the Marquis of Londonderry, the Marquis of Ailsa, the Duke of Sutherland, the Duke of Buccleugh, Earl Shrewsbury, Lord Llangattock, Lord Burton, Sir Francis Jeune, Lord Castle-reagh, Lord Lovat, Lord Hastings, Lord Chesterfield, Sir George Newnes, Bart., the Hon. A. Stanley, M.P., the Hon. J. Scott Montagu, M.P., Sir Herbert Ashman, and Sir Swinfen Eady.

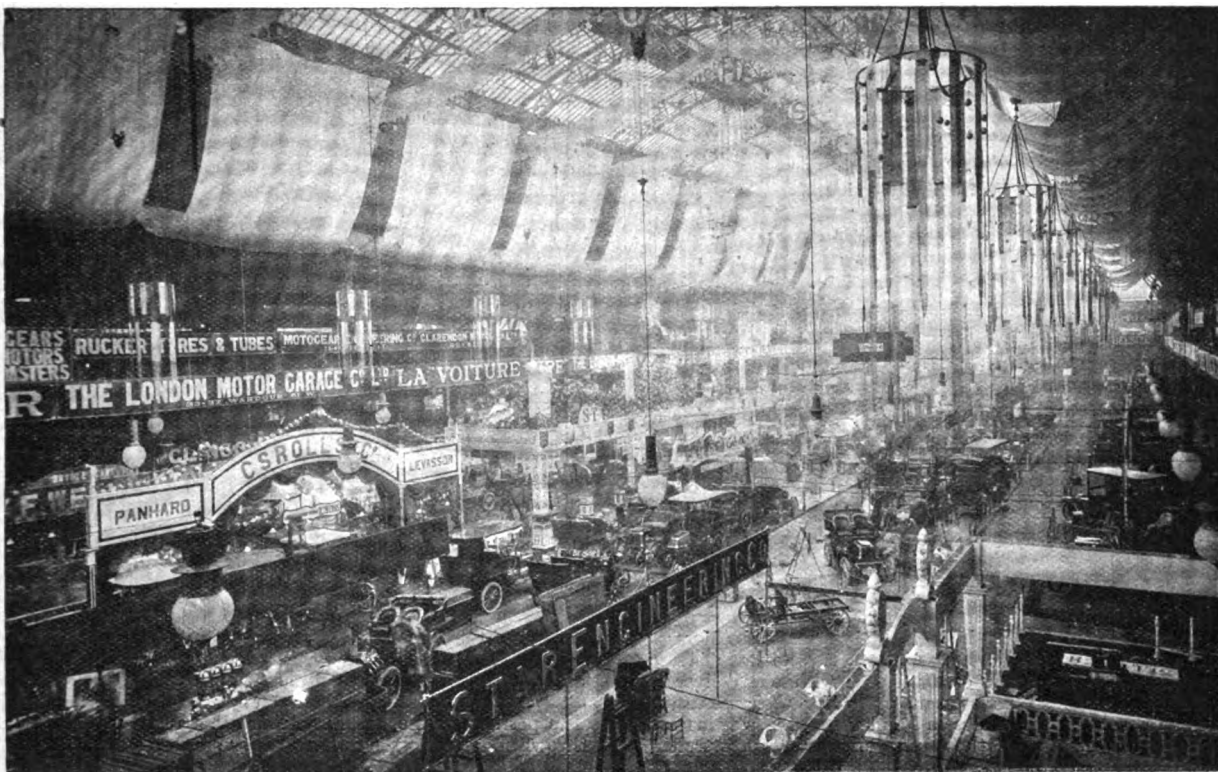
THE ladies present included Princess Henry of Pless, the Marchioness of Londonderry, the Dowager Countess of Shrewsbury, the Countess of Dudley, Lady Sackville West, Lady Rawson, Lady Ella Russell, and Mrs. George Cornwallis West.

TOD SLOAN has been an interested visitor to the Show during the week, Mr. Lewis Waller being among the representatives of the theatrical profession.

ON Wednesday a meeting of makers of heavy motor vehicles was held at the Agricultural Hall, having been convened by Mr. Mann, of the Mann Steam Cart and Wagon Company. Representatives of all the leading firms in the business were present, and considerable discussion took place as to the formation of an association to consider matters of importance to the heavy motor vehicle industry. Ultimately it was agreed to adjourn the subject with a view to further consideration.

The Motor-Car Exhibition at the Agricultural Hall.

(FIRST NOTICE.)



A View of the Great Hall from the Gallery.

BELOW we commence our report of the great Motor-Car Exhibition now in progress at the Agricultural Hall, London—an Exhibition which far exceeds in variety and number of stands any previous display held in this country. It is impossible to conclude our reports on the exhibits in the present *Journal*, and these will be continued in our next issue. The intention is that no novelty shall pass unnoticed, and that the report will present a complete review of the exhibits at the latest and largest Exhibition of 1903. Commencing with the

STEAM CARS.

An example of the "Saracen" steam-car is to be seen on the stand of Mr. J. L. Lardy. It has a neatly-finished *dos-a-dos* body seating four persons. The boiler is of the fire-tube type, 16 in. diameter, while the engine is of the double-acting variety, with simple link motion reversing gear, and develops about 6-h.p. Three brakes, all double-acting, are fitted, the two on the rear wheel hubs being controlled by Bowden wire and independent of the usual differential brake. The throttle, the positive-locking reverse, the bye-pass, independent air and water pumps and water lift (these last three being controlled by a single lever) are all conveniently situated under the driver's hand.

Several types of the well-known Weston steam-cars are displayed by the Weston Motor Syndicate, among which we noticed one fitted with a canopy and a coolie seat at the rear, intended for use in India. To this end the boiler is fitted with a special burner adapted to use paraffin as fuel instead of petrol. Several modifications have been introduced in the 1903 models, including the introduction of a super-heater between the throttle valve and the boiler. This was described and illustrated in one of our recent issues. The cars are now fitted with an automatic lubricating pump and with a steam air-pump. The latter is located below the footboard, and enables the driver to obtain the required air pressure by merely turning on a tap, thus obviating hand pumping.

The details of the 1903 type Gardner-Serpollet cars have already been dealt with in the *Journal*, so that a lengthy description of the exhibits of the Speedwell Motor and Engineering Company, Limited, is unnecessary on the present occasion. The cars staged comprise two of the latest carriages from the French works, one being of the new 10-h.p. type, having a special tonneau body with a detachable brougham top. A 6-h.p. car with *Roi des Belges* body is also shown, this being the first Serpollet steam-car fitted in this way. We noticed that all the tonneau cars are made in such a way that they are entered from the sides without necessitating stepping

into the road. In addition to the foregoing several 6-h.p. cars with tonneau bodies as well as a landaulette for town work are to be seen on this stand.

Interesting is the display of the Albany Manufacturing Company, Ltd., which includes the new steam car illustrated in the *Journal* on February 14th. This has been received with much favour, and we hope to have an early trip to form an opinion as to its actual work. The particular car shown has a tonneau body, and is upholstered in dark green.

Messrs. Savage Bros., Limited, are among the engineering concerns that have lately taken up the construction of heavy steam vehicles. Their wagon, which is now shown to the public for the first time, was fully described in our issue of the 7th inst., to which we refer readers for particulars. The various details of the vehicle appear to have been carefully thought out. It is designed to carry loads of from four to five tons. Messrs. Savage have also on view specimens of their artillery-pattern motor-car wheels, of which they make a speciality.

The Lancashire Steam Motor Company exhibit one of their latest types of 4-ton heavy lorries (Fig. 1), in which a number of detailed improvements have lately been effected. The boiler, which is fitted in the fore-part of the channel steel underframe, is of the fire-tube type, having 80 square feet of heating surface, and designed for a working pressure of 200 lbs. per square inch. It is constructed so that the outside shell can easily be taken off for cleaning purposes. The engine is of the horizontal compound type, having cylinders $3\frac{1}{2}$ in. and $6\frac{1}{2}$ in. diameter by 6 in. stroke. It is fitted with link motion, and large bearings. Both cylinders can be worked with high pressure steam if required, for getting out of bad places. It develops 25-h.p.; is entirely cased in, and runs in oil. Two changes of speed are provided, all the wheels being bolted to turned-up flanges, thus dispensing with all keys. Like the engine, the change gear runs in an oil-tight casing. The company's patent cushion drive is fixed on the ends of the compensating gear shaft, this allowing the engine to run almost a revolution before full power is exerted on the rim of the road wheel, thus considerably reducing the shock that would otherwise be put upon the engine when starting a heavy load. From the countershaft, two roller chains convey the power to the rear road wheels. A clutch arrangement is provided on the compensating gear shaft, by means of which this gear can be locked instantly when required. The joints of the steering gear have large wearing surfaces; the pivoted axles are worked by means of a worm and wheel enclosed in an oil-tight casing. Two band brakes are mounted on the outside of the sprockets. An automatic pump is driven

by an eccentric from the compensating gear shaft; this is fitted with double-check valves to both suction and delivery. There is also a small steam pump for supplying the boiler when the engine is standing, an arrangement being also provided for working this pump by hand when steam is down. The platform is independent of the working parts and main framework of the machine. The road wheels are fitted with weldless steel tyres, 5 in. wide at the rear, and 4 in. at the front. The front and rear axles are

to the boiler by a force pump, and is first passed through a heater and delivered to the boiler at a temperature of about 180° Fahr. The engine is a small compound. Ordinary lamp oil is used as fuel, which is burnt in the fire-box of the boiler by a burner of simple construction; the oil is forced to the burner by compressed air. The engine and boiler appear to be well proportioned and suitable for the work they have to do.

Messrs. T. COULTHARD AND Co., Limited, confine their exhibit to one

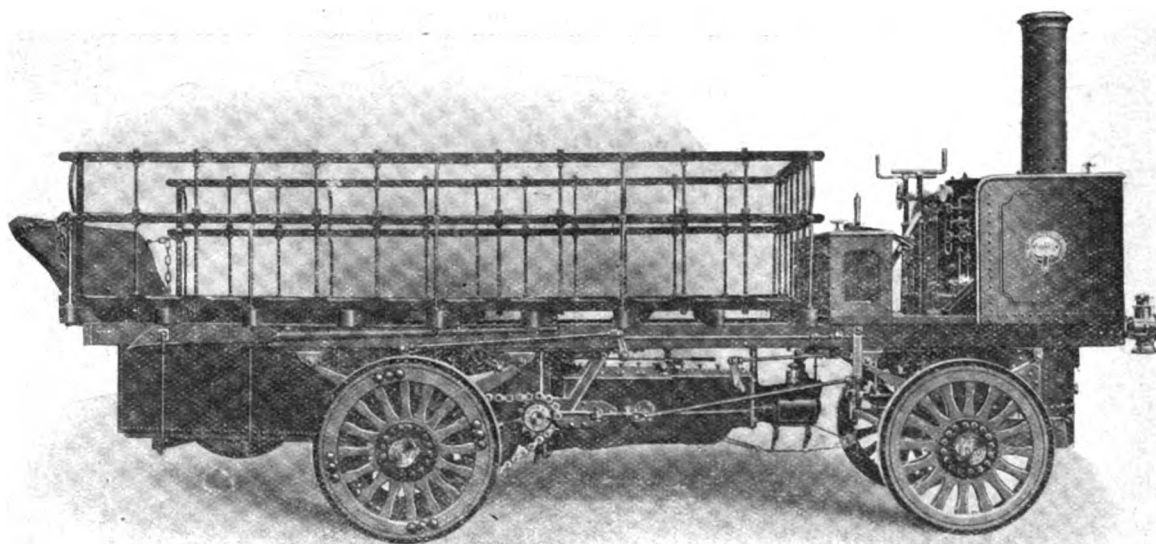


Fig. 1.—The Lancashire 4-ton Steam Wagon.

solid drawn steel tubes. The identical vehicle shown is intended for Messrs. Mann, Crossman, and Paulin, the well-known brewers, who have lately ordered two new wagons as the result of experience with one delivered some time ago. The Lancashire Company are extending their works to cope with the demand, among the orders in hand being five wagons for Johannesburg and one for India. On the same stand is shown a trailer intended to carry a load of three tons. This is of novel design, being arranged so that it may be hauled from either end. Another exhibit of

of their 6-ton wagons, which is attracting much attention. The general outlines of construction of steam-wagons are becoming somewhat standard, and Messrs. Coulthard's wagon has so recently been dealt with in the *Journal* that it will suffice to mention its more striking characteristics. The position of the boiler is behind the front axle, so that the weight is thrown more upon the driving wheels, giving better adhesion to the roads when running light. A larger bunker capacity is also by this arrangement secured. Messrs. Coulthard attach importance to control, and this is

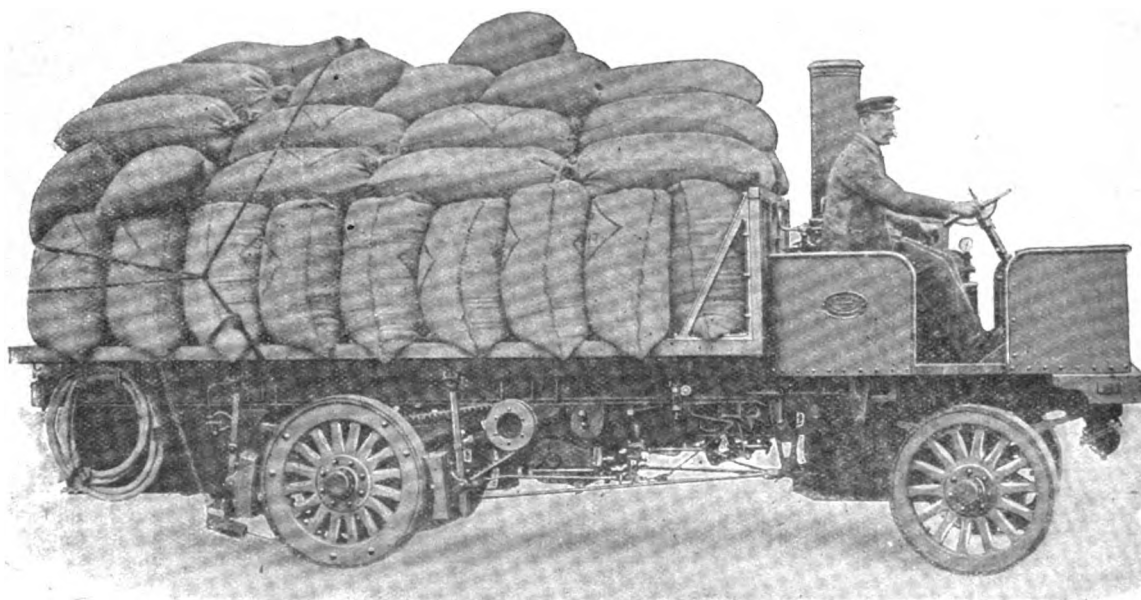


Fig. 2.—The Coulthard 6-ton Steam Wagon.

interest is a steam lawn-mowing machine. The engine and boiler are so fitted on the machine that the bulk of the weight is on the main roller. The machine is thus nearly balanced, and is easy to turn. The boiler is of the multitubular type, containing copper tubes of special make, and a copper fire-box, the shell being of mild steel. It is constructed so that the fire-box, with tubes and crown plate, can be lifted out for cleaning; it is arranged for a working pressure of 150 lbs. per square inch. Water is fed

well shown by the powerful double-acting brakes they fit, by which the whole strain of applying the brakes is taken upon each half, no strain being put upon any other part of the vehicle. Particular attention is also given to protection of all working parts—the engine, driving and compensating gear running in an oil bath. The lubrication is entirely automatic. We understand Messrs. Coulthard have a large number of wagons on order, including several for the Mersey Dock and Harbour Board.

DR. A. W. BRIGHTMORE, of Egham Hill, Surrey, exhibits his special heavy steam wagon, built to carry a load of from 5 to 6 tons. This is of novel design and construction, the engine, boiler, and transmission being all mounted on a two-wheel tractor, which forms the front pair of wheels of the lorry, these wheels thus serving both for driving and steering; the fore-carriage, being self-contained, can be taken out of one vehicle and

is intended for hauling loads of from three to six tons on a trailing wagon, the engine itself weighing under three tons, thus coming within the tare weight allowed by the Act. The boiler is of the locomotive type, constructed for a working pressure of 150 lbs. per square inch. Coal or coke may be used as fuel. The engine has cylinders $5\frac{1}{2}$ in. diameter by 9 in. stroke. The crank shaft and second motion shaft are of steel, and are carried on horn plates. Two speeds are provided, three and six miles an hour, the change being readily effected. The engine is easily handled, all the levers and regulating arrangements being conveniently placed. It appears to form a convenient method of substituting mechanical for horse traction by those who have already a large supply of ordinary wagons.

Another new exhibitor of heavy steam vehicles is the YORKSHIRE PATENT STEAM WAGON COMPANY, who display one of their vehicles designed to carry loads up to 4 tons, and 2 tons on a trailer. A detailed description

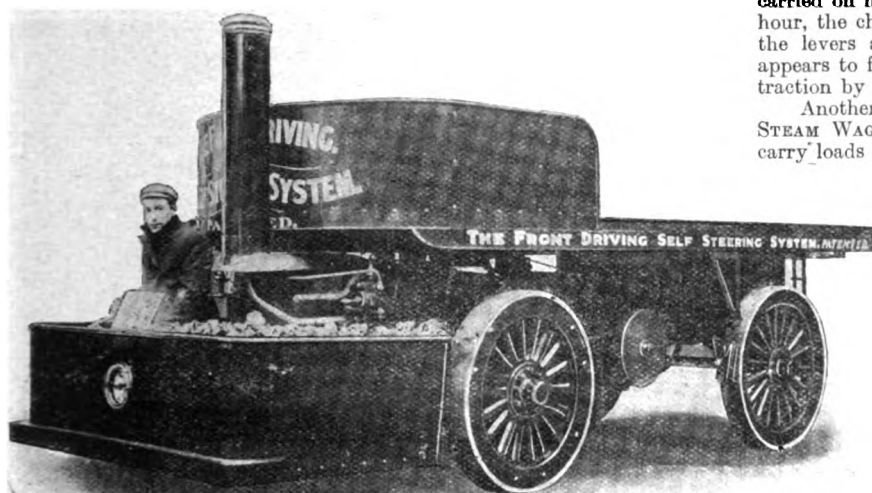


Fig. 3.—The Brightmore 5 to 6-ton Steam Wagon.

attached to another. The carrying platform is connected to the fore-carriage by a swinging hinge joint, so that each wheel always gets its proper proportion of load, however uneven be the road. By this means any communication of strain from the carrying platform to the machinery is rendered impossible. The steering is positive, and, owing to the short wheel base, the vehicle can be manoeuvred in restricted spaces. The boiler is of the fire-tube type and works at a pressure of 200 lbs. per square inch, coke being used as fuel. The engines are of the horizontal, com-

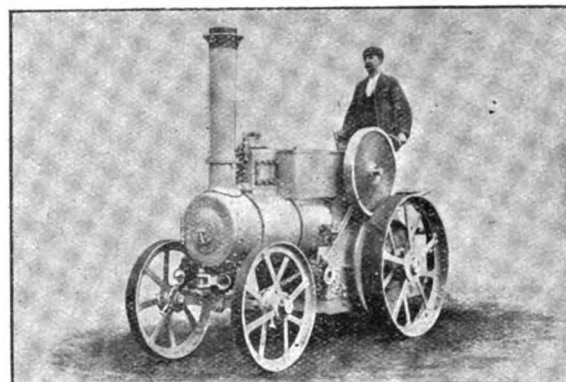


Fig. 4.—Messrs. Tasker's "Little Giant" Steam Motor.

with drawings of this wagon was given in our issue of the 3rd August, 1901, but since then many small improvements have been effected. The boiler is on the locomotive principle as regards the fire-box, but has two short barrels instead of one long one, and is fixed across the front end of frame, making a compact arrangement; two sets of fire-tubes connect the fire-box with the chambers at each end of the barrels, and return tubes convey the gases to another chamber at the base of the chimney. Instead of a steam blast-pipe in the chimney, the exhaust steam enters the two chambers



Fig. 5.—The Yorkshire 4-ton Steam Wagon.

pound type; at a speed of 450 revolutions per minute they develop 35 h.p. Provision is made for admitting high-pressure steam to both cylinders, in case of need. The connecting rods and cranks run in oil, a two-speed gear being enclosed in the same case. The differential countershaft conveys the power to the front road wheels by means of Renold silent chains. The Brightmore vehicle contains a number of other special features, a reference to which will be found in our issue of the 24th January last.

Messrs. W. TASKER AND SONS, LTD., have on view a diminutive traction engine, to which they have given the name "Little Giant" (Fig. 4). It

formed in the smoke-box doors, where it is superheated, and escapes through a series of small jets into each return tube; by this means an absolutely silent and invisible exhaust is obtained, and an equal proportion of flame or gases is drawn through each tube, making the boiler both economical and a rapid steamer. The engine is of the horizontal, compound type, with long stroke. Cylindrical guides are provided for the piston crossheads, these having large wearing surfaces, and being fitted with dust-proof covers. The power is conveyed to the rear road wheels entirely by spur gearing. The crankshaft is carried in two inverted pedestals

bolted to the wagon-frame; to each of these pedestals a strong steel bracket is hinged, which carries the second motion shaft and rear axle bearings; the other ends of these brackets are free to slide on strong guides. The wagon-frame is carried on laminated springs fixed to the brackets by joint pins, and can rise and fall without any material variation in the working centres of the shafts. There are only two bearings to each shaft, and all the gearing is between them; the second motion shafts and rear axle run in swivel bearings, so that, however unequally loaded or how uneven the road, the shafts cannot bind in the necks. The frame is built up of channel steel and braced with diagonal stays to resist the severe cross strains in travelling on uneven roads. Two speeds are provided, corresponding to $5\frac{1}{2}$ and $2\frac{1}{2}$ miles per hour. The front axle is free to rock on the springs,

time, and when so opened all parts of the engine can be inspected. Two speeds are provided, the transmission of the power to the rear road wheels being effected entirely by gear wheels. An efficient water lifter with suction hose is provided, and the capacity of the water tank is 180 gallons, sufficient for a run of from fifteen to twenty miles. Like other steam wagons, the Hindley is adapted to be fitted with any type of body.

A novel design of heavy steam vehicle is that shown by MANN'S PATENT STEAM CART AND WAGON COMPANY, LTD. It is provided with a boiler of the locomotive type, with the fire-box sides carried back to form the engine bed and support the brackets for the necessary shafts and gearing. The same plates also compose the water tank, and form an exceptionally strong girder frame to carry the whole vehicle. The engine is of the compound

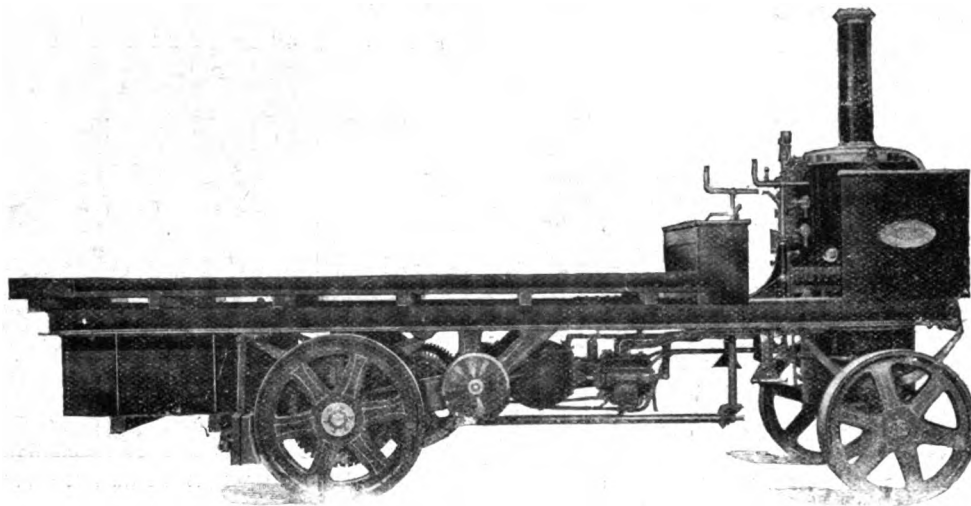


Fig. 6.—The Hindley 4 to 5-ton Steam Wagon.

so that no cross strain is thrown on the frame by the unevenness of the road; the road wheels are of the gun-carriage type, drag rods being fitted on the driving wheels to relieve the strain of driving through the spokes. A powerful screw brake, acting direct on the tyres of the driving wheels, is provided, this being claimed to be capable of bringing the loaded vehicle to a stand on the steepest incline.

Another engineering firm to take up the construction of heavy steam vehicles is Messrs. E. S. HINDLEY AND SONS, whose vehicle is now shown to the public for the first time. The vehicle is intended to carry, on ordinary roads, and up an incline of 1 in 9, a load of 5 tons. A trailer can be attached to carry two or three tons. The makers inform us that in the design the

type, with single eccentric reversing gear, and the whole runs in a dust-proof oil bath. The cylinders are 4 in. and $6\frac{1}{2}$ in. diameter by 8 in. stroke. The gearing is of cast steel throughout, with no chains, either for driving or steering, and the road wheels are 10 in. wide and fitted with an effective arrangement for locking the differential gear on occasion. It is fitted with two speeds, one of 5 and the other of $2\frac{1}{2}$ miles per hour for hill climbing. The exhaust steam is passed through a separator, and superheated to prevent the emission of visible vapour, and the boiler is constructed to burn coke for the same reason. In general design and construction the wagons follow traction-engine practice. They can be fitted with any class of sides or van bodies to suit individual requirements, or with tipping

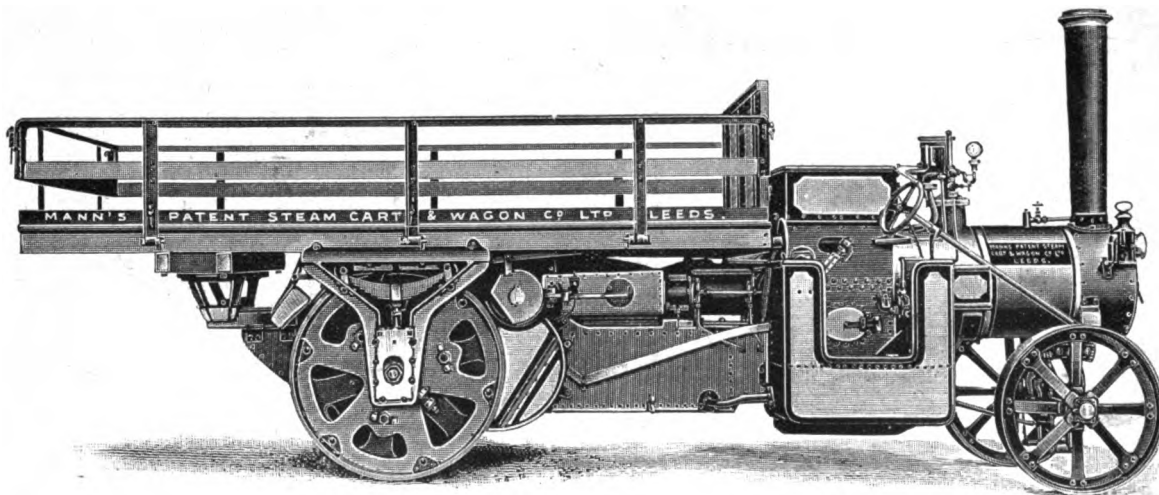


Fig. 7.—The Mann 5-ton Steam Wagon.

points specially kept in view have been strength, lightness, durability, ease in management on the road, and the least labour and attention in maintaining in good order. The boiler, which is located in the fore part of the frame, is of the vertical fire tube type; it is constructed for a working pressure of 225 lbs., and is tested to 350 lbs. per square inch. An efficient feed-pump and an injector are provided, either of which can be used whether the vehicle is travelling or standing still. The boiler is adapted to burn either coke, steam coal, or anthracite, but liquid fuel apparatus can be fitted if desired. The engine is of the double-cylinder, compound type, reversing by link motion, and, working at 225 lbs. pressure per square inch, develops 25-h.p. Full steam pressure can be used in both cylinders occasionally to ensure starting at any time without reversing. The upper portion is covered with a light dust-proof casing, readily removable at any

gear of such construction that one man can readily tip the full load of 5 tons.

THE STRAKER STEAM-VEHICLE COMPANY, LTD., exhibit two of their heavy steam vehicles, both of the 5-ton type. One is shown without the body in order that the engine, boiler and general arrangement may be inspected, while the other is a lorry belonging to Messrs. T. and W. Farmiloe, who have had it in use for some time past, carrying loads of five tons. The Straker vehicles have been so recently described in the *Journal* (see issue February 7th, page 937) that no lengthy reference is necessary on the present occasion. That their merits are being recognised is indicated by the fact that the Straker Company have lately booked an order for no less than twenty vehicles for the Western Road Carrying Company, of Bristol.

PETROL CARS.

Messrs. FRISWELL LIMITED, have a neat display of the well-known Peugeot cars. First we have the "Baby Peugeot" with 5-h.p. motor. This is now too well known to need description. Fig. 8 illustrates the 6½-h.p. Peugeot car, which is on similar lines to the "Baby," but has a single-cylinder engine developing 6½-h.p. Three speeds forward and a reverse are provided, the power being conveyed direct to the rear live axle on the top speed. As will be seen, this little car is provided with a tonneau body, seating four persons. Well-finished specimens of the Peugeot 8 and 12-h.p. cars are also on view. The new features of these have already been dealt with in the *Journal*, so it is only necessary to summarise them on the present occasion. The 8-h.p. car has a two-cylinder vertical motor, honeycomb radiator and fan, electrical ignition, governor acting on admission, three speeds forward and reverse on one lever, direct driving on top speed, automatic lubrication by water pressure, chain drive, and tonneau body. The 12-h.p. car, one of those shown being intended for Mr. J. P. Neave, of Neave's Food, has a four-cylinder vertical engine in front; the bore of the cylinder is 105 mm., the stroke 105 mm., and the maximum speed 1,200 revolutions. The admission valves are mechanically operated, the same as the exhaust valves, with which they are interchangeable. The governor is adapted to act upon the admission of the gas and to work in conjunction with this both an accelerator and a moderator are provided; either high tension or magneto can be provided as desired. The water circulation is maintained by a honeycomb radiator, ventilating fan, and a large gear-driven centrifugal pump. Four speeds and a reverse, actuated by one lever, are available; the fourth speed is direct on to the differential shaft, from which the power is transmitted to the rear road

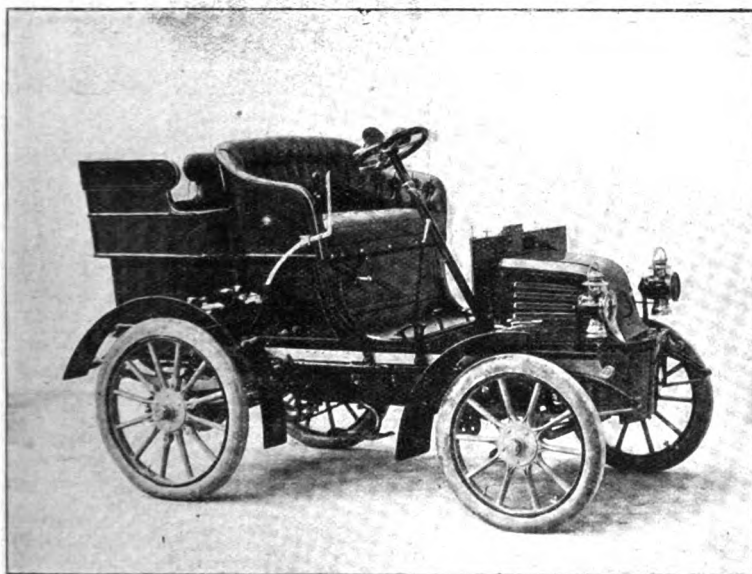


Fig. 8.—The 6½-h.p. Peugeot Car.

wheels by two side chains. Messrs. Friswell have also on view in the Yard "Le Passe Partout" car, the interesting history of which was given in our issue of the 14th February last.

One of the novelties of the show in the way of petrol cars is the "Soames," exhibited by the LANGDON-DAVIES MOTOR COMPANY, LIMITED, illustrated and described in our issue of February 14th last. To begin with the frame, or rather frames, there being two, one being intended for the support of the motor and transmission mechanism, and the other for the body, each frame being supported on the axles by separate plate springs. By this arrangement the vibration of the engine is entirely intercepted, while, in addition, the body can be swung upon lighter springs, so that the effects of road shock are better taken up. A standard type of two-cylinder vertical engine, developing 11-h.p. at a speed of 800 to 1,000 revolutions per minute, is employed. It is provided with a governor acting on the inlet. The water circulation is on the thermo-siphon arrangement, no pump being used. Since we last noticed this car some alteration has been made in the change-speed gear, which gives four speeds and reverse, the gear wheels being always in mesh. The two parallel shafts carrying the change-speed wheels run across the car. The first of these carries a bevel wheel, driven by either one or two bevel pinions carried by a shaft at right angles to it and directly connected to the clutch shaft. By bringing one or other of the bevel pinions into mesh the forward and reverse movements are obtained.

The whole of the gear wheels, on the first of the two shafts carrying the change-speed gear (Fig. 10), are keyed to the shaft; those on the other shaft run loose, and the method of changing speed consists of locking one or other of these gear wheels to the shaft in the following manner. The shaft is of large diameter, and has a deep slot cut in it. Each of the gear wheels has two keyways, which, when they are revolving, come opposite the slot in the shaft. To prevent the edges of the slot in the shaft catching the edges of the

keyways in the wheels, when the shaft or gear wheels become worn, the gear wheels are not carried directly on the shaft. Between each wheel is a hardened steel collar, which is fitted to the shaft without a keyway cut in it; on the outsides of these collars are fitted gun-metal rings, broader than the collars, and fitting into circular grooves in the side faces of the gear wheels. By this means the gear wheels are carried on the collars and not on the shaft, so that they will run true if the hole in the gear wheel is larger in diameter than the shaft. Lying in the slot in the latter is a steel

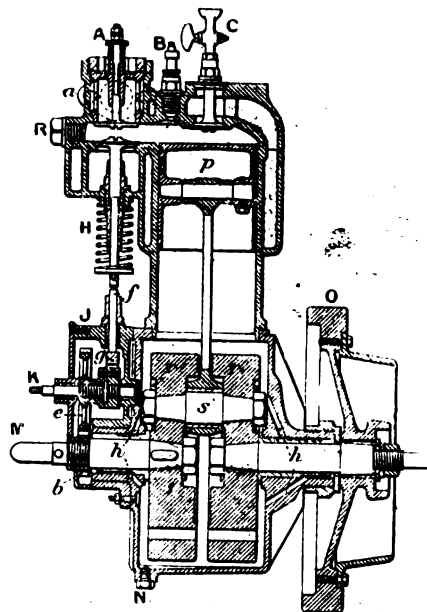


Fig. 9.—Section of 6½-h.p. Peugeot Motor.

bar, carrying at its end a key held up by a spring. The end of the shaft projects from the end of the gear-box proper into an oil-catching chamber. The bar carrying the key passes in the slot out through the bearing to the exterior portion of the shaft, and is fixed to a collar revolving with the shaft, and by means of which it may be drawn sideways, allowing the key to be pressed down when passing under the collars separating the gear wheels, and to spring up into the keyways of one or other of the gear wheels, and thus lock it to the shaft.

To make certain that the key has gone right home, and to prevent any possibility of its being shaken or knocked down into the slot in the shaft, and thus releasing the gears, a second steel bar lies in the bottom of the slot in the shaft underneath the bar carrying the key. The outer end of this passes out further than the bar carrying the key, and is secured to a collar by which it can be drawn sideways in the same way as the keybar. The inside end of this is wedge shaped, and when it is slid forward presses the key up into the keyway in the gear wheel, if the spring has not already done so, and prevents it from coming down again, thus locking it in position.

The action of changing gear is then as follows:—The clutch is thrown out as usual, the change-speed handle is pulled upwards; this draws back the locking bar and leaves the key controlled by its spring only. The key bar is not moved by this motion of the handle. The handle is then turned, sliding both the key bar and the locking bar along, but keeping them at the same relative distance to one another. The key is pressed down into the slot in the shaft against its spring by being pulled under the collars which

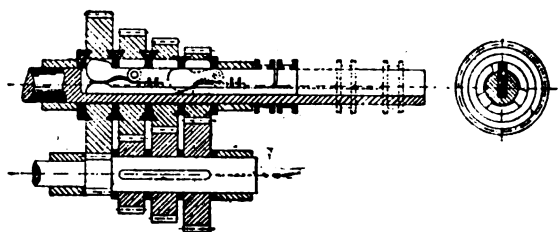


Fig. 10.—Section of Langdon-Davies Change-speed Gear.

separate the gear wheels, and springs up into the keyway of the next, or whichever gear wheel it is brought to. The handle is then pushed down, which leaves the key bar in position, but pushes back the locking bar under the key and locks it up in position.

It can be seen that the gear can be changed from any one speed to any other, whether the car is running or at rest. If the keyway in the required gear wheel should not be in position when the car is at rest, it will not be possible to push the key up by the lock, and the change-speed handle

cannot be pushed down, but directly the wheels are revolved the handle will fall of itself and effect the lock.

Owing to the key being pressed entirely out of engagement when passing under the collars separating the gear wheels, it is never possible to get two sets of gear into engagement at once. From the gear-box the power is transmitted to the rear axle by two chains. Much thought has undoubtedly been expended on the design of this car, which has been the centre of attraction all the week.

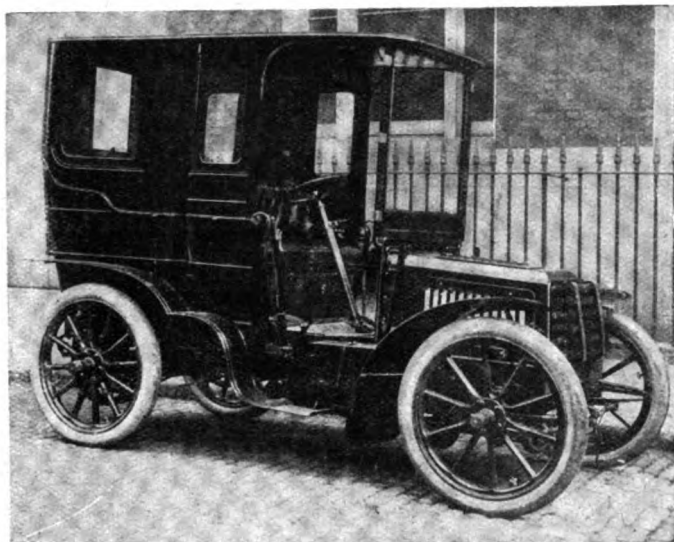


Fig. 11.—The Boyer 12-h.p. Limousine.

An imposing array of cars is made by the CLINGOE AUTOMOBILE SYNDICATE, LIMITED, prominent among which are a 7-h.p. Panhard car, a 9½-h.p. Clement, and a 9-h.p. De Dion. Three sizes of Boyer cars, 12-h.p., 16-h.p., and 24-h.p., are also to be seen. Of these we select for illustration the Boyer 12-h.p. limousine (Fig 11). This is fitted with a two-cylinder Herald engine, governed on the admission. The general arrangement is very much on the lines adopted in the Panhard cars, the power being conveyed through a clutch and gear-box to a differential countershaft and thence to the rear road wheels by side chains. Four speeds and a reverse are provided. The 16-h.p. and 24-h.p. cars are on similar lines, except that

the engines comprise four cylinders. Much attention appears to have been devoted to the carriage work of these vehicles, which is, we might add, of English execution.

The "Firefly" cars exhibited by the Firefly Motor Company comprise examples of the 6-h.p. and 10-h.p. models. The 6-h.p. tonneau (Fig. 13) is fitted with a De Dion engine, water-cooled by pump and radiators. Three speeds forward and one reverse are available, the top speed being direct. The power is conveyed by bevel gear to the rear live axle. A double-acting band brake is mounted on the propeller shaft, actuated by pedal; also internal expanding brakes on the rear hubs, operated by side lever; the

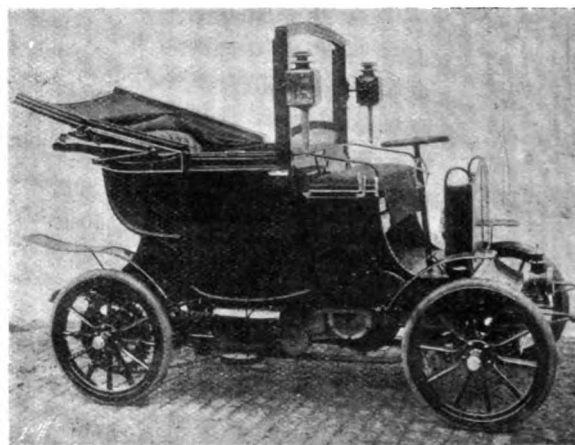


Fig. 12.—The James and Browne 9-h.p. Petrol Landaulette.

application of either brake throws the engine out of gear. The 10-h.p. Firefly twin-cylinder car has three speeds forward and reverse, with a direct drive on top speed. The connection between the gear box and the rear wheels is by a countershaft and side chains. Cardan joints are fitted between the gear box and the sprockets and between the gear box and the clutch, to obviate unnecessary wear in the gear box. The frame is supported on the axles by long front springs and a transverse spring at the rear. A chassis of a 7-h.p. Panhard car is also shown, while a well-finished specimen of the 9-h.p. Clement cars may also be inspected.

An interesting display is made by Messrs. James and Browne. First we noticed a 9-h.p. chassis, in which the various special features can be seen at a glance. As is now well known, these include a two-cylinder engine of the horizontal type, with the fly-wheel set in the centre of the

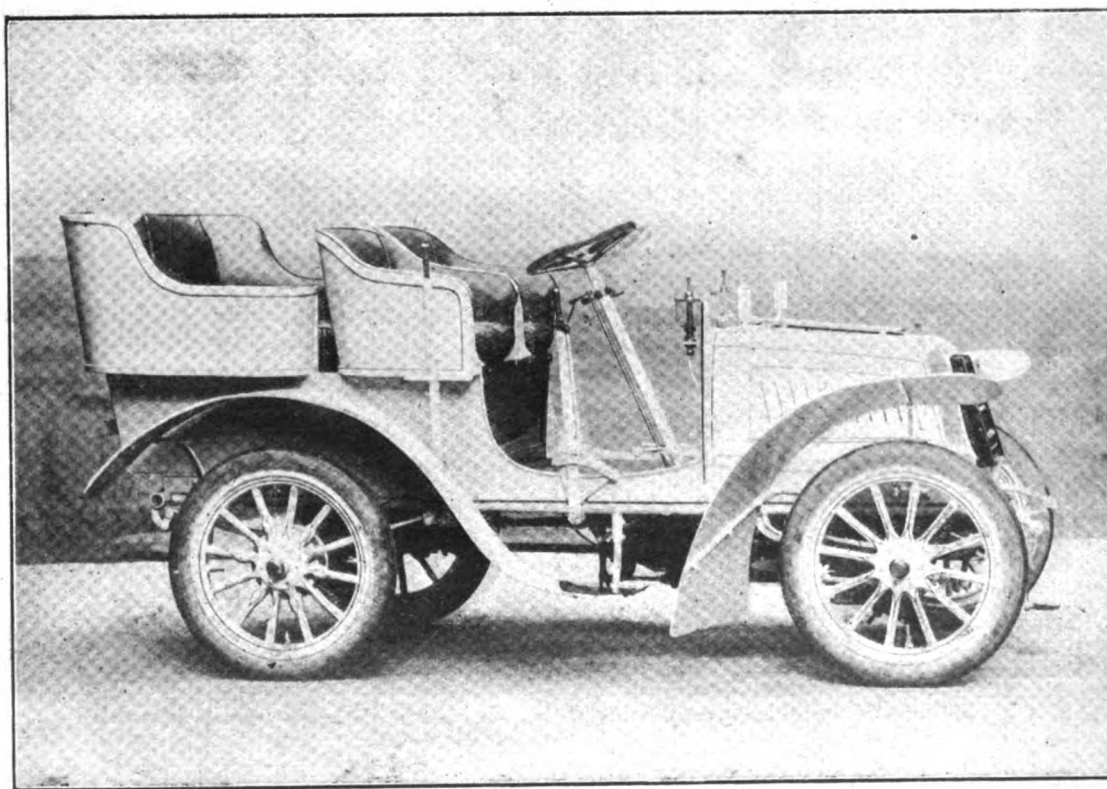


Fig. 13.—The "Firefly" 6-h.p. Car.

frame and rotating in the same direction as the road wheels. The motor runs at the relatively slow speed of about 500 revolutions per minute normal, perfect control and quiet running being obtained by the "throttle" governor. Another feature is the ease with which the valves may be removed, this being effected by simply loosening two butterfly nuts. The

hibited. This can be closed or opened as desired, and is now fitted with an arrangement enabling the motor to be started from the seat. The new 18-h.p. car has a double tonneau body, seating six persons comfortably. The bonnet on this vehicle is hinged longitudinally, instead of to the dashboard, so that half can be lifted up on either side for examination of the

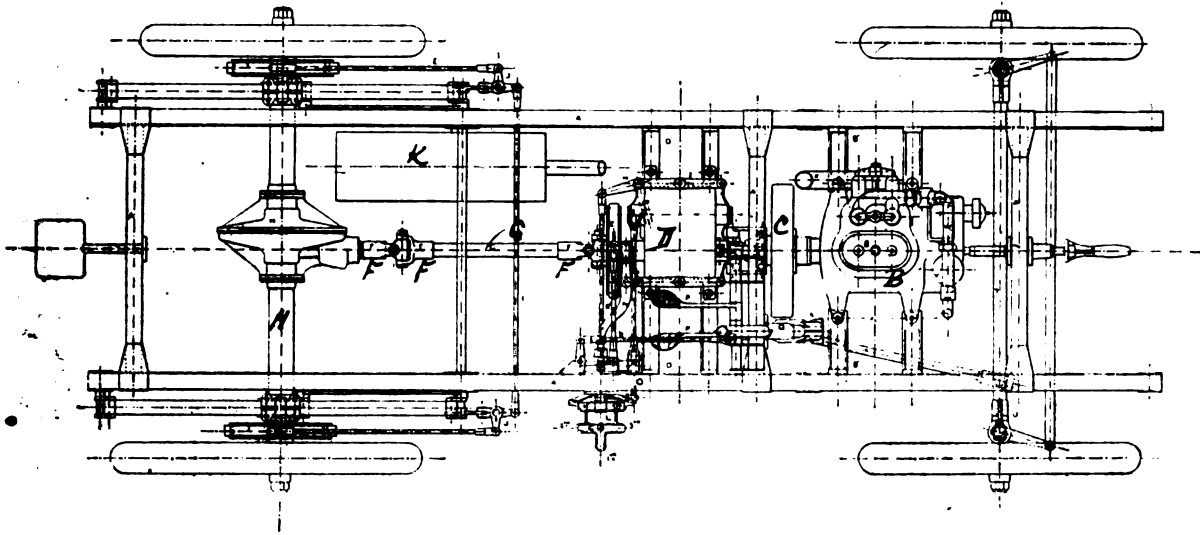


Fig. 14.—Plan of Chassis of Argyll 10-h.p. Car.

B Engine.
C Flywheel and Clutch.

D Gear Box.
F Universal Joints.

G Propeller Shaft.
H Live Axle.

K Silencer.

lubrication has been so arranged that by the use of special relief valves, which maintain a vacuum in the crank cases, it is practically impossible to over-lubricate. The fact that the lubricator is also turned on and off by one tap only should prove a great convenience. Two sizes of the James and Browne car are made—a 9-h.p. double-cylinder and an 18-h.p. four-cylinder—the cylinders being 4 in. diameter by 6 in. stroke. The transmission is effected through parallel shafts, no bevel gear being used in the

motor. Generally it may be said that the James and Browne cars have been carefully thought out, and built on sound lines.

We gave a description in a recent issue of the principal improvements in the Argyll cars for the 1903 season, and also an illustration of the new 10-h.p. two-cylinder car. It is, therefore, only necessary to briefly mention that the HOZER ENGINEERING COMPANY have on view two well-finished tonneau cars, one being fitted with 10-h.p. two-cylinder Clement motor

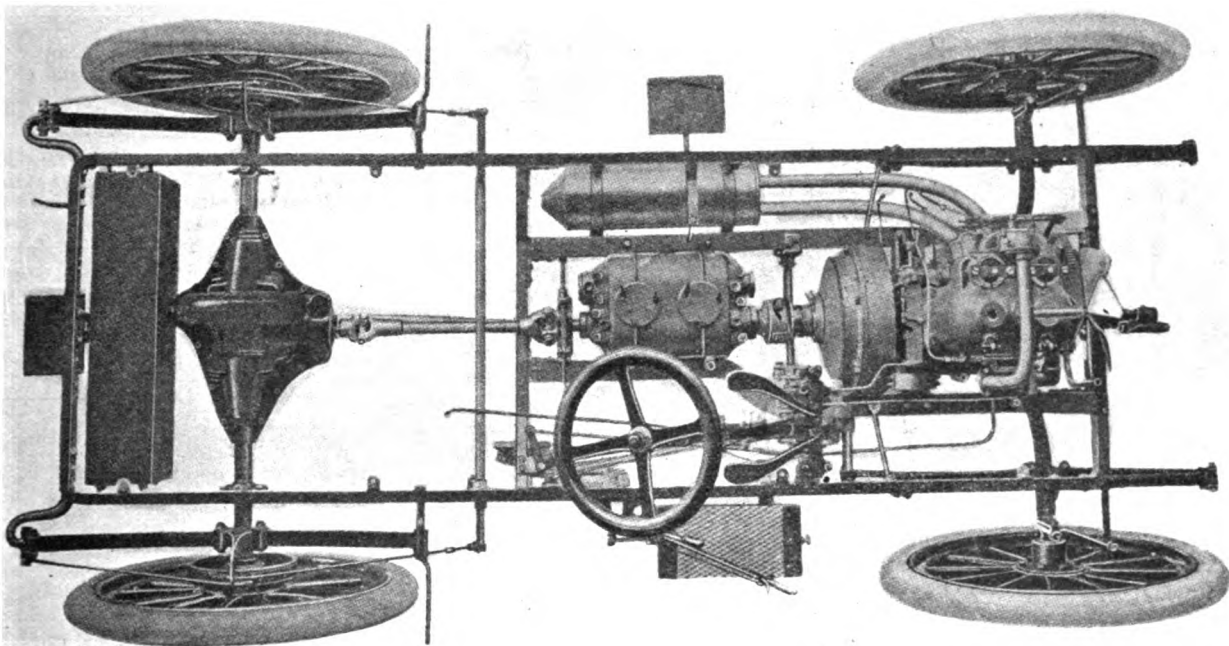


Fig. 15. Plan of Chassis of "Peerless" 18-h.p. Car. (See next page.)

main drive, the countershaft being connected to the rear road wheels by two side chains. Four speeds forward and one reverse, actuated by one lever, are provided. The lubrication of all the bearings is obtained by the use of ring boxes, and is entirely automatic. The clutch is composed entirely of metal. Of the 9-h.p. type, a tonneau and a landaulette (Fig. 12), the latter resembling an electrical vehicle in outward appearance, are ex-

and one with 9-h.p. single-cylinder De Dion engine. The 10-h.p. chassis (Fig. 14) is well worthy of inspection, the new methods of operating the change-gear striking us as being a great step in the right direction. The change-speed lever moves from a central position in three directions. When it is pushed outwardly in the centre of the quadrant across the car the first speed is introduced; when it is pulled towards the driver's seat the second

speed is engaged, and when pushed forward the third speed is obtained. In each direction the change-speed lever goes to a full stop, so that there are no notches to find, and therefore a mistake cannot be made in changing gear in the dark. Another feature of this car, which is fitted with Aster motor, is the latest type of honeycomb radiator and fan, the Hozier Company being now able to fit this to their cars if desired by clients.

Probably the first American car built on Panhard lines to be seen in England is that shown on the stand of the PETROL MOTOR POWER COMPANY. It is an 18-h.p. car (Fig. 15) built by the Peerless Motor Car Co., of Cleveland, Ohio, and that it is up-to-date will be seen by the fact that the motor is governed on the inlet, and that the water-tank is combined with the radiator, which is set in the front opening of a square bonnet. The 18-h.p. motor, however, comprises but two cylinders. Three speeds forward and a reverse are controlled by a single lever, the power being conveyed through a pedal-operated clutch to the gear-box, and thence by an universally-jointed shaft and bevel gear to the rear live axle. On the top speed the power is transmitted direct. The various details appear to have been well considered, a useful feature being the hinging of the steering column just below the hand-wheel to allow of easy access to the driver's wheel. The motor is of the vertical type with the crank shaft lubricated by means of ring oilers running in oil pockets. The crank pins are oiled by force feed, which also automatically lubricates the cylinders and all bearings. The two cylinders are one casting, two hand holes being provided in the bottom

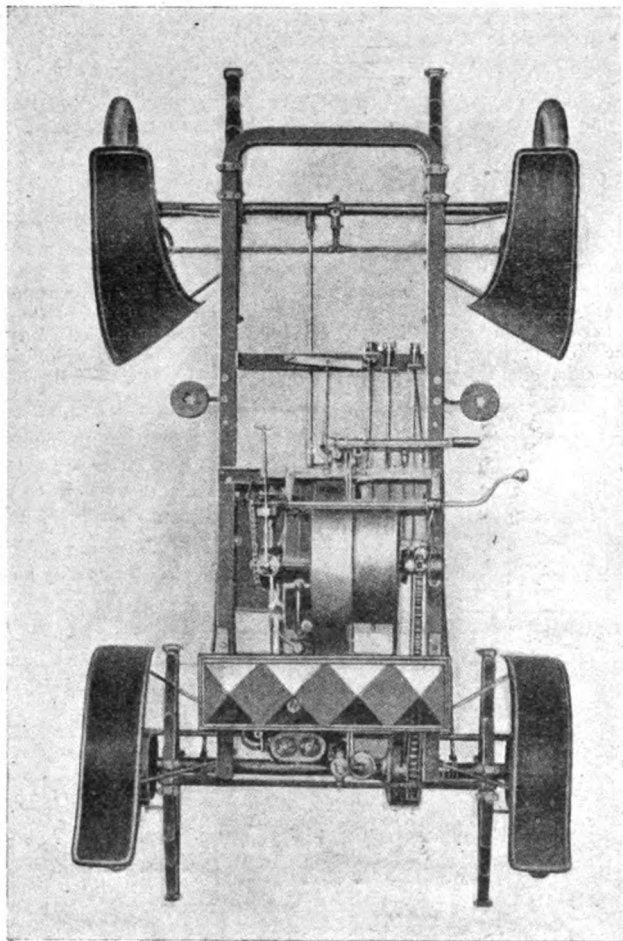


Fig. 16.—Plan of Chassis of Rambler Car.

of the crank case which renders possible inspection, adjustment, or replacement of the connecting rod bushing. The same firm exhibit the Rambler car illustrated in our issue of the 29th November last. A number of improvements have been introduced in the 1903 models, these comprising the adoption of a 6½-h.p. single-cylinder (5 in. by 6 in.) motor, and artillery wood wheels in place of those of the cycle type. The wheel base has been lengthened six inches, and the body brought two inches lower. A new carburettor with float feed has been introduced, while the cooling system has been enlarged so that there are now nearly 400 radiating tubes instead of 200. The axles are heavier, and mudguards are now being fitted to all wheels. We give in Fig. 16 a view in plan of the chassis of the Rambler car.

The VELOX MOTOR COMPANY, LIMITED, have on view a 12-h.p. chassis and three complete cars of the same power. As the details of these vehicles were fully described in our issue of the 17th January last, no lengthy reference is necessary. We may add, however, that the vehicle shows signs of having been most carefully thought out, the chassis and the carriage

work being of the highest grade. The tonneau portion is exceedingly roomy, and has ample accommodation for three persons. Useful drawers are placed below the rear seats, while under the rear floor board is ingeniously contrived a long, shallow drawer to carry spare tubes, etc. We learn that the Velox Company are bringing out two new types of cars—of 4½-h.p. and 8 to 10-h.p. respectively.

The DURYEA MOTOR COMPANY display five or six 10-h.p. cars, including "Rumble" phaetons, tonneaus, and a phaeton fitted with a detachable brougham top. It is entirely enclosed, and has been designed for winter use, particularly by doctors. The Duryea cars have already been described in these columns, but it may be mentioned that the principal mechanical

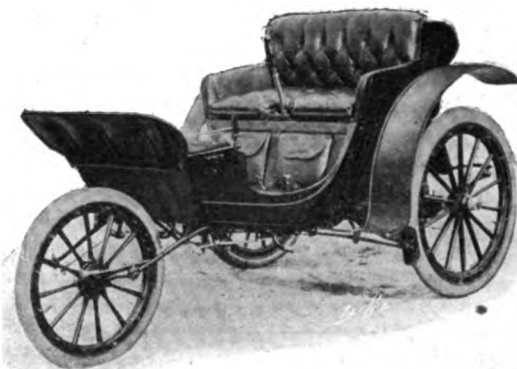


Fig. 17.—The Duryea Three-wheel Phaeton.

features are a triple-cylinder balanced motor developing 10-b.h.p., one-piece nickel steel live axle, direct chain transmission without countershaft, throttle control, irreversible steering without worm gear, magneto ignition, natural water circulation without pumps, and one-hand control. The changes in the latest models comprise a new condensing tank, with projecting ears at the rear of the body, a special detachable exhaust-valve seating, and an improved silencer. A new car is a six-seated tonneau with canopy, a feature of which is an improved form of one-hand control lever, this being of the cross-lever type in place of the straight vertical lever usually fitted. The Duryea Company are fitting English-made bodies to the Duryea chassis.

The "Northern" two-seated runabout is again shown by MESSRS. JOSEPH COCKSHOOT AND COMPANY, LIMITED. As we gave an illustrated description of this vehicle in our issue of 7th February last, no lengthy reference is necessary. We may, however, mention that the vehicle is of American construction, and belongs to the single horizontal cylinder class of cars, with side spring suspension. The bore of the cylinder is 4½ in., and the stroke 6 in.; the normal speed is about 600 revolutions per minute, at which the engine develops 5-h.p. The admission and exhaust valves are both actuated mechanically. Two forward speeds and a reverse, with direct or "free" drive on the high gear, are provided, the planetary type of variable speed gear being used.

One of the exhibits in the Gallery which is attracting considerable attention is that of Captain H. H. P. Deasy, who has on view the chassis of a 20 to 22-h.p. Rochet-Schneider car. Its main features, such as honeycomb radiator, mechanical inlet valves, magneto ignition, and governor acting on the

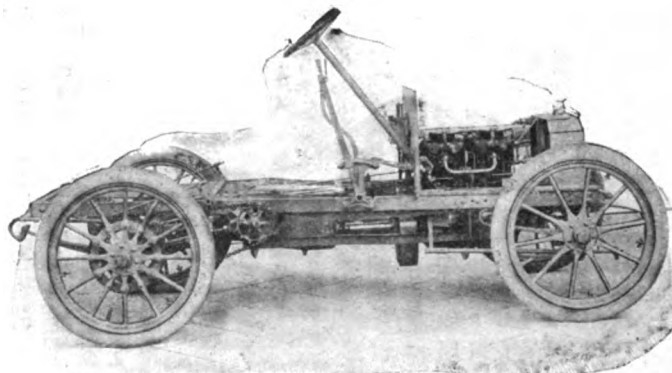


Fig. 18.—Chassis of Rochet-Schneider 22-b.h.p. Car.

inlet, were described in our report of the Paris Salon. The vehicle, which in design and construction is a close copy of the Mercedes, makes hardly any noise when in operation, the throttle valve, controlled from the handle bar, enabling the engine to run quietly at all speeds from 150 to 1,000 revolutions per minute. The motor is of the vertical four-cylinder type, the cylinders being 100 mm. in diameter by 150 mm. stroke. Each cylinder has a separate switch, by means of which it can be insulated from the three others whenever it may be necessary to verify the working of the motor. In order to reduce noise the gear wheels of the cam pump and magneto shafts are made of discs of fibre interposed with those of gun metal,

One of the two exhibitors in the handsomely decorated King Edward's Hall is the **SIDDELEY AUTOCAR COMPANY**, who have on view a range of Siddeley cars from 5-h.p. to 12-h.p. The Baby Siddeley has a 5-h.p. engine, three speeds forward and reverse, the power on the top speed being transmitted direct through bevel gear to a live axle. To those seeking a reliable little two-seated car an inspection of this vehicle may be recommended. The 6½-h.p. car is an enlargement of the "Baby," and is fitted with a tonneau body enabling it to carry four persons. Other cars to be seen on this stand include several 8 to 11-h.p. vehicles with two-cylinder motors and a couple of 12-h.p. cars, one finished in silver-grey and red and one in pale blue. The latter are on up-to-date lines, the four-cylinder motor which develops up to 16-h.p. having mechanically-operated inlet valves, magneto ignition, honeycomb radiators, and other 1903 improvements. Four speeds forward and a reverse motion are provided, the gear box being connected by bevel gear to a differential countershaft, the power being conveyed thence to the rear wheels by chains. Altogether the vehicle has the appearance of being not only speedy but of sound and reliable construction.

Mr. F. H. HUNT confines his exhibit to a *chassis* and complete *vis-a-vis* illustrating the Maurer-Union system of cars. They are both fitted with 5-h.p. single-cylinder motors; the novel feature, however, being the method of transmitting the power, this being effected through a friction-driven disc. The system has already been illustrated and described in the *Journal*.

Among the several popular-priced cars that have attracted attention during the week is the "Emerald," (Fig. 19) shown by Mr. DOUGLAS S. COX, of West Norwood. It is a little two-seated car, with frame built of steel and wood. The engine, which is located under a bonnet in the forepart, is of the vertical, single-cylinder type. It is of 4-h.p., the cylinder being 80 mm. diameter by 108 mm. stroke. The ordinary system of electrical ignition is adopted, while the water circulation, for the cooling of the engine, is on

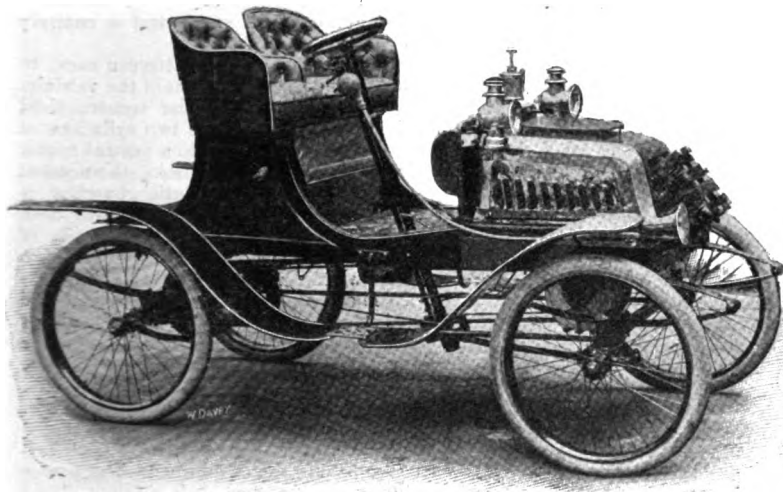


Fig. 19.—The "Emerald" Light Car.

the thermo-siphon system. Two speeds are provided, a long wide belt conveying the power to a short intermediate shaft at the rear. On this is mounted a Bozier gear, giving two speeds and free engine, spur gearing connecting the intermediary shaft with the rear axle. Inclined wheel-steering, 28 in. cycle type wheels are other features of the little car, which is said to be capable of attaining a speed of 28 miles per hour. Two pedal-operated brakes are provided, while there is ample accommodation for luggage.

The "Carpevian" car is attracting much curiosity from those on the look-out for a small-priced vehicle. Reference has already been made to its features in our columns. Briefly summarised, they include a 2½-h.p. air-cooled engine, a friction clutch and chain gearing controlled by a lever with three movements, a weldless steel tube frame, electric ignition, and two band-brakes. The car has three wheels of the wire type and there are seats for two passengers. The top speed of the Carpevian car, which is shown by Messrs. CHAS. PEACOCK AND COMPANY, is eighteen miles per hour.

A car on somewhat novel lines is the "Hermes," of the AUTOCAR CONSTRUCTION COMPANY, LIMITED, which exhibits two vehicles—a double phaeton and a delivery van—the two being identical as far as concerns the general arrangement of the *chassis*. The motor in the phaeton is of the horizontal four-cylinder opposed type, developing 25-h.p. at the normal speed of 700 revolutions per minute. Four speeds forward and a reverse are obtained by means of a special form of change gear and two roller chains. The frame is of channel steel, the motor and gear case being suspended on two large tubular cross stays. The front end of the rear spring is carried on a sliding guide on the frame. A novel feature of these cars is that the body is arranged to slide off the frame to the rear to give accessibility to the motor and mechanism, and to facilitate cleaning. Among other points in the Hermes cars may be noted the ease with which the motor and gear can be removed from the frame, the protected chains, and a device for illuminating the lubricators at night. All the shafts are parallel, no bevel

wheels being employed. The delivery van is of a neat design, and is intended to carry loads up to 25 cwt. It is fitted with a horizontal two-cylinder (opposed) motor, developing 15-h.p. In other respects the details are the same as in the phaeton. The body is not arranged to slide off the frame; instead, to give access to the engine and gear, hinged panels are provided in the sides of the body. The vehicle has a substantial appearance, and a good point appears to lie in the fact that the load is carried between the four road wheels.

To meet the demand for a popular-priced car the CROWN CAR COMPANY have introduced a novel three-wheel, two-seated vehicle, which is to be

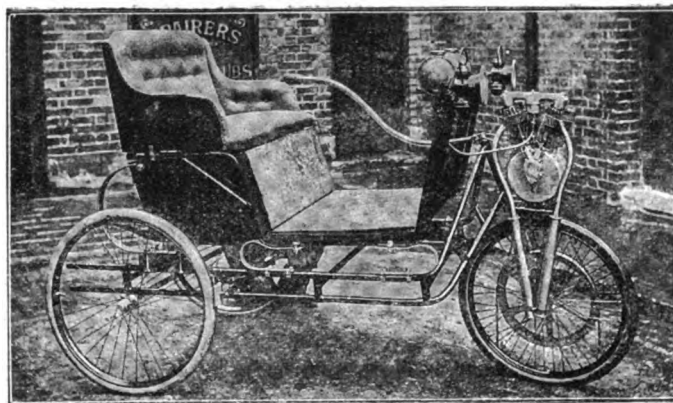


Fig. 20.—The "Crown" Car.

seen in the Gallery. The power is supplied by a twin-cylinder air-cooled engine of 5 h.p., fixed immediately over the front wheel, to which the drive is transmitted by means of a friction clutch and chain. Control is by throttle and ignition, actuated by Bowden wires from the tiller steering arm. The Company state that their reason for using such a large motor in relation to the weight (1½ cwt.) is to eliminate any form of change-speed gear, the car speed being regulated by the admission of gas to the engine by means of a throttle and the ignition. Three brakes are fitted—one to each wheel; a tyre brake on each rear wheel, and a band brake on the sprocket drum. The latter has a braking surface 52 in. in circumference, sufficient, it is claimed, to stop the car in its own length.

Prominent on the stand of Messrs. R. REYNOLD JACKSON AND COMPANY is the "Jackson" 8-h.p. dogcart, of which an illustrated description was given in our last issue. A little vehicle also shown which is attracting considerable attention by reason of its relatively low price is the "Jackson Covert" two-seated car (Fig. 21). This is fitted with a 3-h.p. vertical motor located in the rear of a tubular frame. The cylinder is air-cooled,

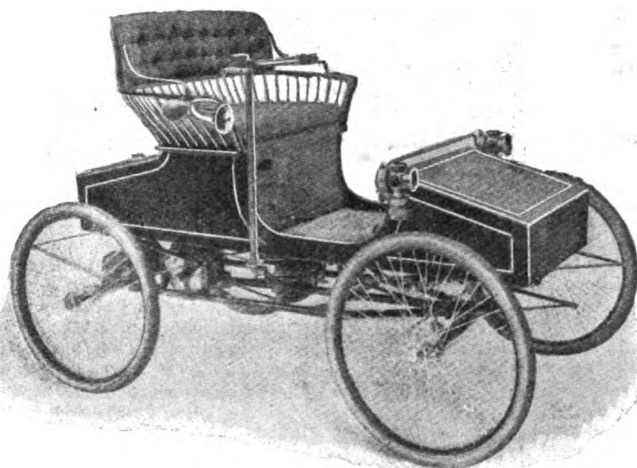


Fig. 21.—The "Jackson-Covert" Car.

but a water-cooled head is provided, the circulation being on the thermo-siphon system. Two speeds are provided; the engine transmits its power by a chain to a short countershaft about the centre of the frame. On this are mounted two combined sprocket wheels and clutches, the power being conveyed to the rear live axle by either one of the two chains provided. Steering is controlled by a side tiller, on the pillar of which the change-speed and advance ignition levers are mounted. The vehicle complete weighs only about 2 cwt. On the same stand are also to be seen one of the well-known Stirling 5-h.p. dogcarts and one of the latest types of 12-h.p. Gobron-Brillié cars.

Considerable interest is being shown in the *chassis* of the 11-h.p. "Earl" car (Fig. 22) on the stand of the GREAT CENTRAL GARAGE, LIMITED. The general arrangement follows the now generally adopted lines, a two-cylinder motor being set in the fore part of a steel-armoured wood frame. The engine runs at a normal speed of 800 revolutions per minute, and is fitted

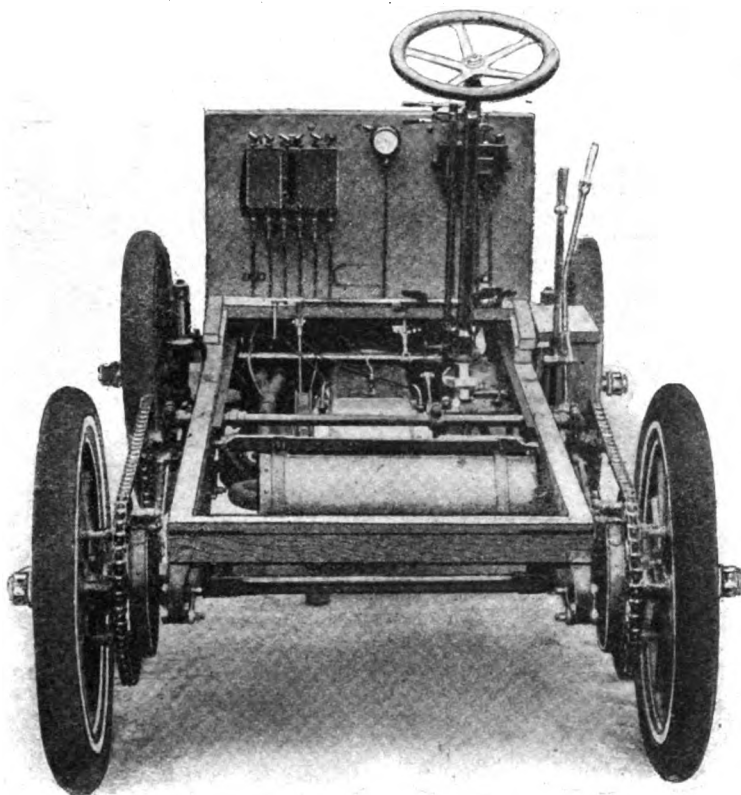


FIG. 22.—Chassis of "Earl" 11-h.p. Car.

with a governor, which acts on the exhaust valves in such a manner that it works very silently. The transmission is on Panhard lines, except that on the top speed the power is conveyed direct; three forward speeds and a reverse, controlled by one lever, are provided. Electric ignition is employed, with a special form of contact breaker; everything is in readiness to fit tube ignition if required. Equal size wheels, shod with 800 by 85 mm. pneumatic tyres; Dubrille lubricator to engine and crank chamber, working automatically, drop feed lubricator to all parts, are other features of the "Earl" car, which appears to be of sound construction throughout. A complete car is also shown, this having a comfortable body of the Roi des Belges type. On the stand are well-finished specimens of the 7-h.p. Panhard, 12-h.p. Darracq, and 9-h.p. Renault cars. The company have lately taken up an agency for the Charron, Girardot and Voigt cars, of which a 15-h.p. four-cylinder vehicle is shown. The details of the C.G.V. vehicles, to give them a short name, have already been given in these columns, so that it need only be mentioned that the frame is built of tubes into which ash is driven, while among the noteworthy features are the hot-water jacket to the carburettor and the expanding band brakes on the hubs of the rear wheels.

An imposing array of Panhard cars is made in the King Edward's Hall by Mr. J. E. HUTTON. These include examples of the 7-h.p. two-cylinder, and 10 and 15-h.p. four-cylinder types. The details of these vehicles have already been dealt with in the *Journal*, so that on the present occasion we need only recommend visitors to the show to an inspection of the *chassis* of the Panhard 10-h.p. *legere* car, the motor of which is fitted with the new Krebs carburettor. The bodies of the vehicles, which are the work of Messrs. Thrupp and Maberley, are also worthy of mention; these including tonneaus, a Lonsdale, and one with a special body of the Roi des Belges type. Mr. Hutton expects to have on view, ere the Show closes, at least one example of the 1903 Mercedes cars, but at the time we visited the stand this had not put in an appearance. In a corner of the stand Mr. Hutton is demonstrating the capabilities of the Pogon sparking plug, of which a description was given in our last issue. By means of a clockwork mechanism, a plug, connected up to a coil and battery, is made to dip at regular intervals into a bath of dirty oil. This, apparently, has no effect on the plug; indeed if anything it appears to spark better in the oil than out.

While outwardly closely resembling the now-standard type of petrol car, there are a number of special features in the 10-h.p. *chassis* and complete tonneau car exhibited by the MOTOR VEHICLE ENGINEERING COMPANY. The frame is of wood and steel, in the fore part of which is carried a two-cylinder motor developing 10-h.p. at a normal speed of 750 revolutions per minute. The governor is adapted to act on the inlet, an accelerator

being also provided by means of which the speed of the engine can be regulated as desired. The ordinary system of electric ignition is employed, a special form of wire, referred to below, being adopted. The water circulation is maintained by a pump, and a special form of combined ribbed radiating coil and tank, with fan. In the construction of the cooler no solder is made use of, and there are no joints beyond those at the connections of the induction and suction pipes. The pump is driven by gearing encased within a prolongation of the crank chamber, and running in oil. The power is conveyed through a friction clutch, gear-box, and bevel gear to the rear live axle. Four speeds forward and a reverse are provided, the drive on the top speed being direct. The change-gear is of the sliding type. Special provision has been made to obviate all strain on the shafts; between the clutch and gear-box, a flexible joint is provided, while the longitudinal shaft has a joint which is both universal and telescopic. The live axle is of strong construction, and well supported. Another point about the car worthy of notice is the brakes; these are of the internal expanding type, one being attached to each of the rear road wheels, these being actuated by a hand lever, and one, operated by pedal, being located on the forwardly-extended end of the secondary change gear shaft. The main bearings are lubricated on the ring system, the only lubricator on the dashboard being that which feeds the oil to the motor crank chamber. The car, which is known as the "Grand," has equal wheels shod with 90 by 810 mm. pneumatics. A long wheel base is adopted, enabling a large amount of leg room to be given to both the front and rear portion of the tonneau body. The Holsby system of electric ignition wiring referred to above consists essentially in so wiring the car as to produce the effect of a powerful electrical condenser, the advantages of which are said to be that the electro-motive force at the sparking plugs is greatly augmented, whilst an increase in the "fatness" of the spark is found to accrue. A special form of cable is made use of, and this is heavily sheathed in lead, whereby the above advantages are secured, whilst danger from breakdown due to abrasion of the insulation and its destruction from the solvent action of oil and petrol is entirely obviated.

Messrs. VAN TOLL AND Co. display a couple of the Cottareau cars, to which reference has been recently made in the *Journal*. One of the vehicles is a 10-h.p. tonneau with canopy. The frame is of tubular construction, with the motor under the bonnet in the fore part. The two cylinders of the engine are set V-shape, the piston rods working on to a central crank shaft. The cylinders are 90 mm. diameter by 115 mm. stroke, the normal speed being 1,200 revolutions per minute. The automatic governor is adapted to act on the inlet, a foot "accelerator" being also provided. Three speeds forward and a reverse are obtained by means of a train of sliding pinions of the Panhard type, the power being transmitted through a clutch and gear-box to a cross shaft which is connected to the rear axle by a single centrally-located chain. The car, which is provided with hand and foot brakes, and inclined wheel steering, weighs without body about 10 cwt. The 7-h.p. car is on identically similar lines, the only difference being in the motor, which has cylinders 85 mm. by 110 mm. stroke. Messrs. Van Toll also display one of the neat little "Citizen" two-seated cars. The motive power is supplied by a Clement 5-h.p. single-cylinder motor. Electric ignition is fitted, the wires being well insulated and so arranged that short circuits are almost impossible. The coil, battery, and lubricating oil tank are fitted in a neat case behind the dashboard. The power is transmitted to the road wheels by means of a steel shaft running direct to the back axle. Wheel steering is fitted on a strong inclined pillar, to which the change speed, advance, sparking, and other levers are attached. Two speeds are provided, the gear wheels being always in mesh, and thrown into gear by square jaw clutches, which are operated by a lever on the steering pillar.

Prominent features on the stand of Messrs. H. E. HALL AND Co. are the *chassis* of the latest types of 20-h.p. four-cylinder Darracq cars, the main features of which were described in our report of the Paris Salon.

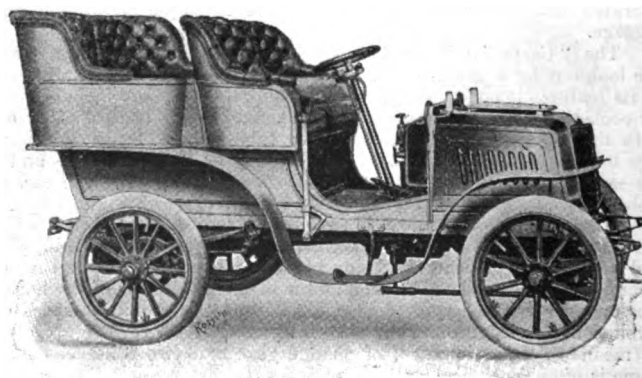


FIG. 23.—The Darracq 12-h.p. Car.

This, like the 12-h.p. cylinder car (Fig. 23), is fitted with mechanical inlet valve, stamped steel frame, Mercedes-pattern radiator, throttle-governed carburettor controlled by a lever placed on the steering wheel, and direct drive on the top speed. Of the 12-h.p. cars, three with tonneau bodies are shown, as is also an example of the 9-h.p. Darracq car.

Messrs. A. DARRACQ and Co. and "AUTOMOBILA" make a large display of the now well-known Darracq cars, ranging from the 20-h.p. to the 8-h.p. vehicles. The 20-h.p. car has a four-cylinder engine, with mechanically operated inlet valves, honeycomb radiator, a governor acting on the inlet, and an accelerator arrangement operated from the steering wheel. The 12-h.p. and 9-h.p. cars have twin-cylinder engines, the 8-h.p. having a single-cylinder motor. All the cars have three speeds forward and reverse, the power being transmitted to the rear live axle through a longitudinal

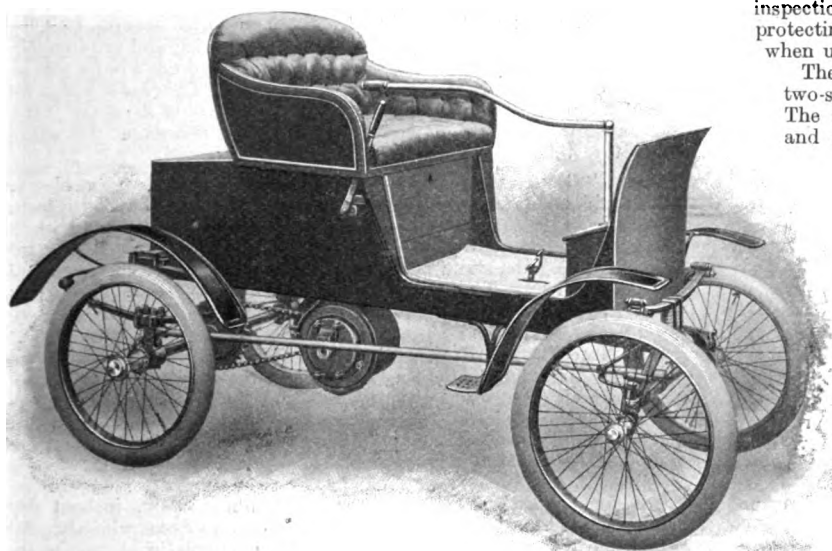


Fig. 24.—The "Lems" Electrical Runabout.

shaft and bevel gearing. The general features are now too well-known to need description at this time.

The HIGHGATE MOTOR-CAR COMPANY, of which Mr. J. Keele is manager, show Darracq cars and also a "Continental" car, fitted with a serviceable type of hood. The latter has a 6-h.p. engine and three speeds and reverse. Among the Darracqs is a 8-h.p. tonneau, upholstered in a rich red colour, and a 12-h.p. twin-cylindered Grande de Luxe car with Clipper-Continental tyres. The Highgate Company, which has recently increased its garage accommodation, is concerning itself largely with Darracq vehicles.

ELECTRICAL EXHIBITS.

A neat electrical runabout forms the display of Mr. W. A. CROWDUS. The frame is of tubular construction, the electric motor, which is supported at the rear, driving the back axle through bevel gearing. The battery consists of 44 cells, one charge being sufficient to run the car a distance of about fifty miles. The feature of the vehicle is the one-lever control, all the various operations of steering, speed changing, and applying the brakes being made by means of the tiller. Five speeds are available, varying from three to twenty miles per hour, with the same number of speeds in the reverse direction. In addition to an electrical brake, operated through the controlling lever, a double-acting brake, actuated by foot pressure, is provided, this acting on the rear wheels.

On the stand of the LONDON ELECTRO-MOBILE SYNDICATE, the Hart Accumulator Company are showing a variety of the Hart accumulators for traction and ignition purposes.

The AUTOMOBILE SUPPLY COMPANY, LIMITED, have on view a Scheele electrical car, supplied with two bodies—a victoria and a brougham—the connection being such that one can be quickly substituted for the other. The vehicle is provided with a battery of 40 Hagen cells of a capacity sufficient to run it a distance of forty miles on one charge. Two electrical motors are fitted, these driving the rear wheels through spur gearing. The controller is adapted to give five forward speeds, two reverse and two braking positions.

Messrs. SALMONS AND SONS display a large Stoeuer electric public-service omnibus, to seat fourteen persons. This is of German construction, and appears to be built on substantial lines. Two electric motors drive the rear wheels through spur gearing. The electrical energy is supplied by a battery of forty Leitner cells of a capacity sufficient to run the vehicle a distance of about seventy miles. The battery is divided up into three groups, and located under the seats. The controller is adapted to give four forward speeds, one reverse motion, and an electrical braking position. A pedal actuates a brake on the motor shaft, while a hand lever controls tyre brakes on the rear wheels. The car complete weighs about two tons, and is intended for speeds up to fourteen miles an hour. Messrs. Salmons are old-established carriage builders, and of recent years have devoted much attention to the construction of bodies for motor-cars. They have view on a finished tonneau in aluminium and wood, and one in aluminium in the rough. On this stand are also to be seen samples of paraffin and acetylene lamps, etc.

Among the electrical accessories shown is a good type of accumulator charging board, brought out by Messrs. W. J. BISHOP AND COMPANY. This is intended for charging small accumulators from the ordinary house supply where the current is continuous. Accumulators suitable for motor-cars and launches are also exhibited. The method adopted to separate the plates prevents their short circuiting even when submitted to the roughest treatment. Coils with tremblers, switches and interrupters, measuring instruments and induction coils are also included in the firm's display. An incandescent lamp for accumulator testing and inspection purposes, etc., in which the lamp is protected from breakage by a protecting metal reflector, which also has the effect of increasing the light when used for inspection purposes, completes the display.

The LONDON ELECTRO-MOBILE SYNDICATE, LIMITED, display three neat two-seated runabouts, one being marked as sold to Lord Salisbury. The electric motor is carried at about the centre of a tubular frame, and drives by spur reduction gear a small counter-shaft, which is connected to the rear axle by a centrally-located chain. The electrical energy is furnished by a 45-cell battery arranged in five groups, and having a capacity sufficient to run the car a distance of about 40 miles on one charge. The controller is adapted to give any desired forward speed from three to twelve miles an hour, and a reverse motion, while in one position an electrical brake is obtained. Steering is controlled by a tiller, while there are two pedal brakes, one acting on the rear axle and one inside the large spur-wheel on the short countershaft. Artillery or cycle-type wheels, 26 in. diameter and shod with $2\frac{1}{2}$ in. pneumatic tyres, are fitted. The car (Fig. 24), which is neatly finished, weighs in running order about 10 cwt.

MOTOR BICYCLES.

Disappointed by the shippers, Messrs. COXETER AND SONS, LTD., are not able to exhibit the "Abingdon" $6\frac{1}{2}$ h.p. two-seated car with three-speeds and reverse, of which they are making a speciality. They have, therefore, to be content with showing a Kerry $2\frac{1}{2}$ h.p. motor-bicycle, and a machine of their own construction with $2\frac{1}{2}$ h.p. Minerva motor. Among the details of these machines we notice a new belt-fastener, which we shall probably illustrate in a later issue. On the same stand are shown specimens of lamps, fur coats, etc.

On the stand of Messrs. Salmons, the REMINGTON AUTOMOBILE AND MOTOR AGENCY have on view one of the Orient motor-bicycles. The motor has a range of from $2\frac{1}{4}$ to $3\frac{1}{4}$ horse-power, and is located within the frame. The petrol tank is placed at the back of seat, and holds five quarts, or sufficient for a run of 75 to 100 miles according to condition of roads. The lever controlling the supply of mixture to the motor is placed just under the point of the saddle, and within easy reach of the rider. This lever regulates the supply of air to the carburettor, and throttles the supply of mixture to the motor when less power is required. A flat belt conveys the power to the rear wheel.

After much experiment and trial the NEW HUDSON CYCLE COMPANY, Limited, have now finally completed their standard motor bicycle, specimens of which may be seen at their stand. A view of the machine is given in Fig. 25, from which it will be seen that the engine is placed vertically in the frame, which is of special design. A noteworthy feature of the machine is the narrow tread which has been secured. This has been brought down to $5\frac{1}{2}$ in., owing largely to the adoption of the De Dion bicycle motor, the New Hudson Company being the first English firm to adopt this motor in a large way. The engine is rated at 2-h.p., the mixture being furnished by a Longuemare carburettor. The ignition is on the usual high tension accumulator system. The petrol capacity is sufficient for a run of 100 miles. Lubricating oil is stored in a separate compartment, and

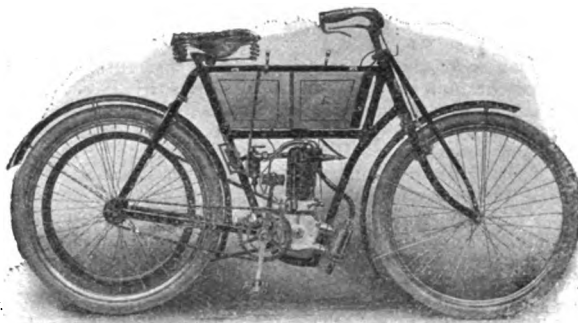


Fig. 25.—The "New Hudson" Motor Bicycle.

is supplied to the crank case through a special form of automatic sight feed lubricator. The levers for speed regulation, etc., are conveniently situated. Transmission is by a 3-ply copper sewn belt of V section, running in pulleys grooved to the correct angle. The weight of the machine when fully equipped is 87 lbs.

MOTOR CLOTHING.

MR. ALFRED DUNHILL's airships are effecting their purpose in drawing visitors to his large and representative collection of motor clothing and accessories. So extensive has his trade in the former department become, that he has recently had to erect a new factory capable of accommodating a hundred workpeople; while his exhibit is now divided into two sections, one particularly devoted to ladies' clothing. Quite a realistic interest is given the stand by the presence of a car whereon two ladies are seated in all the latest models of motoring attire. New washable dust coats constitute a section of the display, and we notice an improvement has already been made on the gauze face shield exhibited at a recent show. This is now made with a length of mica inserted in the screen, thus securing a perfect vision while shielding the face from the weather. Motor hats in straw are a novelty at the stand, whereon is a collection of leather clothing, aprons, fur garments, and accessories of all kinds. A high-class display by Messrs. W. J. LOVEGROVE AND COMPANY is a feature of the tailors' section of the Show, and in hats and caps some innovations in style have been introduced which visitors should inspect. The "Drimosit" motor rug is again made a leading feature, this ensuring a thoroughly dry person while driving or travelling, and providing a useful garment for walking. It has already been fully described in our columns and is coming largely into general favour. In leather raiment, fur coats, and ordinary cloth garments some good styles are shown. A new speciality brought out for the 1903 Show being a dust coat for ladies' wear. This is a class of garment much in demand, and Messrs. Lovegrove and Company have done their best to make the supply. The next stand is that occupied by Messrs. ABBOTTS (Abbott, Anderson, and Abbott), whose experience in connection with the equipment of yachtsmen has been brought to bear in designing garments for motorists. Silk oilskin aprons for covering ordinary fur rugs in wet weather are a fresh feature of their display, and a new rubber waterproof overcoat, weighing under sixteen ounces, is a decided innovation which should attract considerable attention during the coming summer. All their coats for motorists are characterised by a particularly wide skirt, considerably adding to their comfort when sitting on the car. All Wool motor clothing is the exhibit of main interest on the stand of Messrs. HOARE AND SONS, whose driving coats, "Auto-cloak," rubber Poncho, "Storm" smock, and combination livery suit are well adapted for the comfort and protection of motorists. A new sac coat, the "Rex," is notable for the amplitude of the skirt, which forms a warm rug covering for the knees. "The Companion's Cloak" can be worn by either lady or gentleman, thus providing a useful garment for the wardrobe of motorists who may have visitors unequipped for motoring. The new livery has already been supplied to the Viceregal Lodge, Dublin, and provides a practical combination of three articles in one. The long livery coat is fitted with a removable skirt and is specially adapted for chauffeurs' wear. When worn complete it forms a smart livery; when required for touring or country use, the lower part of the coat can be removed, leaving a jacket only. The long coat is made in thick doe cloth, and the skirt serves a doubly useful purpose, for when it is not in use it forms a rug, being lined throughout with wool. Leather clothing in great variety is also displayed by Messrs. SALSBUURY AND SON in the Gallery. Fur costumes, grey China goat coats, ladies' dust coats, the "Komilfo" coat, and other garments make up a good show, while the accessories exhibited include goggles, gloves, gauntlets, etc.

MISCELLANEOUS.

Specimens of repairs to tyres are shown by the IMPERIAL TYRE AND RUBBER COMPANY, who have recently laid down special plant in London for vulcanisation. The system adopted by the company is quite modern, they having brought from America an expert in single tube repair to superintend the operations at their new works. Specimens of tyres in a very dilapidated condition are shown, as well as other tyres which have been repaired to a condition of efficient service. The company also show some single tubes in which rubber patches have been vulcanised in—a much more secure method of repairing tyres than that usually employed. One notable feature of the display is the excellent quality of the rubber used for repairing tyres, in which department the company is doing good business.

A preparation for the repair of inner tubes and outer covers without the aid of patches, known as Patcho, is shown by PATCHO, LIMITED. This speciality is going largely into use, its merits being well recognised.

A large display of motor and brougham wheels fitted with Martin pneumatic tyres is made by the MARTIN PNEUMATIC TYRE COMPANY, LIMITED. These are so well known to motorists, and have so recently been referred to in these columns, that extended notice is now unnecessary.

The "Firestone" motor-tyre is a new speciality exhibited by Messrs. J. W. and T. CONNOLLY, LTD. This is a solid tyre, and has already been in use for six months on a motor omnibus, giving satisfactory results. Strands of cross wires are moulded in the rubber at intervals of one inch. Endless side wires encircle the whole, retaining a firm grip without cutting the rubber whilst under the strain. The system effectually secures durability, and results in a solid motor-tyre suitable for vehicles weighing from 8 cwt. to 5 tons. Messrs. Connolly also show wheels, etc. but they are wisely making the "Firestone" tyre the central feature of their utilitarian display.

Rubber tyres for motor-vehicles are on the stand of the INTERNATIONAL RUBBER COMPANY, the leading idea of which is a core of rubber running through the solid rubber tyre.

Messrs. W. and A. BATES are making an interesting display of rubber goods for motor-cars, including a new single tube motor-tyre. Non-

slipping treads for motor-cycles are a speciality, having a decidedly good feature in the five or six indentations which encircle the whole of the outer cover. "Couture," a preparation for the repair of cuts in the outer covers of pneumatic tyres, is also shown by this firm.

The RUCKER pneumatic tyres and air tubes were so fully illustrated and described in our issue of November 31st that it must now suffice to say that the principle adopted is meeting with considerable favour, and that the tyres are here exhibited by the General Guarantee Association, Limited. A layer of strong thread is wound around the tube, being creased so that when it expands the creases are pulled straight. This construction secures that, when a tube is in a tyre and inflated, the cover is distended and grips on the rim as usual. Should it, however, burst in use, the result is not a burst tyre as has been the case, but only a tyre with a burst cover. The reason is that the air tube will only expand a little beyond the inside size of the cover. It then withstands the pressure of the air within it, and maintains the efficiency of the tyre till the cover can be conveniently repaired.

THE "GARE" PATENT CUSHIONED TYRE COMPANY have a steel-covered silent cushioned tyre, in which a steel shield let into a V-shaped rubber adds materially to the strength of the tyre, and may be renewed when completely worn. The tyre will fit any ordinary channel rim. A new patent motor wheel on the stand is likely to attract much attention from makers of heavy vehicles. Two metal flanges filled with V-shaped pieces of wood tapering towards the centre of the wheel constitute the rim. Between the wood blocks are placed strips of rubber.

A large display of motor lorry wheels and wheels for lighter automobiles is made by Messrs. SMITH, PARFREY AND COMPANY, LTD., who are entering with spirit and enterprise into the business of supplying motor-car makers with wheels, springs, wings, etc. Messrs. W. AND F. THORN make a very gratifying first appearance at the Exhibition with specimens of their motor bodies, the workmanship and finish of which are alike commendable. A well-lined tonneau and a covered car top deserve notice.

A fine assortment of frames, wings, dashboards, etc., in bent timber, has been brought together by Messrs. HORTON AND SONS, who also show a wheel they made in 1866. Shafts, wheels, panel boards, in all woods, are included in the display, and the firm are catering for the requirements of motor-car builders in both English and foreign timbers.

The "Radial wheel," a new patented wheel for motor-cars, is shown by Messrs. J. LIVERSIDGE AND SON, LIMITED. The centre of the wheel is built up with a series of radial segments. These, with the feet of the spokes, form under pressure a solid centre. Flange plates are fixed by bolts through the top part of each segment. When an ordinary axle box is used, these flanges are tapered internally and filled with wood, the wheel being then boxed in the ordinary manner. The ordinary flanges with hub combined can be employed. By building the centre in this way greater resilience is said to be obtained, any severe shock to one part of the wheel being absorbed by the whole. Every line of contact in the centre is radial, so that the spokes and segments, in actual running, tend to become more tightly wedged together. No bolt passes through, the spoke thereby retaining its whole strength. In the event of a new spoke being required it can be put in without disturbing any of the others. The foot of the spoke is so that firmly held it has been possible to reduce its size without lessening the safety.

A specially wide tonneau body is on view at the stand of the INTERNATIONAL COMPANY, and MR. W. VINCENT comes from Reading with a very attractive display. This maker of motor bodies has had considerable experience in the work, as is evidenced by the character of his exhibit, which includes a well-outlined Roi des Belges body, in which are several refinements likely to be appreciated by lady passengers. A lever fitted in the door can be worked while the occupant of the tonneau is seated, to open or fasten the door, thus obviating the usually awkward means of egress. In the other motor bodies shown are removable doors below the seat, and other improvements that merit notice. The DUCHESS MOTOR COMPANY show a car fitted with a "Duchess" folding brougham top, a speciality they have made familiar to motorists. The idea is a good one, and the Duchess Company have carried it out in a very skilful and pleasing way. Artillery wheels for types of light or heavy automobiles form the exhibit of the ARTILLERY WHEEL WORKS, who have the advantage of possessing special plant for this class of work.

Messrs. CARLESS, CAPEL AND LEONARD show petrol storage tanks and packages specially adapted for the storage and transport of petrol, gasoline, lubricating oils, etc. "Spec'al Carline," lubricating oil suitable for motor-cylinders of high horse-power, and for high-speed water-cooled motors, is shown. The "S" lubricating oil for air-cooled motors as well as lubricating oils, graphite grease, and the firm's petrol are also on this stand. For the use of motorists having their own motor houses, the patent benzine safety lamp was brought out two or three years ago, it being designed upon the principle of the miner's safety lamp. This has proved very acceptable, and its presence on the stand should be noted by all automobilists.

The ELEPHANT CHEMICAL COMPANY exhibit specimens of their Motorol, Elephant motor grease, calcium carbide, calcoide, rubber solution, etc., all of which specialities are well-known to motorists.

The first stand on entering the Arcade is occupied by the AUTO-LUBRINE COMPANY, whose speciality—a pure hydro-carbon oil with a very high flash point—has the virtue of retaining its lubricating properties even at high temperatures. It also remains liquid at a temperature below freezing point. Thus, Auto-Lubrine is a lubricant of thoroughly reliable

quality. It is made in six grades, for water-cooled and air cooled motors, steam and electric motors, gear boxes, etc. Among the exhibits of the AUTOMOTOR ACCESSORIES COMPANY is Wellsaline, a motor-oil prepared by Messrs. M. Well and Co. This is specially made for particular purposes. For steam cars or luries working with saturated or superheated steam, there is motor-oil "S," and gear oil, gear grease, oils for air-cooled engines and for water-cooled motors are also prepared.

Miscellaneous requisites for motorists are displayed by Messrs. G. SKUDDER AND CO., whose collection of lubricators, accumulators, belts, and fasteners, &c., is thoroughly representative. Their name, however, is most intimately associated with oils and greases, the specialties including "Gripolene," a cream for belts, and "Skudderlene" oil for motors, gear-boxes, and chains, bearings, cylinders, &c.

A motor-car roughly and artistically modelled in metal forms the central feature of the display made by Mr. CH. BARDIES, and the lamps attached thereto are shedding forth an electric brilliance at night. A new Lenticular Projector is on view, which has the advantage of a moveable lens to facilitate cleaning the inside of the lamp. Hitherto these have been opened from the rear, but the new arrangement enables the interior of the projector to be kept entirely bright—a very essential condition. Blériot lamps and generators are an attractive display, one of the generators being capable of charging three lamps sufficiently well to last for seven days. A dashlamp for ordinary carbide or acetylene Blériot is an excellent production, giving quite sufficient light for town use, thus saving the necessity of lighting the headlights before reaching the country.

The "20th Century" motor head, side and tail lights, adapted for acetylene and for oil, are shown by the SOUTH BRITISH TRADING COMPANY, whose display includes a good grade of motor tools, and the "Sterling" tool kit, as well as the Fisk motor tyre, to which reference will be made next week.

MESSRS. SALSBUARY AND SON, LIMITED, draw prominent attention to their specialties in motor lamps, including the Salsbury-Dietz motor lamp, in which perfect combustion is secured by an ingenious arrangement of drafts. A parabolic reflector is adopted, throwing the rays of light straight ahead. To the "Salsbury-Flario" acetylene motor lamp an improved generator is now fitted, which is extremely clean in operation and can be used either with or without cartridge. For racing cars and others intended for high speeds the firm have brought out a Searchlight fitted with a lenticular lens concentrating the rays of light so that a strong beam of white light is thrown ahead. Tail-lamps, the Essanes-voiturette lamp, and other good devices of the kind are also shown, as well as a motor spirit transfer spout, motor brackets, the "Excelene" oils, motor wrenches, etc.

"The King of the Road" head light is shown by Messrs. JOSEPH LUCAS, LIMITED, in various sizes and styles of finish. This will fit any standard lamp bracket burning any good-coated carbide. When fully charged the large size gives a powerful light for eight hours. A useful side lamp for burning petroleum is also on view, fitted with a new locking stud for fixing the vessel. Motor horns of the snail and bugle patterns are on view, as well as the bracket for fixing horns on the steering wheel illustrated in the *Journal* last week. A tyre valve with left-hand thread, and which does not require to be taken to pieces to pass through the rim, flexible extensions, motor pumps, repairing outfits, lifting jacks, and the Wells-Lucas motools complete an interesting display.

Aluminium castings of every description are shown by Mr. R. W. COX, the exhibits being of generally varied interest as well as of automobile importance. Included among the other goods is a solder for aluminium, which can be used with an ordinary soldering iron, and without any special flux.

Automobilism is having a great effect on other industries, and is becoming one of the great factors in the consumption of aluminium. Not only is this evident from a glance at the stands of body builders, but the various stands devoted to motor castings afford further evidence of the fact. Mr. ROWLAND HILL, for example, has an exhibition of motor castings in all metals, aluminium looming largely in the general collection. Aluminium crank cases, gear boxes, etc., cast-iron water-cooled cylinders, valve castings for high pressure, steam and motor forgings of all kinds make up a very interesting stand. The BIRMINGHAM ALUMINIUM CASTING COMPANY have a good display of motor castings, including gear and crank case chambers, lubricator boxes, steering wheels, etc.

Stop watches and chronometers are on the stand of Messrs. S. SMITH AND SON, who also show a new clock for motor-car service. In this the base is thicker than the top, thus throwing the face forward, and facilitating reference. In the old style, the clock face being parallel with the dashboard, it was not always easy to see "the time of day," but Messrs. Smith and Son's new idea has got over that difficulty in an admirable way.

Enamel polishes, etc., are shown by the NUGGET POLISH COMPANY, LIMITED; and the CHISWICK SOAP COMPANY makes a feature of its Buttercup metal polish.

The petrol motor lawn mower introduced by Messrs. RANSOMES, SONS, AND JEFFERIES, LIMITED, is evidently meeting a public want, and with its new radiator appears a most serviceable piece of mechanism. The smallest size is of 2½-h.p., with a 24 in. cutting cylinder, and is capable of getting over between two and three acres a day.

In addition to their steam car, mentioned on another page, the ALBANY MANUFACTURING COMPANY, LIMITED, have a fine assortment of accessories for all interested in light steam cars, including condensers, petroleum burners, etc., and a new return water system as applied to steam cars. The Albany burners can be started in three minutes, and the new pattern

has the induction coil below the casing. They are made in gun-metal, steel, and nickel, so constructed as to break up and burn both light and heavy hydro-carbons—an important feature for those who tour in out-of-the-way places, and may have to use miscellaneous oils and spirits. The Lamplough-Albany system for the primary and secondary generation of steam in series is also exhibited. It is claimed to effect a saving of from 30 to 40 per cent. in fuel consumption, and an instance has been given us in which a car running at 20 miles per hour only consumed three gallons of petrol in a run of forty miles when fitted with the generators. Previously it had only been capable of doing sixteen miles per hour on a consumption of one gallon of petrol for every ten miles. New interest is given to the display by the presence of a radiator for petrol cars. This is of the Mercedes type, tubes of 3 in. length being utilised, the edges being expanded hexagonally, and jointed up so that only the minimum of air resistance is offered.

A miscellaneous collection of sundries for motorists is shown by Messrs. BINNEY AND SON, including leather belting, gun metal steam fittings, wood pulleys, lubricators, tools, etc. Some excellent lubricants are on the stand. GARLIO is a well-known cloth for cleaning and polishing metals, etc., and is shown in various sizes in the Arcade. The non-inflammability of this speciality is one of its great merits.

Insurance companies are recognising the possibilities of automobilism, and several are catering specially for the new conditions. The HORSE, CARRIAGE AND GENERAL INSURANCE COMPANY, LIMITED, are granting double-risk policies, and also indemnify their clients against claims by third parties for injury to persons or property. At the stand of the LAW ACCIDENT INSURANCE SOCIETY, LIMITED, information is being given concerning the special insurances for motor-car owners, arranged by that institution. These include indemnities against personal injury to owners, drivers, and passengers, claims for damage, accident, fire, and burglary. There is no restriction imposed regarding speed, and the policy has the advantage of not being subject to average. In the Gallery the GENERAL ACCIDENT ASSURANCE CORPORATION take advantage of the opportunity to make motorists acquainted with their terms of business. Mr. Alfred Nixon is the superintendent of their motor insurance department, which is being developed to considerable proportions.

In addition to steam and petrol cars, Messrs. J. COCKSHOOT AND COMPANY, LIMITED, as British agents for the Locke Regulator Company, make a display of this concern's specialties in the way of engines, boilers and accessories for steam cars. The Locke steam-engine is made in two sizes—10-h.p. and 4½-h.p. The working parts are made of case-hardened, drop-forged steel, while the piston rods and valve stems are of Tobin bronze. The crank shaft, crank pins, and eccentrics are, we noticed, provided with ball bearings. The 10-h.p. engine has two cylinders, 3½ in. diameter by 4 in. stroke, while the dimensions of the 4½-h.p. type are 2½ in. by 3½ in. Attention may also be drawn to the Locke burner for steam boilers using petrol as fuel.

To protect the occupants of motor-cars from the dust which not only follows but also settles upon them, a simple and effectual screen has been devised by the DUST SCREEN COMPANY, of Forest Gate, E. The inventor is a motorist who, having experienced the dust nuisance, has applied himself to its mitigation. The screen is of sailcloth on an aluminium framework, which opens and closes like a fan. It is fitted on the door of the car by thumbscrews, so that no obstruction is placed in the way of entering or leaving the vehicle, and when seated the straps are fixed to the studs at the side. The screen thus open is at such an angle as not to interfere with the view or obstruct the wind, while preventing any dust reaching the passengers. A small nickel plate on the top of the door and the two studs on the side of the car are the only permanent fixtures, the screen folding up, when not in use, to a length of 38 in., and a width of about 4 in., the weight being only 5½ lbs. The screen can be fixed in less than a minute, and extended in a few seconds, and may be regarded as one of the useful novelties of the Show.

Mr. F. C. BLAKE, of Kew Gardens, S.W., generally has an interesting display, and this year is no exception to the rule. We first examined a 12-h.p. four-cylinder petrol motor; the cylinders, which are cast in pairs, are 90mm. diameter by 102mm. stroke, the normal speed being 900 revolutions per minute. Among the details of the engine which are worthy of inspection are the large bearings on the crank shaft, and the inspection doors in the crank chamber. A two-cylinder engine of similar design and dimensions is also shown, this developing 7-h.p. at 1,000 revolutions. Engineering visitors to the Show will be interested in the parts of a 60-h.p. four-cylinder motor Mr. Blake is building for use on a schooner. This has cylinders 135mm. diameter by 160mm. stroke. The Blake electric ignition distributor for four-cylinder motors is well worthy of inspection. Without drawings it would be difficult to describe this device, by means of which only one coil is necessary for the sparking of a four-cylinder engine. Among Mr. Blake's other specialties are a new high-speed trembler induction coil (Emmerson's), sparking plugs, water and petrol tanks, radiators, etc.

Gas engines by some of the leading makers are shown, Messrs. CROSSLEY BROTHERS having engines of the "P.E." and "R." types, the former being a high-speed electric lighting gas engine capable of developing 18-h.p. as a regular working load. The NATIONAL GAS ENGINE COMPANY, Limited, show their well-known engines; the Stockport gas engine is on the stand of Messrs. BILBIE, HOBSON AND CO.; and the FORWARD ENGINEERING COMPANY have also their 2½, 6 and 7-h.p. Forward engines on view.

(To be continued.)

IMPORTS OF MOTOR-CARS, MOTOR-CYCLES, AND PARTS THEREOF.

BELOW we publish our official list of the imports of motor-cars, motor-cycles, and the parts thereof, into the United Kingdom during the month of January, 1903.

BELGIUM.

				£
Antwerp	London	Motor cars	4	625
"	Harwich	"	4	460
Ghent	London	"	—	195
Ostend	"	"	20	3,269
"	"	"	31	1,118
"	"	"	—	152
"	Dover	"	—	16
Brussels	London	"	—	210

Total imports from Belgium in January, 1903 ... £11,045

FRANCE.

				£
Boulogne	Folkestone ...	Motor cars	29	7,804
"	"	"	—	2,181
"	"	"	5	210
"	Goole	"	4	1,460
"	London	"	130	48,624
"	"	"	—	896
"	"	"	2	110
Bordeaux	"	"	—	10
Calais	Dover	"	1	420
"	"	"	—	212
Dieppe	Newhaven ...	"	—	8
"	"	"	—	3,226
"	"	"	186	61,536
"	"	"	30	1,076
Dunkirk	Leith	"	5	730
Havre	Southampton	"	1	100
Paris	London	"	1	250
Rouen	Glasgow	"	2	1,200
"	"	"	—	12
"	London	"	1	250
"	Swansea	"	1	220
Treport	London	"	1	340

Total imports from France in January, 1903 ... £130,875

GERMANY.

				£
Bremen	London	Motor-cars	10	3,030
Hamburg	Grimsby	"	1	50
Stettin	London	"	1	400

Total imports from Germany in January, 1903 ... £3,480

HOLLAND.

				£
Amsterdam	Bristol	Motor-cycle	1	35
Rotterdam	London	"	20	4,375
"	"	"	—	67

Total imports from Holland in January, 1903 ... £4,477

UNITED STATES.

				£
Boston	London	Motor-cars	8	2,256
"	Manchester	"	7	750
New York	London	"	14	1,975
"	"	"	2	200
"	"	"	—	727
"	Southampton	"	11	3,750
"	"	"	—	1,440
"	Liverpool	"	—	600
"	Bristol	"	—	746

Total imports from the United States in January, 1903 ... £12,484

ONLY eighty gallons of petroleum spirit were imported into this country during February last, as compared with 688,240 gallons in the preceding month.

THE Holderness Motor Company, Ltd., has been registered with a capital of £10,000. The first directors are Messrs. R. J. Jackson (chairman), R. D. Bradford, and J. M. Wilson.

CORRESPONDENCE.

THE OLDSMOBILE CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have had for the past three months an "Oldsmobile," and ridden it every day. After putting in a new coil, with Charpentier trembler. I have had not the slightest trouble, and have driven it a few hundred miles. Last Friday I drove it to London, including stops, in seven hours, and back on Sunday to Cheltenham in about the same time. The petrol consumption was about one gallon for thirty miles, and I could have driven all the way (100 miles) on one tank of water, but put in some two quarts, which was not needed. The good points of the little car are quick starting, always ready, a good hill climber, and non-slipping. The speed on good roads is about eighteen miles per hour. It is an ideal car for one who only wants ease and comfort in travelling. I have no interest in writing this but to let those who want a good, cheap car know of my experience.—Yours truly,

H. FERNALD.

THE NUMBERING QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a Club member of four years' standing, I wish, with your permission, to offer an emphatic protest against Earl Russell assuming that he voices in any degree the sentiments of the provincial members of the Automobile Club, when showering acrimonious abuse on our hard-working committee.

His Lordship, in his strange letter of March 13th, which appeared in your last issue, launches many curious charges against a body of gentlemen who have managed, with singular ability and success, the affairs of the Automobile Club of Great Britain ever since the introduction of the motor-car into this country. If a ballot were taken, as he suggests, to decide between himself and the "domineering oligarchy" at present directing our fortunes, the democratic Earl would possibly be surprised at the extent of the support he fancies he possesses.

I have not yet had an opportunity, during the hunting season, of learning the views of a single member of our governing body, but, in my humble opinion, carrying some means of identification is preferable to being summoned and fined £10 by nervous J.P.'s as often as we place our bonnets beyond the protection of our lodge gates.—Yours truly,

EDWARD KENNARD.

P.S.—I am the owner of "Sir Charles," and "Charles II.," by which names my cars can be easily identified.

CHAINS AND LIVE AXLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the correspondence which is now taking place in the *Journal*, in which I take a great interest, there seem to be one or two things overlooked. Firstly, we are constantly having illustrations of what engineers have done for many years imported into motor-car manufacturing, and although in many cases this is correct, in many others it has no bearing; for instance, the fact is forgotten that where bevel gearing is mostly used in engineering it is driven by a stationary engine on a firm bed and the transmission of equal firmness, which is altogether different from a car that is driven by an engine which varies in horse-power every mile and is by no means regularly run, more wear and tear necessarily consequently resulting.

Taking the pros and cons of the two transmissions, we must firstly not forget that the motor and the road are the prime factors to be considered, and the easiest transmission from one to the other is the one that we require in motor-car construction, and from an engineer's point of view the divided or serial transmission is the desiderata. In the chain principle we first of all conduct the drive from the engine to the countershaft and differential gear, thus carrying the transmission with its first work half way on to a fixed object that is not affected by any road vibration and is coupled direct to the engine. The power is then transmitted from this point direct to the road by chains, of which there is nothing better to take up vibration and also to counteract any erratic action of the first drive. In the Cardan principle we are deliberately taking the transmission from the motor at the front to the differential gear in the centre of the axle at the rear of the car and then transmitting to the road through the wheels some two feet each side from the centre of the axle and drive. This seems a great loss of power independent of any weakness. The differential was invented for the balancing of the car, but in the Cardan principle it is not only used for driving purposes but also has to take up the greater proportion of the weight of the car, whereas in the chain principle it suffers very little inconvenience from the drive, and certainly carries out its balancing object independently and bears no weight whatever.

I now come to the reliability portion. The majority of the purchasers of motor-cars are certainly not engineers, it is therefore advisable to give them not only something they can see, but can repair, if necessary. Consequently if a chain stretches or breaks this can be attended to by the roadside, but if anything happens between the gear box and the differential of the Cardan principle it means a workshop job. There is a certain amount of wear which must necessarily follow in both drives—in the chain system the chain

stretches and is easily adjusted; whilst in the Cardan principle there is very little adjustment (and certainly absolutely none in most cars) consequently the wear has to be taken up by a sag in the differential, hence the reason for the wheels closing inwards at the top in most cars on this principle.—Yours faithfully,

SYD. D. BEGBIE, A.M.I.M.E.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—“Jack-in-the-Box” seems to have lost sight of the fact that many cars use the bevel gear to drive the shaft carrying the sprocket for the chain. I believe all, or nearly all, cars have some form of gear in addition to the chain to transmit the power from a longitudinal to a transverse shaft. Surely the extra friction thus produced is greater, or at any rate as great, as the friction produced by a direct drive on a live axle using bevel gear only.

I have often wondered why the engine of a motor-car should not be placed so as to produce a transverse drive, and so do away with bevel and such like gears altogether?—Yours truly,

H. G. L. A.

TO EPPING FOREST.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In the “Comments” in last week’s issue you allude to the wretched roads leading out of London eastward towards Epping Forest. I reside at the commencement of these sylvan glades, and very often drive my car into the City. There is an alternative route via Bishopsgate, Bethnal Green Road, Approach Road, through Victoria Park, Hackney Marshes, Temple Mills, Leyton High Road, and St. James’ Lane, which leads into the Forest at Whips Cross Road.

This route would be far and away the best out of London for all these parts but for one half-mile. I refer to the road across the Marshes. Not only is it worse than any track across fields that one can possibly imagine, but, to crown all, there is a toll to pay of 2d. for all vehicles. Even the cyclist has to disgorge his penny. Fancy a toll-gate within gunshot of the City, and a cart track that beggars description within shouting distance of the London County Council.—Yours faithfully,

H. H. SUMMERS.

ALLEGED BREACH OF CONTRACT

MR. JUSTICE CHANNELL has had before him in the King’s Bench Division the case of *Musman v. the London Motor Garage Company, Limited*. The action was brought to recover £210 money paid as deposit for the purchase of a Lanchester motor-car, and for damages by reason of alleged non-delivery according to contract. The defendant company did not admit the contract alleged. They denied any breach of any contract if one was made, and pleaded that the plaintiff himself had rescinded and by letter given instructions that the delivery of the car should be postponed. During the course of the proceedings, counsel having consulted, it was announced that the case was settled. The terms were not stated.

CLAIM FOR ELECTRIC MOTORS.

BEFORE Mr. Justice Wright, in the King’s Bench Division, the case of *Marryat and another v. Anti-Vibrator, Limited*, has been heard. This was an action brought by Messrs. Marryat and Place, electrical engineers, Hatton Garden, E.C. against the Anti-Vibrator, Limited, of Croydon, to recover £171 in respect of work done and damages for alleged breach of an agreement. The defendants denied liability. In the early part of 1902 the defendants required some electric motors for cars which they were constructing, and they entered into communication with the plaintiffs. In May the plaintiffs came across some motors which were being manufactured at Brunswick, in Germany, and they alleged that after some negotiations the defendants ordered twelve of these motors, two to be delivered in a month and the remaining ten at the rate of two a month. Two were delivered to the defendants, and certain work was done to the other ten before the order was countermanded. The plaintiffs contended that they were entitled to £66, the price of the two motors delivered, £44 in respect of work done in connection with the undelivered motors, and £45 for loss of profit. The defendants alleged that the motors would not fit their cars, and they were not in accordance with contract, and that therefore they were entitled to reject them. Mr. Justice Wright, after hearing the evidence, found for the plaintiffs for the value of the two motors, and for the defendants with regard to the other ten. The plaintiffs were allowed £20 costs.

DAMAGES AGAINST A MOTORIST.

J. C. BARTON obtained £200 damages from Valentine G. New, of Evesham, at Birmingham Assizes, on Saturday, for injuries sustained in a motor-car accident. Plaintiff, a man of seventy, was crossing a road when the defendant, who, it was alleged, was driving a motor-car at twenty or thirty miles an hour, ran into and severely injured him.

MOTOR-CAR ACCESSORIES.

H. A. PERRY, of Brighton, sued E. Elliott-Pyle, of Hove, for £4 5s., or the return of certain accessories to a motor-car. The plaintiff bought a car from the defendant and claimed the pump, jack, horn, and box of tools which were on the car when he purchased it, but for which he alleged inferior articles were substituted. Defendant said he told the plaintiff that all the accessories in the car did not belong to it, and that he would get him others rather than have any trouble about it. His Honour found for the plaintiff for the amount claimed.

NEGLIGENT DRIVING.

JUSTICE DARLING has heard a case in which Thomas Broadbent, Birmingham, sought to recover damages from E. L. Jacobs, of The Rookery, Handsworth, for personal injuries and injury to a horse by, as alleged, the negligent driving by the defendant of a motor-car. After a long hearing the jury found for the plaintiff, with damages £30. Judgment was entered accordingly.

REFUSING TO STOP.

At the Bulmer East Petty Sessions, at York, C.A. Midgley, the electrical engineer to the York City Council, has been summoned for refusing to stop his motor-car when requested by the driver of a restive horse. The complainant, Mr. J. Wood, of Brandsby, was driving a pony which had never seen a motor-car, and as the defendant approached he pulled up, while a gentleman held the pony and held up his hand to the defendant to stop. Defendant was alleged to have refused to stop, and drove on at a high speed. The pony reared, and then smashed the cart and fell to the ground in terror. Mr. Crombie, for the defence, said that the defendant never saw Mr. Wood put up his hand. The defendant was fined £5 and costs.

SEQUEL TO A TEST RUN.

THE record has been closed by Lord Kincairney, in the Court of Session, in an action by Components, Limited, Bournbrook, Birmingham, against the Edinburgh and District Tramways Company, Limited, to recover the sum of £500. On the morning of Thursday, August 21st, 1902, one of the pursuers’ cars started from the G.P.O., Edinburgh, at 3.30, in charge of Charles Sangster, managing director of the pursuers’ company. Mr. Sangster was accompanied by an official timekeeper of the A.C.G.B.I., the intention being to drive from Edinburgh to London to test the reliability of the car. When opposite Carlyle Place, London Road, the car came into collision with the projecting solid iron doors of one of the tramway manholes in the middle of the street, which are said to have been standing open. The market value of the car was not less than £750, and the pursuers say that the sum sued for—£500—is a moderate estimate of the loss they have sustained by the collision, which is said to have been caused by the fault of the defenders in failing to have a lamp placed at the manhole, and a man to warn approaching vehicles of the danger. The defendants deny fault. They say that only one of the doors of the manhole was open, and that the car was, contrary to statutory regulations, travelling at the rate of about twenty miles an hour, and was being recklessly driven. The accident, it is maintained, was materially contributed to by the negligence of the driver of the car in failing to keep a proper lookout, and by the excessive speed at which he was driving. In another action Mr. Sangster, the driver, sues for £50 damages for personal injuries which he sustained in the collision. Issues have been ordered for the trial of both actions.

A MOTORIST DISCHARGED.

At the Leeds Assizes, on Saturday, before Mr. Commissioner Lawrence, the two days’ trial of Haydn Lee was concluded. He is an engineer student at the Yorkshire College, and was charged with the manslaughter of Arthur Thackray, a tramcar conductor employed by the Leeds Corporation. On December 12th, Mr. Lee was driving a motor-car, when, on a steep incline in Headingley Lane, Leeds, the car knocked down the conductor of a tramcar, dragging him for some distance and causing his death. Witnesses varied in their estimate of the speed of the motor-car from eleven to twenty-five miles an hour. Some of them did not hear a horn blown by the motorist. The accused, who called many witnesses to support his statement, said he was not driving at an excessive speed. He was found not guilty and discharged.

AN ECHO OF “LE PASSE PARTOUT.”

DR. LEHWESS, of 66, Holland Park Avenue, Notting Hill, was summoned on Tuesday, at Marlborough Street Police Court (London), for exhibiting an advertisement in Hyde Park in April, 1902. The defendant was starting on his automobile tour, and was seen by Constable Mungo-Park, A Division, with his “caravan,” proceeding through Hyde Park. The cars bore the words “Passe-partout,” which the defendant contended was a fanciful name for the car, and in no way advertisements. Dr.

Jehwess produced photographs of cars. Mr. Denman said he did not think this was an advertisement. There was no statement of "This" style £1,000," or anything of the kind. The summons would be dismissed.

CARRIAGE BUILDERS' LIABILITY.

At the Southwark County Court, on Monday, Judge Addison, K.C., gave judgment in an action in which Montague Napier, trading as D. Napier and Son, of Vine Street, Lambeth, sued Messrs. Bayley, Limited, of Newington Causeway, to recover £45 8s. 10d. damages for breach of contract. The plaintiff's case was that they had an order from a customer for a motor trolley for £750, and they put out the whole of the body work to the defendants to make for £225. The body was delivered, and the motor having been fixed by the plaintiffs, they sent it out with a load of five tons evenly distributed for its hill-climbing test at Dashwood Hill. The trolley had, however, been out only a few hours when the near hind wheel became hot, and although plenty of oil was poured into the grease chambers it "seized" and brought the trolley to a standstill. A local firm of engineers had to chip the axle-box off the axle and had to supply a new axle and pair of wheels, the former being made of gun metal. The old one with the axle-boxes was composed of cast steel, and it was contended that, the casting being faulty, the hub of the wheel cracked, threw it out of gear, and thus caused the wheel and the axle to become grooved and to "seize." In addition the grease channels were faulty, and the grease was consequently prevented from getting round the axle. Much evidence was given on behalf of the defendants to show that the work was well and properly done, and that the trouble was caused through the plaintiffs not properly removing some grit from the axle-box. After a hearing which lasted two whole days, his Honour took time to consider his decision. In the course of his judgment he said that the whole case narrowed down to the fact that the grease channels (which were a thirty-second of an inch wide) were not large enough to allow the grease to properly lubricate the wheels. That was a structural defect for which Messrs. Bayley were liable, but no possible reproach could be cast upon them because of that. He was obliged to find for the plaintiffs, and he put the damages as low as possible, namely at £35. He hoped that the two firms who had had to suffer for a thing that was still in its infancy and in an experimental stage would make up their differences and not allow that case to interfere with their business relations. Judgment was entered for the plaintiffs for £35 and costs.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Newbury	A. Bennett, Newbury	—	10s., etc.
Southport ...	R. Colgate, Birmingham	—	20s., etc.
Marlbo' St. London	A. Gentili	—	Remanded.
Brighton	F. Muhlenkamp, Brighton	—	£5, etc.
"	H. Maffert, London, N.	—	£3, etc.
Horsham	Hon. C. S. Rolls	30 m. p. h.	£2, etc.
Nottingham ..	G. Hart, Nottingham	21 m. p. h.	30s., etc.
Arundel	Mrs. E. Wigley, Kingston Hill	19 m. p. h.	Dismissed.
Tunbridge Wells	A. E. Waddington, Frant	25 m. p. h.	£2, etc.
"	P. S. May	22 m. p. h.	£1, etc.
"	H. O. Hall	—	£1, etc.
Shoreham ...	J. Spicer, Chippingham	—	£5.
Horsham	W. Robinson, Clapham	26 m. p. h.	40s., etc.

Where no alleged speed is given it is understood to be above the legal limit.

ALBAN GENTILI, a motor-car driver, of French nationality, was charged, before Mr. Denman, at the Marlborough Street (London) Police Court, with furiously and recklessly driving a motor-car in Hyde Park, and causing serious bodily harm to William Smith, of 11, Harleyford Street, Vauxhall, S.E. After hearing the police evidence, Mr. Denman remanded the prisoner, remarking that it was not the first case of the kind that had come before him. Bail was allowed in two sureties of £50 or one of £100.

At Horsham, on Saturday, the Hon. C. S. Rolls was fined £2 and 6s. costs for driving a car at an excessive speed at Ifield on March 8th. The police evidence was that a quarter-mile was covered by the car at the rate of thirty miles an hour. Defendant wrote to the magistrates that it was only the second time in his experience that he had been stopped. The first occasion was before 1896, for not carrying a red flag in front of his automobile.

On Thursday week, Mrs. Ellen Wigley, of Brunswick Road, Kingston Hill, London, was summoned for driving a motor-car at Arundel at a greater speed than twelve miles an hour—to wit, nineteen miles an hour. Police evidence was that a third of a mile was covered in one minute 2½ seconds. In the course of cross-examination, Mr. Staplee Firth asked the

constable if he liked the occupation of catching motorists, when the following discussion took place:—The Chairman: You need not answer that question. Mr. Firth (to the Chairman): It seems that, instead of hearing the evidence, you are acting as prosecution. The Chairman: We cannot allow gentlemen to come down from London and ask our constables whether they like the occupation. Mr. Firth: I am entitled to cross-examine. I have had several cases where it has been shown there has been too much bias and eagerness on the part of constables—where they have overshot the mark. I have been practising before the Justices of the High Courts for fifteen years, and I ought to know what I am talking about. After the speech of Mr. Firth the Chairman announced that the case would be dismissed, remarking that the Bench found some difficulty in deciding in this instance. They were not quite clear whether the car was going nineteen miles an hour, and, therefore, gave defendant the benefit of the doubt.

MOTORISTS travelling between Romford and Brentwood are warned that the police are on the look-out for too-speedy motorists, the telephone being freely used between the two places.

THAT Mr. Gardner D. Hiscox's treatise on "Gas, Gasoline and Oil Engines" has become a standard work is evidenced by the receipt from the publishers—Messrs. Sampson Low, Marston and Company—of a copy of the tenth edition. Mr. Gardner is an American engineer, and therefore it is not unnatural that the motor productions of the United States should receive the principal share of his attention. There is, however, much in the book which will be found useful to all desirous of obtaining information with regard to the principles underlying the internal combustion motor. After dealing with that theory, the author discusses the question of retarding combustion and cylinder cooling, the causes of loss and inefficiency in explosive motors, silencers, governors, lubrication, engine testing, etc. These are only a few of the subjects, taken at random, dealt with, but they are sufficient to show the exhaustive character of the work.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, APRIL 4, 1903.

[No. 213.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



IN the House of Commons, recently, Sir W. B. Gurdon moved the second reading of a Bill which declared in its main enacting provision that "every innkeeper shall supply the reasonable demands of every traveller for board, lodging, refreshment, and other accommodation of a like nature, if he has at his disposal accommodation of the nature and character demanded." It is the law at the present time that an innkeeper is bound to supply "reasonable refreshments" to anyone calling for them; but, according to Sir William Gurdon, it is no uncommon thing for the law to be set at defiance, and for innkeepers to be so absorbed in the serving of drink as to neglect the supply of food altogether. Moreover, the process of bringing to book a licensed victualler who will not serve victuals is cumbersome and expensive. Under this Bill a landlord not providing food can be brought up before a court of summary jurisdiction and fined £2 for a first offence. With the provisions of the measure motorists will be found in cordial agreement.

After the Show.

Now that the Automobile Show at the Agricultural Hall, London, has come to a close, it can be pronounced a complete and unqualified success. The exhibitors practically without exception reported a large attendance of the most desirable class of visitors during the whole week, and many sales were made, while at the same time much good seed was sown that will ripen in the future. The public were well satisfied with what they saw, and they could hardly be otherwise. The exhibits showed that many of the crudities and mechanical faults in the vehicles exhibited only a few months ago had been eradicated in the interval, and that the watchword of the manufacturers during 1902 had evidently been: "Good automobiles first; then cheap automobiles." This policy is certainly an excellent one, and one which if adhered to in the future will make the British automobile the standard of the world and ensure its complete success at home.

Orders Taken at the Motor-Car Show.

BUSINESS of a satisfactory character was reported by exhibitors at last week's Automobile Exhibition, said the *Daily Telegraph* on Monday. "The chief demand was for light cars, at prices in the near neighbourhood of £500, and a representative of a French firm making a vehicle of high reputation stated that he had secured orders for forty of them, while other exhibitors returned their sales at £5,000 to £10,000. A leading firm of agents sold eighty cars during the show, and as most of them were of a big and expensive type, their value would not be far short of £50,000."

Trial Trips.

THE experience of most of the exhibitors was that the visitors demanded to be shown and have explained the operating principles of the machines, and with few exceptions firms had made provisions to meet this demand. On nearly every stand was shown at least a chassis and sometimes also separate engines, transmissions and other parts. The rule prohibiting the use of petrol in the building prevented machines being shown running under their own power, but advantage was taken of the streets in the locality for giving likely purchasers an opportunity of judging of the way in which cars can be controlled in traffic, a practical test appealing to inquirers far more strongly than merely manoeuvring in enclosed grounds.

An Inaugural Run.

THE first run of the Wolverhampton and District Automobile Club took place on Saturday last, the destination being Newport. En route members made a brief stoppage at Wrottesley Park. The captain of the day was Mr. W. G. Owen, who drove a 10-h.p. Wolseley, and there were also present:—Messrs. O. Evans, G. Evans, F. W. Bayliss, F. C. Bishop, H. Lewis, Davis, Birbeck, S. R. Rhodes, Stratton, Dark, Cureton, Pullinger, H. L. Laurie, Trusselle, Dixon, T. Mills, Captain Haden, E. Lisle, jun., Herbert. The motor cars carried with them, as passengers, thirty-nine members and visitors.

Educating Road Surveyors.

THE Lincolnshire Club has had a happy inspiration in inviting all the road surveyors of the county to lunch at the Faracen's Head Hotel, Lincoln, on the 16th inst. This will take place at one o'clock, and the members of the Club will be expected to take the local road surveyors from their districts and to take them home again. Vacant seats are to be offered to personal friends whose interest may be useful to the movement. Mr. W. Garfit, M.P. for Boston, will preside, and Mr. Rees Jeffreys will read a paper.

Automobilists and Cabmen.

WHILST Mr. Mark Mayhew, L.C.C., was driving his motor-car along the Victoria Embankment a few days ago, he overtook a hansom cab, the driver of which was towards the middle of the road on his wrong side. It was therefore necessary for Mr. Mayhew to sound his horn in order to warn the driver of the hansom of his approach. Having done this he drew alongside. The cabman thereupon commenced using most abusive language to the motorist, who told him that if he (the cabman) did not withdraw the offensive language which he had used towards him, he (Mr. Mayhew) should take steps to punish him. Upon this the cabman became still more abusive. Mr. Mayhew then called a policeman, whom he requested to take the cabman's number, name and address. At the police court Mr. Staplee Fifth appeared for the prosecution, and after the case was heard the magistrate fined the cabman

the full penalty, namely, 40s. and 2s. costs, or 21 days' hard labour. Mr. Mayhew is to be thanked for having taken this step in the interest of users of the road, and it is sincerely hoped that it will have the effect of checking the annoyance to which automobilists are so frequently subjected by some of the London cabmen.

The Carriage of Motor-Cars by Rail.

THE general council of the Scottish Automobile Club is bringing this subject under the notice of the railway directors north of the Tweed. The charges made for the carriage of motor-cars are high, and as they appear to be uniform, they are specially hard upon owners of small types of cars. The owner of a car costing £150 is called on to pay as much for railway carriage as the owner of a car costing £1,500, which may weigh three or four times as much as the former. When a motor-car is railed at least one person is likely to travel with it, but as matters now stand owners often put themselves to some inconvenience to go by road. At present the high rates in Scotland induce owners to send their motor-cars by sea whenever that is possible, but this is a means of conveyance which they would gladly avoid if the railway rates were more reasonable. Thus a motor-car sent from Paris to Edinburgh—rail to Dunkirk and ship thence to Leith—costs £3 for a small one and £5 for a large one. Freight by sea from London to Leith on a small car is only 14s. Any size sent by rail from London to Edinburgh costs about £10.



A New Motor Mail Cart, built by the Eagle Motor and Engineering Company, and adopted by the G.P.O. authorities for the rapid transit of Letters in the Metropolis. [Photo by] Bassano's, Ltd.

A Comparison.

THE French railways recognise the motor-car as a powerful competitor, and therefore use every effort to encourage owners to send their cars by train. Not the least attraction which they hold out in this respect is very low rates for carriage. From Paris to Boulogne (160 miles) the charge by rail is only 27s.; and by that route a car weighing over 1½ tons can be brought from Paris to Edinburgh at a cost of under £10. It is needless to multiply instances to show that, while in France every inducement is given to encourage an owner to rail his car whenever this is more convenient to him, in this country the high rates of carriage are largely prohibitive. There are many occasions on which, on account of the weather, condition of roads, early starts, or long distances, automobilists

would find it convenient, if any inducements were offered, to make a more general use of the railways for the transport of their cars and of themselves and their friends, than they do at present.

Club Runs.

ON Saturday the Western Section of the Scottish Club had the first run of the season to Ayr, and, despite the discouraging weather, a pleasant time was spent. Fifteen cars—comprising three Belsize, five Daimler, two Wolseley, and representatives of the Panhard, Clement, Argyll, De Dion and James and Browne cars—attended the opening run of the Manchester Club to Congleton on the same day.

Automobilism in Malta.

THE American Consul at Valetta has recently prepared a report on automobilism in Malta, from which we take the following:—Manufacturers of automobiles should bear in mind that Malta does not possess, as a rule, long, level stretches of road. There are many steep hills—some of them having a gradient of 1 in 9. Vehicles should be much more powerful than is the rule in the United States. When possible, it is better to give prices c.i.f. Malta. If information as to the cubic measurement of the vehicle as crated or boxed for shipment can be given, it will add to the satisfaction of the purchaser. There are already several cars in use, and correspondence is now being carried on between probable purchasers and makers. One firm desires to secure large vans for the delivery of goods. No fault is found with petrol cars except that it is somewhat difficult at times to procure petrol on account of local laws.

No Petrol.

PRESSMEN often have a strange feeling of sympathy with the drivers of motor-cars when indulging in runs for the purpose of literary reference. The anxiety of the manufacturer or agent to see that everything is in order, that the rugs are in position for the comfort of the journalist, and the general scrutiny of the car that always precedes the mount, is interesting. Such incidents are necessary, especially when the carelessness of the average attendant at the garage is considered. We remember once having such a trial run, and when we had gone about a couple of miles the engine slowed down and stood still and silent amid the hustling traffic all around. The petrol tank was empty—the filling of that receptacle being such an ordinary commonplace experience that preliminary questions on the point had been discounted as unnecessary. But it is the unexpected that happens—in automobilism as in other things.

Local Authorities and Automobiles.

COUNTY surveyors and others frequently engaged in tours of inspection or enquiry are finding the automobile a great convenience, and last week several leading men engaged in municipal work were among the visitors to the show. Among these was Mr. J. A. Brodie, the city engineer of Liverpool, whose Council is considering to allow him an annual sum for providing and maintaining a motor-car for his use in lieu of the present allowance for horse hire. The chairman of the Main Roads and Bridges Committee of the Lancashire County Council, Mr. W. B. Hulton also makes frequent use of an electric brougham when making journeys in the public interest.

Engineers and Motor-Cars.

COMMENTING on Captain O. O. Longridge's recent paper at the Institution of Mechanical Engineers, the "Engineering Magazine" remarks that it is interesting to perceive how the motor-vehicle has become one of the most important subjects for discussion among engineers, thus forming at the same time a matter for science and for recreation. Ultimately there is little doubt that the motor-vehicle industry will take its place as one of the great manufacturing occupations of the industrial world.

ranking with locomotive and steamship building, since the machine must supersede the animal over the entire world. It is well, therefore, that it has thus early come into the hands of the engineer, and that he will prove equal to its solution no one can doubt.

Some Little Refinements.

WITH most of the new models now before us, it seems a pity that attention is not given to little refinements. A tap at the bottom of the carburettor is an addition found on very few cars, but what a useful addition it is—the carburettor floods, you empty it, without taking any pipes down, or taking any part of the carburettor to pieces; dirt or water finds its way into the petrol; empty the carburettor by the tap, and make a fresh start. A little refinement like this is better appreciated when the trouble occurs in the dark, as it very often does. Again, how many cars are fitted with a petrol gauge?

railway trains. Possibly the idea is one that will find approval by the police authorities, and may yet be used in evidence against motorists.

What of the Future?

WE shall perhaps be using a commonplace if we remark that the automobile of 1903 is a far more gainly-looking construction than was that of any preceding year, and a dozen times more acceptable in design than was the automobile of motor-car emancipation year, 1896. Thus comments the "Electrical Review," in the course of an article on modern automobiles, from which we take the following extract: "Six years' exercise of inventive ingenuity, together with six years' careful attention from the coach-builder and the motor-equipment manufacturer, have worked marvels. Who shall say what the next six will accomplish? We falter when we touch this phase of the subject, for electrical progress is sometimes given to

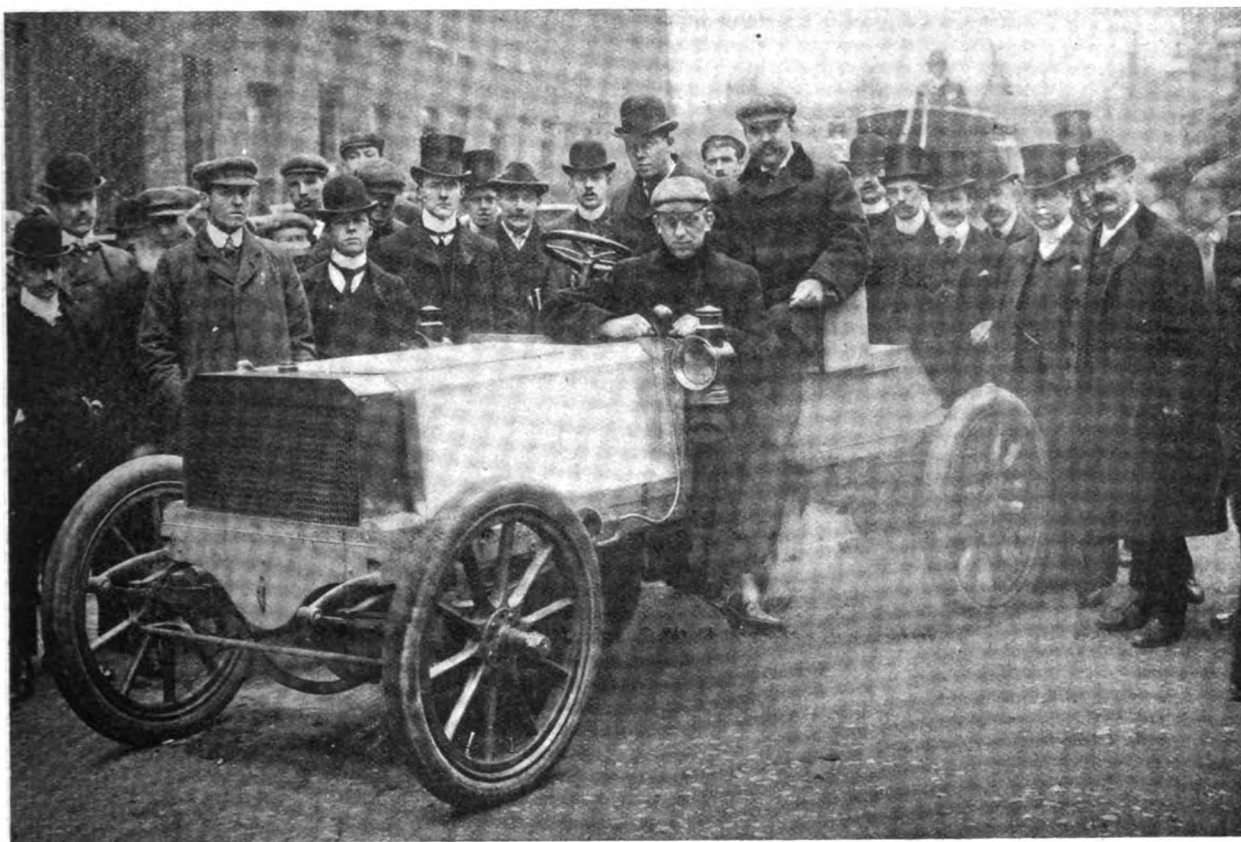


Photo by]

The "Star" Gordon Bennett Racer leaving the Agricultural Hall. (See page 85.)

[Argent Archer.

There is nothing more annoying than to be uncertain as to the quantity of petrol in one's tank, and how very simply the difficulty can be avoided! A very useful addition to a modern motor-car, in fact it is almost a necessity, is a little four-volt lamp with flexible wire. It serves a double purpose; it will tell you if your batteries are low, and it will enable you to effect little adjustments at night time, with ease, comfort and safety. The *tout-ensemble* of motoring is good, but little refinements make it better.

Gauging Velocity.

A RUSSIAN engineer named Liotshak is said to have invented an ingenious apparatus capable of recording with absolute correctness the velocity with which a train is travelling at any period of the journey. The Tsar manifested a lively interest in the device, and the Russian Railway Ministry has ordered 1,000 sets of the device for adoption on the

springing surprising developments upon us; we believe, however, that all electrical engineers whether in England, America, or on the European Continent, are of opinion that the advantages which steam and petrol cars now possess over the electromobile will by that time, if not earlier, have come over to their side. And if that should happen, what a mighty work there would be before electrical engineering! But we will not indulge in grandiose prophesying or roseate forecasts, for in this matter we own to being upon even less certain ground than our meteorological authorities are in theirs.

"Motorobesity."

"PUNCH" pictures a club-man, after nine years' absence at the other end of the world, returning to town and meeting several old friends much expanded in form and some of immense girth. One thus explains the change:—"You see, it's like this. For ten years or so everybody who could afford a

motor of some sort has had one. We've all had one. Not to have a motor has been simply ridiculous, if not disreputable. So everybody has ridden about all day in the fresh air, never had any exercise, and got an enormous appetite. Besides, in the summer we've always been drinking beer to wash down the dust, and in the winter soup, or spirits, or something to warm us. My dear fellow, you can't think what an appetite motoring gives you. I had an enormous steak for my lunch at Winchester to-day, and a great lump of plum cake with my tea at Aldershot, and my aunt, the General's wife, made me bring a bag of biscuits to eat on the way up, and yet I'm so hungry now that I should feel quite uncomfortable if the thirst those biscuits, and the dust, gave me didn't make me almost forget it. I suppose everyone is really getting fat. One notices it when one does happen to see a thin fellow like you. Why, in all the Clubs they've had to have new arm-chairs, because the old ones were too narrow."

The Speed Limit of Motor-Cars.

THIS is one of the most important questions of the day, not only to the engineer, who may, perhaps, look at the subject from a too personal point of view, but to the general public who are technically interested in the development of the engineer's ingenuity. It is, perhaps, in the interests of the motor-car industry itself that the speed limit of the vehicle and the qualifications of the drivers should be put upon a legal and a common-sense basis. The present twelve-mile-an-hour limit—a figure combining a maximum of annoyance with a minimum of usefulness—is palpably as absurd a restriction for a quiet country road as it is highly impracticable or dangerous (under different conditions) upon the very same highway. Such is the view of the official organ of the Engineering Society in connection with the new Birmingham University. The problem is rather confined to the driver than to the car, for a badly driven car at six miles an hour is more dangerous than a skilfully manipulated one at sixteen. It will not be long before the hiring of motors will be as common a practice as the hiring of landaus—imagine the ordinary 'Arry out on his motor! Against all this we have the suggestion of Mr. H. C. Wells, brought before the University of Birmingham by Sir Oliver Lodge at the beginning of the year, and approved of by practical engineers, to construct a great motor highway from London to Scotland, suitably arranged with electric supply stations, and restricted to pneumatic-tired vehicles. There is then no reason why the power of the machine should not be the only limit to the speed attained. "More convenient, but less economical," might be Professor Burstall's comment to the suggestion of subdividing the power into smaller isolated limits, and though this is true, yet the business man of to-day will sacrifice anything to save time and to suit his convenience.

The Death of Count Zborowski.

A FINE sportsman and a popular gentleman was Count Zborowski, whose terrible death at Nice on Wednesday has sent a shudder through the automobile world. Only a few days ago Mr. S. F. Edge told us with evident pleasure that the Count would drive an English car in the Eliminating Race for the Gordon Bennett contest, and British motorists were hoping that he might help them to sustain the national credit. But alas! on the fourth day of the Nice fetes he was killed instantaneously in the hill-climbing race from Nice to the heights of La Turbie, overlooking Monte Carlo. Two years ago Bauer was killed in an accident at a spot a few feet from where Count Zborowski's fatal spill occurred. The road, which rises continuously in a steep gradient for a distance of nearly ten miles, is a most dangerous one, presenting a constant succession of winding curves and sharp bends. At the first bend in the round the Count's Mercedes car skidded, and failing to take the curve properly, went bounding on in the straight. It dashed at a speed of over sixty miles an hour into

a great boulder on the roadside. Count Zborowski and his mechanic were thrown violently, the former falling on his head, and he was quite dead when picked up. The mechanic, Pallange, who expired shortly after, was still breathing, though fearfully injured, when the bystanders rushed to the fatal spot. About the same time, the car of the Baron de Gasteaux, owing to the breaking of a chain, was dashed on the rocks at the Montee du Pin. The Baron and his mechanic were thrown to the ground, but escaped with slight injuries.

A Popular Sportsman.

COUNT ZBOROWSKI was the son of an American who married a Pole, and was born in New York about forty years ago. For several seasons he hunted in the Midlands, residing at Coventry House, Melton Mowbray, and being distinguished as a bold rider to hounds. Last year he was fourth in the heavy-car class of the Circuit des Ardennes, his time for the 318 miles being 6 hr. 52 min. 16 sec., giving an average of 46½ miles per hour. In the Paris-Vienna race he accomplished the actual fastest time in the contest, covering the 615½ miles of roads, which were exceedingly difficult during the later stages of the contest, in 15 hr. 37 min. But he lost 36 min. because his papers were not in order, and the Austrian customs officers compelled him to stop and pay duty on various articles at the frontier. Everyone will regret this sad termination of the career of a popular sportsman.

Easter.

OWING to the Easter Holidays, *The Motor-Car Journal* will go to press a day earlier than usual next week, and correspondents are requested to send their contributions not later than first post on Tuesday morning. The same request also applies to the business departments, and "copy" for advertisements should reach the office during Monday, or at the latest, by first post on the 7th inst.

TRIALS of a motor car, with a body built as a mail van, were made at Yarmouth on Tuesday.

MR. PERCIVAL SPENCER promises to produce by Whitsuntide, a flying machine that will be a distinct advance in aeronautics.

THE Yorkshire A. C. is having a tour in the Lake district at Easter, making its headquarters at the Stag's Head Hotel and the Old England Hotel, Bowness.

THE Electric Light Committee of the Eastbourne Corporation are recommending the Town Council to hire two Milnes-Daimler 'buses for experimental running in the town. Should these prove successful, a municipal motor omnibus service will be inaugurated.

THE Coronet Motor Company, Ltd., has been registered with a capital of £20,000 to acquire the business now carried on by Mr. W. J. Iden, at Foleshill, near Coventry, as the Carlton Motor Company. The first directors are Messrs. J. Perkins, J. Perkins, jun., W. Perkins, and W. J. Iden.

THE Standing Joint Committee of Huntingdonshire have decided to link the whole of the police stations in the county together by private telephone for the purpose of facilitating police business, more particularly in the detection of excessive motor-driving. Last year the police obtained sixty-eight convictions against motorists.

PROFESSOR W. E. DALBY read a paper on "Vibration Problems in Engineering Science," at the Automobile Club, last week. The question of engine balancing was considered, and the effect of the disposition of balance-weights on flywheels, of the addition of pistons, and of the inclination of cranks in diminishing the vibration due to the rapid reciprocal movement of pistons and the angles of connecting rods was made clear by models suspended on springs and placed on planes and rotated by means of electric motors. The experiments proved that reciprocating weights cannot be properly balanced by the addition of revolving weights to the flywheels alone.

GORDON BENNETT RACE NOTES.

THE history of the Bill legalising the Gordon Bennett Race is perhaps a record in celerity, so far as our Houses of Parliament are concerned. Here are the leading stages in its progress:

- February 10th.—Clauses settled.
- " 20th.—Read a first time in the Commons.
- " 24th.—Bill blocked by Mr. Galloway.
- " 26th.—Read a second time.
- March 2nd.—Read a third time and went to Committee.
- " 3rd.—Passed first reading in the Lords.
- " 16th.—Read a second time.
- " 20th.—Committee stage reached and amendments made vesting the power to make regulations in the Local Government Board of Ireland instead of the County Councils.
- " 24th.—Bill read a third time.
- " 26th.—Lords' Amendment accepted by the Commons.
- " 27th.—Royal assent given.

THE Eliminating race in connection with the Gordon Bennett Cup will take place at Welbeck on Saturday,

THE only serious hill in the whole of the Gordon Bennett course is the Windy Gap, just beyond Stradbally Village. The Ballylynan-Athy road is a good stretch on the whole, but it is certainly ruined by quarry carts passing along it. These have formed deep ruts, and as part of the road is in Queen's County, and part in Kildare, the surveyors of these two counties will have to act conjointly in securing the improvement of the surface before the day of the race. About five and a half miles of the road will have to be picked up and rolled. Should this be done, however, it will be necessary to keep the quarry carts off the surface until after the race, or it will soon be ruined again.

It is probable that the Club enclosure will be on the Athy-Kilcullen Road, two or three meadows thereon having been suggested as a suitable place on which to erect the Club tent. It is probable that the road in front will be treated with tar in order that no dust may be raised. A captive balloon will be anchored near the Club enclosure of the course, and attempts will be made to take photographs therefrom.

It has been suggested that at the conclusion of the race (the finishing point of which will be the Club enclosure) Lady Dudley



Photo by]

The Gordon Bennett Course—Kilrush Hill, looking South-west.

[D. Lawrence.

April 25th, the cars being required to be on the course at 11 a.m. A new apparatus for the electrical timing of motor-vehicles will be used, and should it prove successful, will probably be introduced in connection with the Irish week. Those vehicles taking part in the Trial will have to be driven to the Club House in Piccadilly by 12 noon on Friday, the 10th inst., to be examined by representatives of the executive committee, and to have attached to their frames the seal of the Club.

MR. EDGE, as the present holder of the Cup, will be the first to start. Chevalier Rene de Knyff will then go forward on his Panhard. An American car will start third, and the fourth will probably be a Mercedes, driven by Baron de Caters. The second four to start will be Mr. Charles Jarrott on a Napier, Mr. Maurice Farman on a Panhard, the second American car, and the Mercedes driven by M. Degrais. The last four in the race will be the British car, which may be a Star driven by Mr. Lisle, jun., or a Napier driven by Mr. Mark Mayhew, L.C.C., or Mr. J. A. Holder; the Mors racer, the third American car, and the third Mercedes. The vehicles will start at intervals of two minutes, the first leaving at 7 a.m., and the last at 7.24 a.m.

may present a wreath to the winner, and souvenirs to the other competitors in the contest.

ABOUT 700 road stewards will be required for the course of 103 miles. Members of the A.C.G.B.I. who may be in Ireland in the early days of July, and who may be willing to act as stewards, are requested to send their names at once to the new secretary, Mr. J. Orde. At least five special committees will be required in connection with the various events taking place in Ireland during the automobile fortnight.

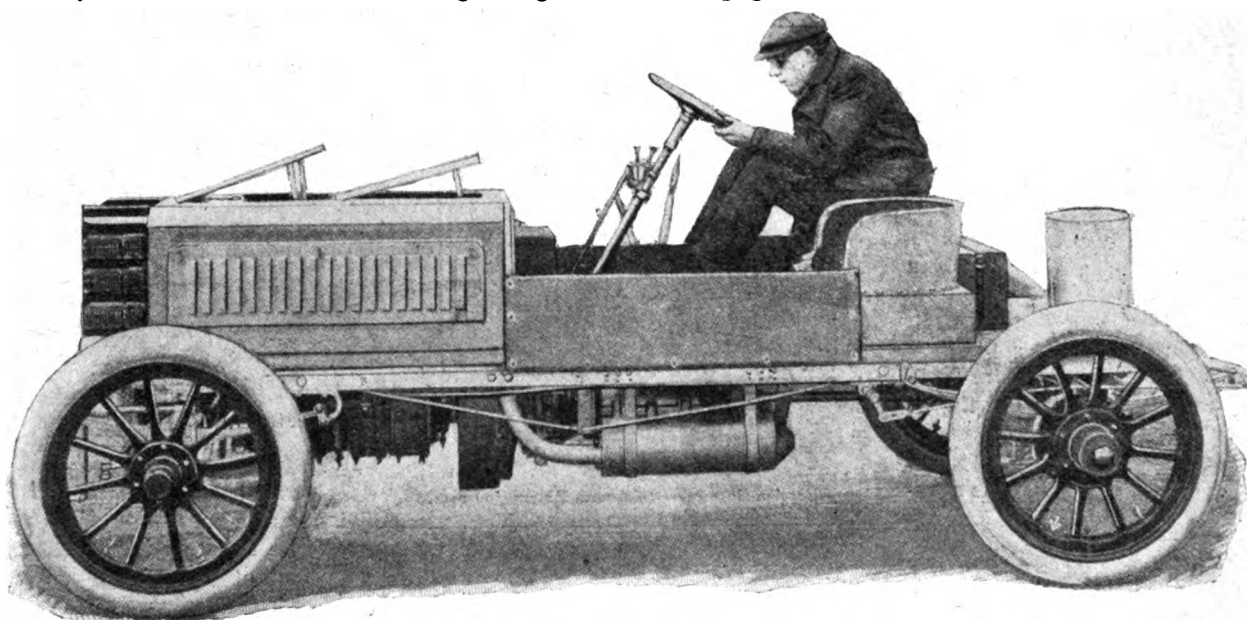
M. RENE DE KNYFF, who has just returned to Paris after a trip over the proposed route in Ireland for the Cup race, has been interviewed by the *Velo*. He is reported to have expressed the opinion that the route is not equal to that of Paris-Bordeaux or the Circuit des Ardennes. The route, which is the form of a figure 8, is good for 50 per cent. of its length, bad for the remainder, which comprises many sharp turns and *dos d'ane*, of which one is particularly disquieting. For about 40 per cent. of the distance the road is not wide enough for racing, and to pass under these conditions will need absolute fraternity among the competitor fraternity, which there is no reason to doubt will be shown by all. Asked by the interviewer if he came back from Ireland with

a bad impression, M. de Knyff replied "Certainly not. I had a hearty reception, and if the route is not perfect, it is acceptable."

MESSRS. SMITH AND SON are preparing new chronometers with ten-inch faces, fitted with second hands showing fifths of seconds, for use by the observers of the trials during the great

representing a nation which may collectively make the highest average speed in the forthcoming contest.

WE would like to remind readers of the assistance rendered by the Irish Automobile Club in connection with the forthcoming great event. Col. Chaloner Knox and Mr. R. J.

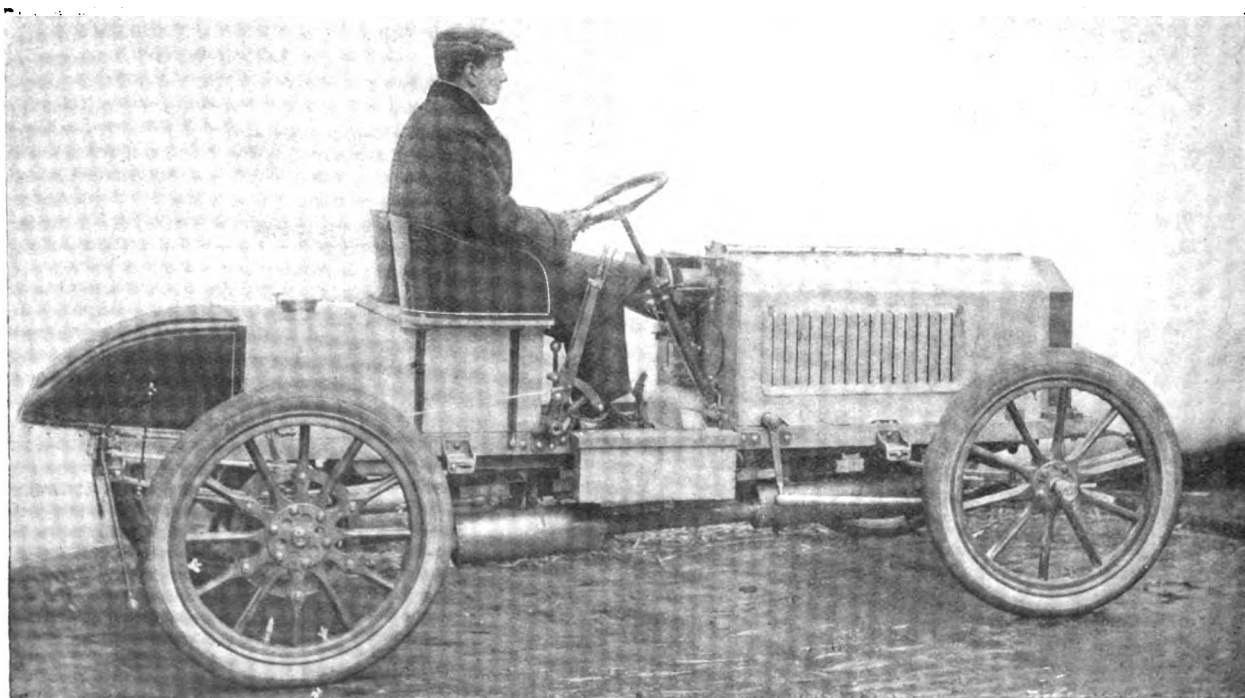


Mr. L. P. Mooers on the "Peerless" Racer—One of the American Competitors. (See page 85.)

race. Nine of the clocks will be required, and after the race an inscription will be placed upon their faces to the effect that they were the official clocks used on the occasion of the Gordon Bennett race. They will then be sold to members of the A.C.G.B.I. at cost price.

McCredy were probably the first to suggest the course that has been adopted, and Mr. W. G. D. Goff has also rendered great service in making preliminary arrangements.

At the French Automobile Club, objection is reported to



A "Napier" Gordon Bennett Racer.

(Some particulars of this car were given on page 53 of our last issue. The vehicle weighs 16 cwts. 97 lbs.)

A NEW trophy, value two hundred guineas, has been promised by Mr. Scott Montagu, M.P., as a second award in connection with the race. It will go to the team of three cars

have been taken to the hour fixed for the start of the contest, which, it is contended, should be either four or five o'clock in the morning, instead of seven. If the weather is hot, the strain

of running at high speed for nine hours will, it is urged, be too hard on the drivers, whereas by an earlier start this objection is sensibly modified.

So that there shall be no possibility of their cars suffering damage prior to the Gordon Bennett race, Messrs. S. F. Edge and C. Jarrott have withdrawn from the Paris-Madrid race.

On page 84 we give an illustration of the racing car built by the Peerless Motor Company, of Cleveland, Ohio, for the American Automobile Club's Eliminating test in connection with the Gordon Bennett race, and which will be driven by Mr. L. P. Mooers, who is seen at the wheel in the picture. The main frame is of channel steel, the motor has four vertical cylinders, while the direct system of transmission to a live axle is adopted. The machine, with its long square motor bonnet and diminutive driver's seat, presents a racy and striking appearance.

In the course of the annual motor-car exhibitions at the Agricultural Hall there has generally put in appearance at least one new car which instantly became surrounded by a large crowd of interested spectators. Many of our readers will remember the excitement in the arena caused a few years ago by the arrival of the Whitney steam car, and twelve months later by the first Wilson and Pilcher petrol car. This year was no exception to the rule, the 1903 *clou* being found in the racer which the Star Engineering Co. have built for the Eliminating Contest to be held early this month in anticipation of the Gordon Bennett race. We are this week able to publish a few brief particulars of the car, an illustration of which is given on page 81. The main frame is constructed of wood and steel, the underframe supporting the motor and gear being of angle steel. The vertical engine comprises four separate cylinders. No information is available as to the dimensions or horse power of the motor, which is water-cooled by means of a gear-driven pump, and a honeycomb radiator with fan of the Albany type. The engine, which runs at a medium speed, is controlled by a governor acting on the outlet from the carburettor. The throttle valve can also be controlled either by the hand or foot. The ordinary system of ignition by means of accumulators and trembler coil is adopted. Large bearings are provided between the cranks on the crank shaft, which is, it may be remarked, hollow. The power is transmitted through the clutch to a Panhard type of gear box, giving three speeds forward and a reverse, controlled by one lever. This drives a differential countershaft which is connected with the rear wheels by side chains. Plain bearings are adopted, while, like the crank shaft, the shafts in the gear box are hollow. The car has a long wheel base, and is mounted on equal-sized road wheels 34 in. diameter, shod with 3½ in. pneumatic tyres. Complete with two-seated racing body, ready for the road, the weight of the vehicle comes out at about nineteen cwt. The lightness of the chains and some of the other parts was somewhat unfavourably commented upon by many of the engineering visitors, but "the proof of the pudding is in the eating," and everyone is now looking forward to the behaviour of the car in the Eliminating Test. It was taken out for a short run on Saturday morning last, and, although it was not possible to get on the top speed, there was no room to doubt that on the open road the Star racer will prove a flier.

MESSRS. HUMBER, LIMITED, inform us that they have appointed the Victoria Carriage Works, Limited, 25, Long Acre, W.C., agents for the sale of their cars in London, where they will be on exhibition and trial.

AMONG the cars entered for the Paris-Madrid race is a "Spyker," which is to be driven by Mr. E. Broadbent, the works manager of the Bradford Motor Company. The vehicle will be fitted with a six-cylinder engine developing 54-h.p., a novel feature being that the power will be transmitted to all the four road wheels.

STEAM POWER FOR AUTOMOBILES.

A LECTURE on the above subject was recently delivered at the Automobile Club of America by Prof. John E. Sweet, of Cornell University, who states that he had been urged to get out a design for an automobile engine on the lines he thought most suitable. This he had done, and it was his intention to inform his audience in what respects his machine had been successful and wherein it had failed. It was his opinion that as two cylinders were required, the engine might as well be made compound, which would lead to a considerably higher steam economy. To obtain complete balance with a two cylinder engine, the cylinders of which must necessarily be set at quarters, was impossible, but a fair balance could be obtained by placing the two cylinders at right angles to each other. This arrangement had been adopted in his engine, the high pressure cylinder being arranged horizontally and the low pressure cylinder vertically. The valves employed were described as of the piston type with plain surfaces. All the working parts of the machine were enclosed and ran in an oil bath. Special effort had been made to avoid all possibility of parts coming loose. No stuffing boxes were used on the piston rods, the rods being made a ground fit in the cylinder heads. The piston rods and crossheads were made in a single piece, and the connection rod also was made in a single piece; that is, without bearing caps. The question now was how to reverse the engine. The eccentrics had been turned in one part with the crank shaft, so that they could not be shifted, which was not a good arrangement. It was then decided to reverse by interchanging the admission and exhaust passages, which would allow of backing at a slow speed. The object was obtained by means of two common plug valves, with channels cut in them, the two valves being operated simultaneously. The engine worked with a constant cut-off at three-quarter stroke, and, being well balanced, would run as high as 1,500 revolutions per minute. Tests made by Professor Carpenter had shown that the steam consumption varied between 27 and 30 pounds per horse power hour. None of the troubles they had expected had materialised, but where they had least expected trouble the engine had failed. The valves had proved entirely unsuitable for the work, and had become inoperative after only a short time of use. The reversing plug valve had been found even less satisfactory than the main valves. A vote of thanks was tendered Professor Sweet at the conclusion of the lecture.

SIR DAVID SALOMONS is contributing a series of articles on "Electrical Ignition in Gas Motors" to the "Electrical Review."

THE Earl of Buckinghamshire has recently joined the ranks of automobilists, and has placed an order for a 10-h.p. Argyll car.

THE Centre Steering Tractive Company gave a very successful demonstration last week at Hampton Court of their system by which an ordinary omnibus can be converted into a motor 'bus. The system consists in attaching an ordinary four-wheel tractor driven by steam, petrol, or electricity to any existing omnibus or four-wheeled vehicle by removing the front wheels of the vehicle and substituting for them the rear wheels of the tractor (an operation which took about three minutes in the case of the omnibus used in the trial). The transformed (and now six-wheeled) vehicle is steered by the hind wheels of the tractor. Notwithstanding its unusual and somewhat ungainly appearance, the vehicle certainly proved well able to turn round in its own length, and in other respects to be easily controlled. It has the advantage that it enables the existing rolling stock to be utilised without further expense. The tractor on view was steam driven, weighing about 2½ tons, and capable of travelling an average distance of 30 miles without a stop, at speeds up to 15 miles per hour. Steam is generated in a water-tube boiler at 250 lbs. pressure. A vertical compound reversing marine-type engine, capable of developing 35-h.p., drives through chains on either side on to the front or driving wheels.

CONTINENTAL NOTES.

BY "AUTOMAN."

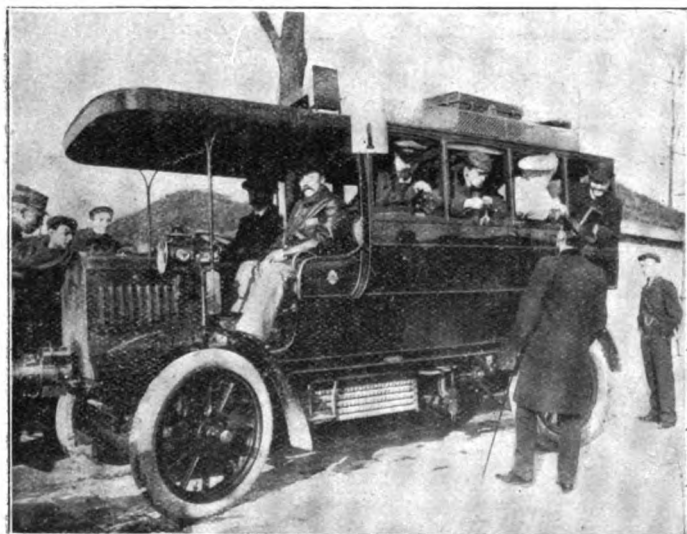
THE Mercedes radiator is well known to everyone who knows anything about automobiles, and has become the subject of controversy. It is, however, rapidly becoming a standard article of commerce, and no doubt in a short time no motor-car will be complete without a radiator made on the same principle or on similar lines. Everyone knows that the new products of the Cannstatt Daimler works are now by common consent christened after the Spanish christian name of M. Jellineck's daughter, Mercedes—Mercedes is the Spanish for Wednesday. The Mercedes radiator has, however, another name, and it is this other name which occupies my attention to-day. It is called the "*nid d'abeilles*." This has been erroneously translated into English as "bee-hive." I fear it is too late to stop the wrong translation from getting vulgarised. The French for "bee-hive" is "*ruche*," and the radiator resembles a "bee-hive" just about as much as it resembles a rabbit-hutch. "*Nid d'abeilles*," literally translated, means "bees' nest," and is only used in connection with wild bees—a wasps' nest is also called a "*nid de guêpes*." If one takes a nest of wild bees or wasps, the nest consists, of course, of waxen cells in which honey, pollen, or larvæ are lodged, and the radiator in question has somewhat

in Nice in the time allowed; the Gardner-Serpollet 'bus arrived at four o'clock with a bent front axle, caused by a "cannivau," and the Bardon wagon arrived late in the evening.

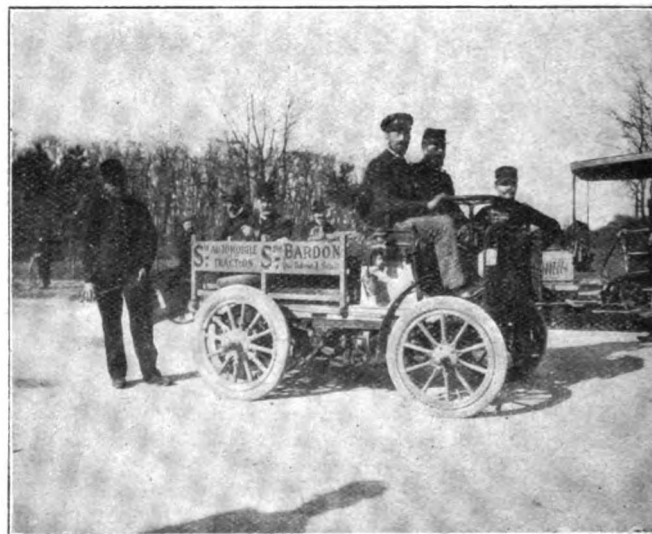
THE Nice week is now in full swing, and to-morrow the great event, the mile and kilometre race, will decide the fortunes of the competing makers. M. Leon Serpollet holds the record with 120 kilometres per hour (74½ miles). This, of course, only refers to the Nice record. The cars which are competing this year include Panhards, Mors, Mercedes, De Dietrich, Gobron-Brillies, and Gardner-Serpollets.

THE meeting opened on Sunday last with a battle of flowers, in which motor-cars suitably decorated were the great attraction. Neither the sun nor the numbers of cars which took part were as favourable as possible to success, but still some automobiles were most handsomely got up, and Mr. Warden had a Panhard car hidden in white flowers which was particularly handsome-looking; whilst a dog which accompanied him in the car was dressed as a *chauffeur*, goggles and all, and created a great deal of amusement.

THE 90-h.p. Mercedes will not be ready for the Nice meeting, but are being held back for the more important events of Paris-



The Serpollet 'Bus.



The Bardon Lorry.

THE CRITERIUM DES TRANSPORTS (AUTOMOBILES).

the appearance of such a nest cut in two. The correct English translation of "*nid d'abeilles*" in this connection is therefore "honeycomb," and instead of talking about "bee-hive radiators," which has no signification whatever, we should talk about "honeycomb radiators."

THE second annual Criterium des Transports Automobiles, commonly called the Paris-Nice caravan, started in the Bois de Vincennes on Saturday, March 21st, with a five hours' trial around the lake, with the following results:—

Name.	No. of laps.	Time occupied. h. m.	Petrol used kilos.
Peugeot	43	5 5	12.915
Bardon	43	5 4	5.460
Serpollet	62	4 58	61.680
De Dietrich	53	5 0	22.400
Ader	115	5 0	26.110

ON Sunday morning only three of the competitors turned up for the start to Nice, namely, Bardon, De Dietrich, and Serpollet. They valiantly set off on their interesting journey. Towards the end of the tour the weather became very bad indeed, and only the De Dietrich omnibus arrived on Friday, March 27th,

Madrid and the Gordon Bennett Cup, and it is rumoured that there will be some difficulty in getting them under the 1,000 kilo. limit. In the absence of the 90-h.p. the 60-h.p. Mercedes will have to do duty, and no less than eight of these new cars weighed in for the Nice week on Sunday morning. Their respective owners are Gray Dinsmore, Prince Lubecki, Higginbotham, Warden, Count Zborowski, Baron de Caters, Harmsworth and Terry. In addition to the Mercedes, only two Mors cars and one Rochet-Schneider weighed in on the first day in the 1,000 kilo. category. All the Panhards withdrew and forfeited stakes. It seems evident that this year's struggle at Nice will be confined to a duel between Mercedes and Mors, with the advantage of numbers largely in the favour of the former.

As the Gordon Bennett race is now only three months ahead of us, news of the competing cars is gradually leaking out. It is supposed that the Germans will have some difficulty in keeping under the 1,000 kilo. limit, and this sounds like having to use unexpected means of lightening the cars, which generally ends in cutting too fine and going too near the safety factor. Panhard, it is said, has got to the limit of his horse-power, and will use the same engine as last year or nearly so. Of the Mors

cars it is said the motor has worked up to 110-h.p. on the brake tests, so that at first sight it would seem that Mors was the most serious competitor. It is a most unfortunate thing that the dates of French races clash with those of the Irish week, for it will prevent a number of enthusiasts and good sportsmen from going over to Ireland. The hill climbs of Albertville, Laffrey and Mont Ventoux fall respectively on the 2nd, 5th, and 6th of July, but efforts are being made to put them off to a later date.

THE Spanish section of the Paris-Madrid course has been practically settled. M. Tampier has been over it with the Spanish authorities, and with some slight alterations the roads turn out, according to his account, to be remarkably good. There seems to have been a splendid effort made by the Spanish authorities, and stones have been laid on all the bad places. The steam roller is about to begin its work, and then, it is said, the road will be very good indeed. There are very few neutralisations in Spain, but, on the other hand, a good many level crossings and *cannivoux*. M. Tampier reports that the crossing of the Guadarrama range of mountains is not as difficult as La Turbie.

THERE has been a terrible story abroad about a car which was attacked on the Spanish roads by an angry crowd and stoned, and about a company of guards having been sent to catch the evil-doers and bring them in chains to Madrid for punishment. It turns out, however, that the story has been distorted and exaggerated, for the real truth is that an automobile party had the misfortune to steer into a milestone and break a front wheel. They were obliged to stop at a little village, and wait for it to be repaired. The inhabitants along the line of route are said, on the contrary, to be most enthusiastic about the race.

THE entries have reached the number 243, which has been secured by the Wolseley Tool and Motor Car Company, Limited; No. 241 falls to the Eagle Engineering and Motor Company.

A MOTOR garage has been opened in Peterborough by Mr. A. J. Robertson.

THE first motor-car auction sale on the Tyne has just taken place at Messrs. George and Jobling and Co.'s garage in South Street, Newcastle.

WITHIN the past few days The Motor Mart, Limited, have sold cars for Lady Sarah Wilson, Lord Willoughby de Eresby, and the Hon. E. G. S. Churchill.

THE Electric Ignition Company, of Birmingham, inform us that they have appointed Mr. E. J. Hardy, 39, Hendon Road, Sparkhill, as their sole agent in Coventry.

THE executive committee of the Cork International Exhibition have decided to offer a valuable cup for a mile or a three miles automobile race at Cork, after the Gordon Bennett race.

A SUGGESTION has been made that the London County Council should authorise the expenditure of £400 on two motor launches to be used on the lakes of Battersea and Victoria Parks.

MESSRS. S. W. STRINGER, LIMITED, of 43, Effingham Street, Rotherham, are keeping a stock of petrol, oils, etc. They have also facilities for carrying out repairs, and can send men out on motor-bicycles, on receipt of wire or telephone message, to repair breakdowns on the road.

THE Begbie Manufacturing Company, Limited, has been registered with a capital of £10,000 to adopt an agreement with Messrs. A. Firth and S. D. Begbie, and to manufacture, repair, and deal in apparatus, engines, etc., used by motor manufacturers, etc. The registered office is at Cumberland Park, Willesden Junction.

THE SPARKING PLUG "DISCOVERY."

THE sparking plug "discovery" continues to attract considerable attention in motoring circles, and new devices providing for the external gap in the high tension circuit are making their appearance almost daily. This week we give illustrations of another batch. One of the simplest and most compact is than of Messrs. Salsbury and Sons, Ltd., illustrated in Fig. 1. As will be seen, in this the gap is provided within the

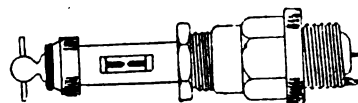


Fig. 1.

plug itself, the lateral hole being formed in the porcelain, and the central rod made in two pieces. To avoid all danger from explosion of accumulated vapour, the spark gap may be enclosed with a mica window, or thin copper gauze. Fig. 2 shows another neat contrivance which Messrs. Brown Bros., Limited, have just put on the market. The Brown Spark Intensifier is intended



Fig. 2.

to be fixed to the end of the high-tension wire, the loop end, being provided for attachment to sparking plugs of all kinds. The points are enclosed in a glass tube which is hermetically closed, thus obviating all danger of a naked spark igniting any escaped petrol gases. Another advantage of the "Brown" device is that the points can be adjusted to any distance. Fig. 3

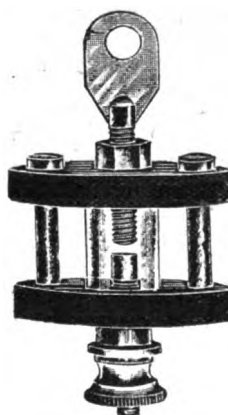


Fig. 3.

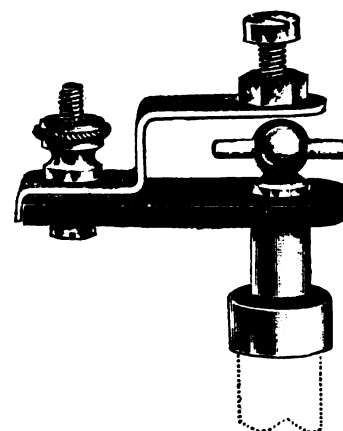


Fig. 4.

illustrates the "Phlarix" glass-covered intensifier of Messrs. H. and A. Herbert. Like the "Brown" this is intended to be fixed at one end to the high-tension wire and by the other to the plug, the gap also being adjustable. Messrs. G. T. Riches and Company are marketing the arrangement shown in Fig. 4, while Mr. Chas. H. Rush, of Gray's Inn Road, W.C., has sent us a sample of one he has just introduced. We are unable at present to give an illustration of this, but may say that it is of the naked gap spark variety; it is, however, exceedingly simple and compact.

THE makers of the Tony Hubert cars are reported to be about to bring out an electrical change-speed gear for petrol cars.

THE *Making Mail* of the 23rd February records with pleasure the arrival of a 16-h.p. motor omnibus built by the Motor Manufacturing Company, Ltd., for the Consolidated Investment Company of Johannesburg.

MOTOR-CYCLING NEWS.

DURING the last German military manœuvres some trials were made by Herr Hauptmann Reinecke, head of the cyclists' corps of the 2nd Lower Silesian 2nd Infantry Regiment with a motor-bicycle made by the Neckarsulmer Fahrradfabrik. The officer in question, who is shown at side of his motor-cycle in the accompanying illustration, has just issued a report on the result



of the experiment in which he expresses the opinion that the use of the motor-bicycle in military operations is not only practicable but advantageous, and that every military cycle corps should be provided with at least two motor-cycles for dispatch carrying and relay purposes.

THE programme of the sports meeting to be held on the Preston Park track, Brighton, on Easter Monday includes a three mile motor-cycle handicap.

ON Saturday last a hill climbing competition was held in connection with the Ulster Centre of the Motor Cycle Union of Ireland. The course was a public side road in Glenmachan. There were two sharp turns in the road, the gradient was not sufficiently steep the entire way, and the surface was a trifle uneven. To add to these drawbacks, the weather was most unfavourable, rain and hail rendering the road sloppy and slippery. The distance to be covered was 600 yards, and telephonic communication was established between the starters and timekeepers, thus getting over the difficulty caused by the crookedness of the road. The handicap was framed according to the power of the engine and the weight of the rider. Competitors pedalling after the line was crossed were disqualified, and one attempt only was allowed. Thirty entries were received but only fifteen started. Four prizes were offered and awarded as follows.

	Nett Time.	Handicap Time.
	Seconds.	Seconds.
1.—T. Mallon (2-h.p. Quadrant) ...	56	28½
2.—L. Porter (2½ h.p. Werner) ...	46½	34½
3.—R. G. Wilkinson (2 h.p. F.N.)...	48	37
4.—R. W. Ireton (2½ h.p. Riley) ..	46½	37½

A FIVE-MILE motor-cycle handicap is included in the programme of the sports meeting which the Bury St. Edmunds Bicycle and Athletic Club will hold on Easter Monday.

A ST. LOUIS motor cyclist, Mr. F. Weber Benton, proposes to make a tour this summer from California to St. Louis on a motor-cycle. He will be accompanied by an assistant, who will take

photographs to illustrate a proposed series of articles on the trip. They expect to penetrate spots hitherto inaccessible, except on foot, thereby demonstrating the practicability of the motor-cycle for such travelling, and at the same time securing much material that will make interesting reading. The travellers will descend into old Mexico, cross the scenic belt of Arizona, touching the territory of the cliff dwellers and passing through the depths of the Grand Canon of the Colorado. The start will be made from California early this month, and the distance of 3,500 miles is expected to be covered in about three months.

A MOTOR-CYCLING tournament has been arranged to be held at the Memorial Grounds, Canning Town, on Saturday next. The programme includes an open handicap and a series of races between Chase and Martin. Five events will be contested—viz., one mile with flying and standing starts, and five miles flying and standing starts, in all of which Chase will ride a 2½-h.p. Bat, and Martin a 2½-h.p. Excelsior. The fifth event will be one mile, Chase riding a 4½-h.p. Soncin, and Martin a 2½-h.p. Excelsior, Martin receiving half a lap start.

TWENTY motor-cyclists are required by Captain W. P. Wethered, Cyclist Officer of the Home Counties Volunteer Brigade, for the cyclist manœuvres on the 10th and 13th inst. The riders must already be members of a volunteer corps, and should obtain consent from their commanding officer to take part as a member of the Composite Motor Cyclists' Company or Section, under Captain Wethered. Gentlemen who are willing to take part in these manœuvres are requested to send in their names, with rank and corps, to Mr. F. Straight, at the Automobile Club, by Monday next.

IN the programme of the sports meeting of the Irish Cyclists' Association, to be held at Ball's Bridge, Dublin, on Easter Monday, we notice a five mile motor-bicycle pursuit race.



The Grmonde Motor Bicycle and Trailer.

THE New York Motor Cycle Club has appointed a committee to obtain an expression of opinion from other motor-cycle clubs and unattached riders as to the desirability of effecting an American national organisation. The idea is to hold a meeting of motor-cyclists at some central point during the early summer, with the view of bringing the organisation into existence.

AT the last run of the Wolverhampton A.C. it was noticed that of seventeen vehicles taking part, six were of local manufacture.

HERE AND THERE.

A MOTOR-CAR club is being suggested for Stourbridge.

THE Halifax Club will have a run to Southport on Easter Monday.

THE Marquis and Marchioness of Tullibardine have been paying a round of visits in Glasgow by motor-car.

A FEATURE of the Aintree racecourse last week was the large number of motor-cars. Everywhere automobilism is in the ascendant.

THE Automobile Exhibition at the Agricultural Hall, according to the *World*, still further strengthened the position of the motor industry.

THE opening run of the Brighton Motor Club will take place on Good Friday, starting at 11.15 from the headquarters, 12, Marlborough Place. The destination is Arundel, and all motorists are cordially invited to join in the run.

AN auction sale of motor-cars is announced at Cheltenham

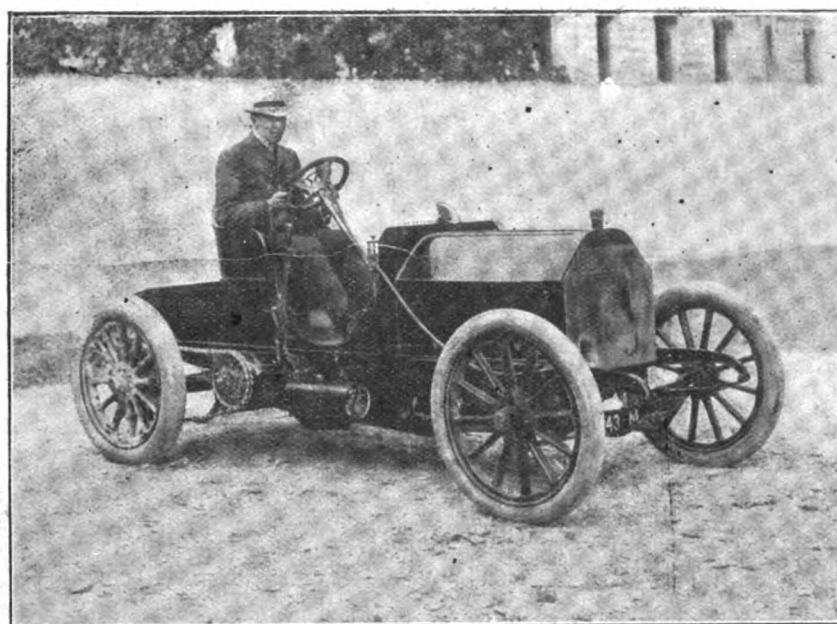
MESSRS. HOBSON, RICHARDS AND COMPANY will hold a sale of electric motor-cars at Manor Street, King's Road, Chelsea, S.W., on Tuesday next.

THE Velox Motor Company, Limited, and the Humber Company, Limited, are both at work on new types of popular-priced petrol cars.

A MOTOR repairing shop has been opened at 219, South Street, Perth, by Mr. Jas. M'Farlane. A stock of petrol, oil and motor accessories will be kept.

AT the Society of Engineers, on Monday next, a paper will be read entitled "Road Maintenance and Administration," by Mr. Robert J. Thomas, M.Inst. C.E.

A MOTOR-CAR is to be presented to Dr. Jacob, the new Bishop of St. Albans, by his friends in the diocese of Newcastle, which he is leaving. Both the Duke of Northumberland and Earl Grey approve of the idea.



One of the new 60-h.p. Mercedes Cars which will take part in the Paris-Madrid Race. *(La France Automobile)*

THE first 18-h.p. 1903 Mercedes car in this country, which was exhibited on Mr. J. E. Hutton's stand during the last two days of the Agricultural Hall Show, was sold on Saturday last to Mr. H. W. Spiller, of London.

THE Huile "Vitesse" Company, Limited, has been registered with a capital of £32,000 to carry on the business of dealers in oils for the lubrication of cylinders of automobiles, motor cycles and general machinery.

MR. GEORGE R. HELMORE, secretary of the Automobile Mutual Protection Association, tendered his resignation at the annual general meeting recently held, and it was accepted with regret. Mr. Helmore will remain in office pending the appointment of his successor.

MESSRS. A. DARRACQ AND COMPANY, LIMITED, have been registered with a capital of £375,000 to acquire the business of A. Darracq et Cie., carrying on trade at Suresnes, France, and elsewhere; to enter into a deed of contribution between A. Darracq et Cie. and this company for the transfer to this company of the said business in consideration of an allotment of 100,000 preference and 217,214 fully-paid ordinary shares, whereof the Anglo-French Motor Syndicate, Limited, is to receive 57,109 shares in respect of services rendered.

AT the inaugural meeting of the Norfolk Club at Yarmouth, on Saturday the 11th inst., the cars will be stored at the Victoria Mews, while luncheon is in progress at the Royal Assembly Rooms. All motorists touring in the neighbourhood are invited to the latter function, which will take place at 1.30 p.m.

AMONG those who placed motor-cars at the disposal of the candidates in the recent Chertsey election were Mr. A. J. Balfour, Mrs. Leopold de Rothschild, Lord Churchill, Mr. Griffith Boscawen, M.P. (who drove himself), the Hon. R. Guinness, Captain Pearce, Dr. Bruce, Mr. C. D. Rose, M.P., Sir C. McLaren, M.P., Sir George Newnes, M.P., Mr. A. E. Derry and Mr. J. Allen Baker, L.C.C.

MOTORISTS are reminded that the entries for the Glasgow to London Non-stop Trial, 13th and 14th May, particulars of which have already appeared in our columns, close on April 13th. Copies of the conditions and entry forms may be had from the secretary of the Scottish Club (Western Section) who are organizing the trial, Mr. R. J. Smith, 59, St. Vincent Street, Glasgow. Although the trial is called non-stop, a night is to be spent in Leeds *en route*, but no time is allowed there for replenishing, etc., the cars remaining under absolute custody of the Club from arrival to departure.

THE Isle of Thanet highways were in perfect condition for motoring last week-end, and policemen were cautious and sensible.

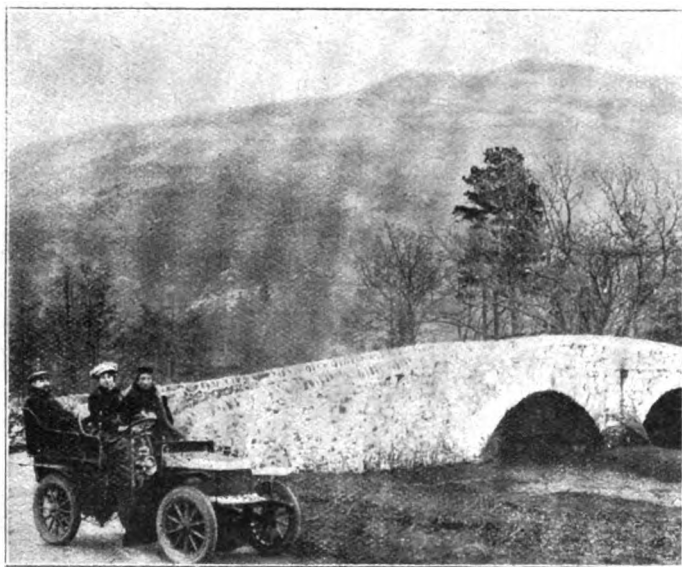
A MEETING of motor traders in Scotland is to be held in Edinburgh on April 14th, to consider the question of forming a Scottish Motor Traders' Association.

THE Italian kilometre record now stands at 30 seconds, this having been accomplished on the road between Fiumicino and Rome last week by Baron Franchetti.

A CONFERENCE of the Clubs affiliated to the A.C.G.B.I. has been held, at which the Liverpool Self-propelled Traffic Association, the Scottish, Manchester, and Yorkshire Clubs expressed opposition to affiliation to the Motor Union.

MESSRS. C. S. ROLLS AND CO. have sent us a copy of a descriptive pamphlet they have issued dealing with the Krebs automatic carburettor. They are keeping a 7-h.p. two-cylinder Panhard car fitted with the carburettor ready for trial by intending purchasers.

THE United States Long Distance Automobile Company is building a 40-h.p. four-cylinder petrol car to the order of the U.S. Ordnance Department. The body will be practically a machine shop, fully equipped with all the necessary tools and spare parts, to follow the artillery branch of the service.



An "Argyll" Car in the Highlands.

MR. H. CHARNOCK has opened a garage and repair shop in connection with the Bull's Head Hotel, Hazel Grove, Cheshire, of which his father is proprietor. This establishment is on the main road from Manchester to Buxton, Macclesfield, etc., and Mr. Charnock is well able to render assistance to motorists passing that way.

A USEFUL item of news comes to hand from Mr. G. M. Harris, resident engineer of Alexander's Electric Works, Carlisle. It is to the effect that these works are always available for charging accumulators, both small ignition batteries and the larger batteries for electrically-driven cars. The works are on the route of the Cup race. The leading Irish hotels are also arranging for the storage of cars, and the Midland Great Western Railway of Ireland is prepared to accommodate motor-cars at its hotels at Mallaranny, Co. Mayo and at Connemara.

THE Automobile Club of America has definitely decided to hold a trial of commercial motor-vehicles. The dates chosen for the contest are May 20th and 21st. The course each day will be 20 miles, and will be gone over twice, making 40 miles in all per day. All classes of vehicles will take part in the test; the electric, petrol and steam classes will be each subdivided into four classes, based on the load to be carried, which will be respectively 750 pounds, 2,000 pounds, 3,500 pounds and 10,000 pounds.

MR. LAMB, the Secretary of the Stanley Automobile Exhibition, informs us that in consequence of the unsuitability of the Earl's Court Exhibition Buildings, the Stanley Club have decided not to organise an automobile exhibition there in 1904.

LIEUTENANT MARK MAYHEW, of the Middlesex Imperial Yeomanry, is to be appointed to the command of the new Motor Volunteer Corps, with the rank of Lieutenant-Colonel. Captain Skeffington-Smyth, 9th Lancers, has been nominated as Adjutant.

THE Pope-Robinson Company, of Hyde Park, Mass., U.S.A. have sent us a copy of their catalogue, in which the Robinson touring car is fully described. The vehicle, which is on Panhard lines, is fitted with a four-cylinder engine, the cylinders being 4in. dia. by 6in. stroke.

MR. N. CHEREAU, who is now managing the London business in Bleriot lamps, is also acting as London manager, at 54, Long Acre, W.C., for the Societe Anonyme des Etablissements Falconnet-Perodeaud, whose specialities include an armoured anti-slipping protector for pneumatic tyres.

CLIMBING a mountain through snow to the hubs was the severe test recently given a 10-h.p. Martini car by a Swiss automobilist, Captain Nabholz von Grabow. The ascent was made up the Uetli mountain, 2,863 ft. above the sea level. The latter half of the ascent was a rough road through wood and fields, used only for wood transport, which was covered with deep, soft snow.

THE Automobile Internationale, Limited, has been registered with a capital of £50,000 to acquire the business of La Societe Anonyme Dechamps, Bruxelles, and all or any of its assets and liabilities, to adopt an agreement with Mr. L. Swan, and to carry on the business of manufacturers of motor-car, cycles and vehicles of all kinds.

MR. FRANK ZIRBES, of Racine, Wis., is coming over to England in the interests of the Mitchell motor-bicycle, and will compete in motor-cycle races wherever eligible this season. It will be remembered that last year Mr. G. Vernon Rogers came over and competed in several events, but his promotion to the sales management of the Wisconsin Wheel Works will keep him at home this season.

THE Lancashire Wagon Company, Limited, has been registered with a capital of £250,000 in £10 shares, to adopt an agreement for the acquisition of the business of a company of the same name (incorporated in 1857), and to carry on in the United Kingdom or elsewhere the business of making, building, or manufacturing railway carriages, motors, motor-cars, etc. The registered office is at 22, Broad Street, Bury.

AT Dublin, on Saturday, the Marquis of Downshire was charged with having negligently managed his motor-car on the previous evening, with the result that Elizabeth Magee, a widow, aged sixty-five, was knocked down and seriously injured. The evidence showed that the car was travelling at the rate of six miles an hour, that the defendant sounded the horn several times to warn the woman, and that everything was done to prevent the accident. The Marquis afterwards conveyed Mrs. Magee to a hospital in the car. The case was adjourned, the defendant promising to appear again to-day (Saturday).

THE Ordnance Survey is about to commence the publication of a new pocket map on the scale of two miles to one inch of certain areas of England and Wales, and an advanced proof of the Bath sheet has reached us. This map has the hills shaded, woods coloured green, roads sienna, water blue, and contours brown; the bolder slopes are brought out by stipple shading in brown, and many altitudes are given along roads and at other principal points. The map is mounted on linen, folded outwards so as to admit of its being read without necessarily opening the whole map, a method specially adapted for motorists. It shows very distinctly all the chief features, including towns, villages, roads, railways and stations, rivers, canals, hills, and county boundaries. It was in the first instance prepared for War Office purposes, but will be on sale to the public.

The Motor-Car Exhibition at the Agricultural Hall.

(SECOND NOTICE.)

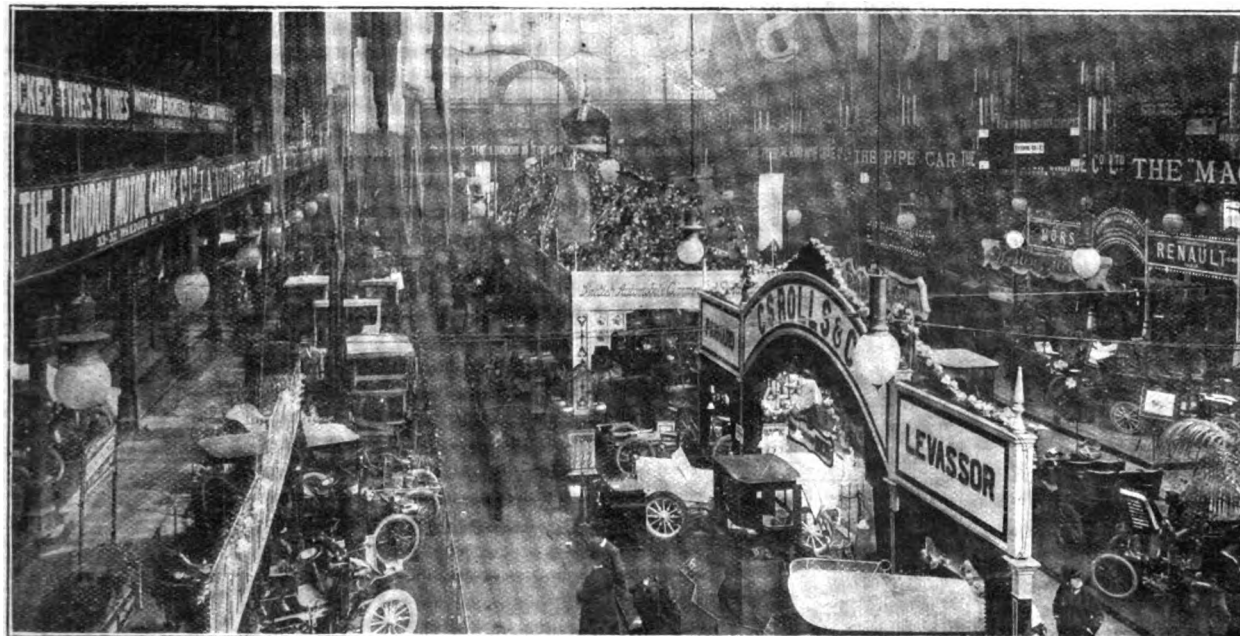


Photo by]

General View of the Large Hall.

[Argent Archer.

"GRUMBLE though they may at the number of exhibitions which they are expected to support, the manufacturers of motor-cars do not manifest any disposition to neglect them. The fact remains that the third show of the year in London, which opened at the Agricultural Hall on Saturday last, and closes this evening," said the *Field* of the 28th ult., "is the largest of the series, and has the disadvantage to the visitor that it is rather too extensive for convenient inspection." Below we continue our report of the leading exhibits, the conclusion of which will be given in future issues.

PETROL CARS.

While perhaps comprising no new feature, the 16-h.p. "Automotrice" chassis shown by the SOCIÉTÉ FRANÇAISE D'AUTOMOBILES gave every evidence of good workmanship. In the fore-part of a wood and steel frame is set a four-cylinder engine, having mechanical inlet valves located on the opposite side to the exhaust valves. The governor, in conjunction with which is an accelerator, is adapted to act on the inlet. Four speeds forward and a reverse are provided, the power on the top speed being transmitted direct through a longitudinal shaft and bevel gearing to the rear live axle. The Société Française also exhibited a 9-h.p. tonneau car with De Dion engine, a 21-ft. motor launch, with 4-h.p. "Abeille" petrol engine, a Herald 24-h.p. four-cylinder motor, a "Zebus" 2½-h.p. motor bicycle, and samples of the Dalifol 1½-h.p. and 2½-h.p. bicycle motors, and "Gallia" ignition accumulators.

The LONDON MOTOR GARAGE COMPANY, Limited, had two large stands, on which were staged an interesting collection of 10-h.p. Lanchester, 20-h.p. Mercedes, 15-h.p. "Pipe," and 12-h.p. two-cylinder, and 16-h.p. four-cylinder "Magnet" cars. As these have all been dealt with previously in the *Journal*, it need only be mentioned that the 20-h.p. "Magnet" was fitted with a special tonneau body seating six persons. The novelty on the stand was the chassis of the new 15-h.p. four-cylinder "Pipe" car. The engine has mechanically-operated inlet valves, interchangeable with the exhaust valves. All the valves are on one side, and operated by the same cam shaft. The carburettor is fitted with a jacket through which part of the cylinder cooling water can be made to pass. In other respects the chassis follows the lines adopted in the standard type of "Pipe" car.

The novelty on the stand of Messrs. HEWETSONS, Limited, was, of course, the new "Benz Parsifal" cars with vertical engines. The new car is of 10-h.p. The motor comprises two cylinders, and, to permit of easy access to the valve chambers, the covers are held on their seatings by box-nuts, which have simply to be loosened to allow inspection. A low-tension system of ignition is adopted, the current being generated by a gear-driven magneto. The latest type of radiator and a spray

carburettor are used. An improved form of lubricator is fixed on the dash, for general lubrication, and a hand force-pump is used to feed oil to the crank-chamber and gear-box. The change speed is actuated by a single lever, which provides a direct drive on top speed, three speeds and a reverse being available. A metal-to-metal brake, operating on a steel drum, is placed immediately behind the gear-box, and the usual side brakes are fitted. Vehicles of the two-cylinder type are constructed in three sizes, 8, 10, and 12-h.p., and the general workmanship is of that class which has made the Benz vehicles so popular. The well-known Benz cars with horizontal engines were represented by a 6-h.p. Doctor's car, and a tonneau, a 7-h.p. car with double-cylinder tandem engine at the rear, a 7-h.p. lorry, to carry loads up to 25 cwt., and a 10-h.p. tonneau with bus top. The latter has a double-cylinder engine with three speeds and reverse, the power being transmitted by a single wide belt to the change-gear shaft and thence by chains to the rear road wheels. We hope to illustrate the latter vehicle in an early issue.

The BURLINGTON CARRIAGE COMPANY, Limited, displayed three of the latest De Dietrich (Turcat-Mery) cars—a 16-h.p. four-cylinder tonneau, a 24-h.p. four-cylinder Limousine, and a 10-h.p. two-cylinder tonneau, and a chassis. Although combining many of the best points of the latest Panhard and Mercedes practice, the new car exhibits much originality in detail. Broadly it follows the standard arrangement of vertical motor in the fore part of the frame, friction clutch, change-speed gear, and two side chains. The motor comprises two or four cylinders. The governor runs in an oil bath case, and magneto ignition is employed. The carburettor is fitted with a regulator or throttle, by means of which, and the firing control, the motor is claimed to be as flexible as a steam engine. The various details have been carefully thought out, this being especially noticeable as regards the friction clutch, which can be adjusted with very little trouble.

The leading feature of attraction on the stand of Messrs. C. S. ROLLS and Co. was undoubtedly the 80-h.p. Mors racer on which the Hon. C. S. Rolls recently established a record kilometre run at Welbeck. The vehicle has already been illustrated in the *Journal*, as has also the 10-h.p. Panhard car, with removable brougham top. Well-finished specimens of the 7-h.p., 10-h.p., 15-h.p., and 24-h.p. Panhards were also staged, the latter being fitted with a Muhlbacher tonneau body, with a removable hood extending over front and back seats. The details of the Panhard cars are now too well-known to need description, while as to the body work of the vehicles exhibited it is almost needless to say that this is of the highest class.

The DU BOIS Co., Ltd., had hoped to have on view a new 11-h.p. two-cylinder petrol car and a 10-h.p. steam car with tonneau body, the boiler being located under a bonnet, but, unfortunately, the vehicles did not arrive from America in time.

A new exhibitor in the South was THE MO-CAR SYNDICATE, Limited, whose Arrol-Johnston cars attracted considerable attention, probably by reason of the marked difference between them and the type to which we have become accustomed. The cars shown comprised a couple of four-seated dogcarts, a six-seated car with canopy (Fig. 26) and a chassis. The makers explain that their object has been not to produce a light semi-racer, but a car, while capable of high average speeds, which shall be comfortable, reliable, durable, and easy of manipulation. The 12-h.p. car can keep up an average speed of eighteen miles an hour over such roads as prevail in the South of Scotland, can climb any ordinary gradient fully loaded, and

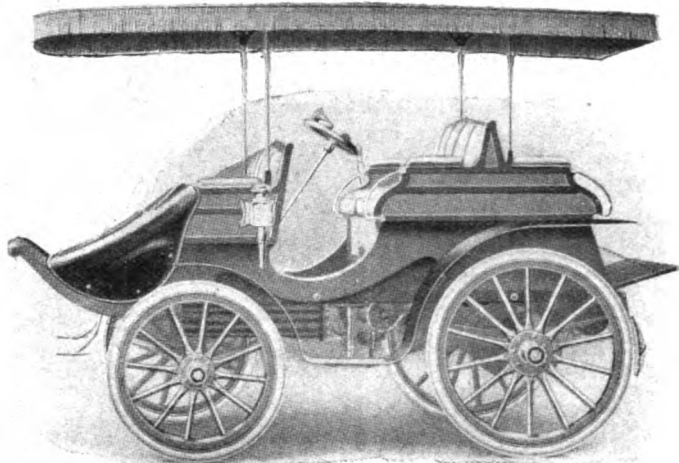


Fig. 26. —The Arrol-Johnston 12-h.p. six-seated Car

if desired, can run up to over thirty miles an hour on the level. The engine, which is mounted high up on the frame, under the rear seats, is of the balanced type, and comprises two cylinders and four pistons, the pistons receding from each other and the combustion chamber being directly in the centre of the cylinders. It develops 12-h.p. at a normal speed of 700 revolutions per minute. The connecting rods work on two rocking levers, placed at each end of the cylinders, and from the other end of these the power is transmitted to the crank shafts below. A rotary magneto-electric machine driven by chain off the crank shaft is provided for igniting the mixture, which is supplied by a special float-feed carburettor. The exhaust valves are lifted by cams on a pair of two to one shafts and through the medium of a hit-and-miss governor of the pendulum type. On one of the control levers is fitted a screw handle which regulates the tension of the governor spring, thus acting as an accelerator or retarder, and allowing the speed of the engine to be controlled by the driver. Four forward speeds and a reverse motion are provided by a sliding train of wheels. From the engine the power is conveyed by a Renold silent chain through a clutch to the change-speed shaft, and from the lay shaft by a second silent chain to a short intermediary shaft at the rear of the live axle, to which it is connected by spur gearing. A double system of lubrication is provided, one by means of gravity and the other by means of a force pump driven from the engine, which forces the lubricant up through the rocking lever and connecting rod bearings. The back axle, which is of very ample proportions, is fitted with roller bearings. The car is fitted with two

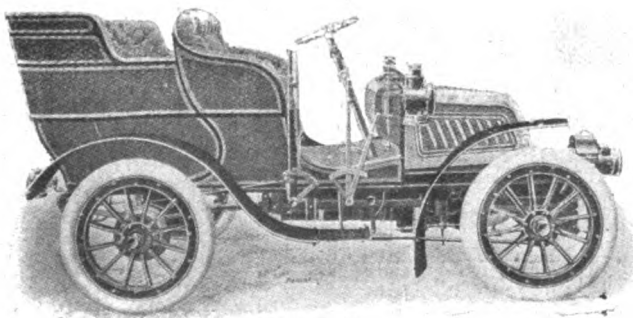


Fig. 27.—The Horbick 10-h.p. Car.

independent brakes, one acting on the change gear shaft by means of a foot-lever, the other on the rims of the wheels, to be used as an emergency brake, through a hand-lever. It is claimed that the strength of the cars, together with the manner in which the bodies are hung on the springs, renders it possible to use solid tyres with the greatest comfort. The water circulation for the cooling of the engine is maintained by a chain-driven pump and Clarkson radiator. We may add that one of the cars on the stand was driven down by road from Paisley, the journey of 443 miles

being taken in easy stages, and covered in two and a-half days. A novel method of starting the engine from the seat is provided, this consisting of a rope passing over a flanged pulley, on pulling which the compression is immediately released, and by further pulling round the pulley a gear is put into engagement with a pinion on the engine crank shaft.

A new firm at the London Show, of which more is likely to be heard in the near future, was Messrs. HORSFALL AND BICKHAM, whose cars include a number of interesting features, and bear evidence of careful construction and design. The exhibit comprised an 8-h.p. chassis (Fig. 28), and two complete 10-h.p. cars (Fig. 27); as the general arrangement is the same, the following description may be taken as applying to both vehicles. The main frame is of tubular construction, an underframe of planed channel steel being provided to support the motor and gear box. In the fore-part of this is carried a two-cylinder motor, the dimensions of the 8-h.p. being 3 9/16 in. cylinder diameter by 4 in. stroke, the normal speed being 900 revolutions per minute. The 10-h.p. engine has cylinders 4 1/8 bore by 4 3/8 in. stroke, 800 revolutions being the normal speed. The two cylinders, together with their heads, are cast in one piece. An automatic governor acting upon the throttle valve is fitted, while the normal speed of the engine can be varied by a lever on the steering pillar through a Bowden wire. A similar lever on the other side of the pillar times the ignition. The levers project from small friction discs fitting against flat faces, and pressed up against them by an adjustable nut. The wires leading to the ignition plugs are connected to spark gaps enclosed in a glass-fronted case on the dash, the current sparking across them on its way to the cylinders. In the same case is mounted a watch, the light given by the jumping spark being sufficient to illuminate the watch dial at night. Three forward speeds and a reverse are provided, the power being transmitted direct on the top speed by a cardan shaft and bevel gearing to the rear live axle. In the 10-h.p. cars a spring cushion is introduced in the small part of the clutch, which is of the expanding type. The change-speed gear is of the sliding type, the side shaft being noticeable in that it, together with its spur wheels, is machined out of a solid bar. The bearings of the gear-box are double, and are "ring" lubricated, light chains, however, being substituted for the ordinary rings. A telescopic coupling is introduced on the universally-jointed shaft, con-

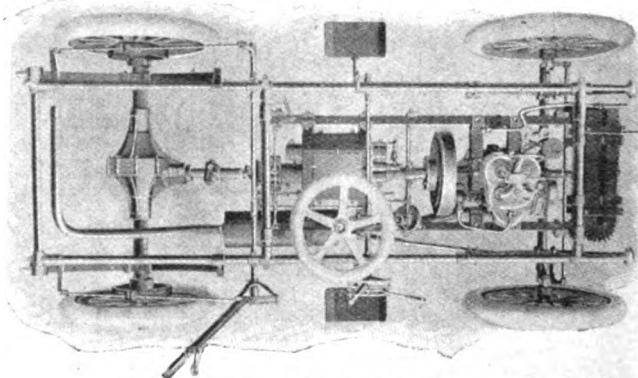


Fig. 28.—Plan View of Chassis of Horbick 8-h.p. Car.

veying the power from the gear-box to the rear axle. The foot-operated band brake behind the gear-box is of the metal-to-metal type, and the hand-actuated brakes on the hubs of the rear wheels are of the expanding form, the latter being an improvement since the photograph reproduced in Fig. 28 was taken.

The new PRITCHETTS AND GOLD petrol car in general arrangement follows the lines of the Panhard type of automobile. The frame is of pressed steel. The power is supplied by a Blake 14-h.p. four-cylinder vertical motor, fitted with water circulating pump and radiator. The normal speed is 900 revolutions per minute; by means of the throttle and accelerator the speed can be varied between 250 and 1,500. Electrical ignition is adopted. The transmission is on Panhard lines, three speeds forward and a reverse being provided. From the differential shaft the power is conveyed to the rear road wheels by side chains. A comfortable tonneau body is fitted, while there are the usual brakes. The brakes on the rear wheels, which are compensating, are controlled by a hand lever, which also throws out the clutch, and in addition applies the countershaft brake at the same time. The various details appear to have been well thought out, resulting in a vehicle of substantial and attractive design.

• A public service vehicle of the type now in use between the Marble Arch and Cricklewood was shown on the stand of STIRLING'S MOTOR CARRIAGES, LIMITED. An illustration of this has already been given in the *Journal*, so that we need only mention that it is fitted with a vertical two-cylinder motor developing 12-h.p., and that seating accommodation for twelve passengers is provided. On the same stand Messrs. Stirling had on view a 2 1/2-h.p. petrol motor, with propeller and reversing gear, for a small launch.

MESSRS. A. DOUGILL AND CO., LIMITED, had hoped to have shown one of the Hagen petrol lorries capable of carrying a load of three tons, and of hauling a trailer; but, unfortunately, were not able to take advantage of their space. The vehicle is fitted with a 7-h.p. single-cylinder engine running at the slow speed of 450 revolutions per minute. The transmission

is on novel lines, and cannot be well described without drawings, which we hope to publish in a subsequent issue.

— Quite a new car to the English market is the "Spyker," shown on the stand of the BRADFORD MOTOR CAR COMPANY. They are made by the Trompenburg Manufacturing Company, of Trompenburg, Holland,

Although represented only by a single car, the PHOENIX MOTOR COMPANY had an exhibition which was worthy of much attention. This consisted of a Phoenix 12-h.p. tonneau car (Fig. 30) the frame of which is constructed of one piece of channel steel. The engine is of the double-cylinder vertical type, the cylinder being $4\frac{1}{2}$ in. diameter by $4\frac{1}{2}$ in. stroke, and the

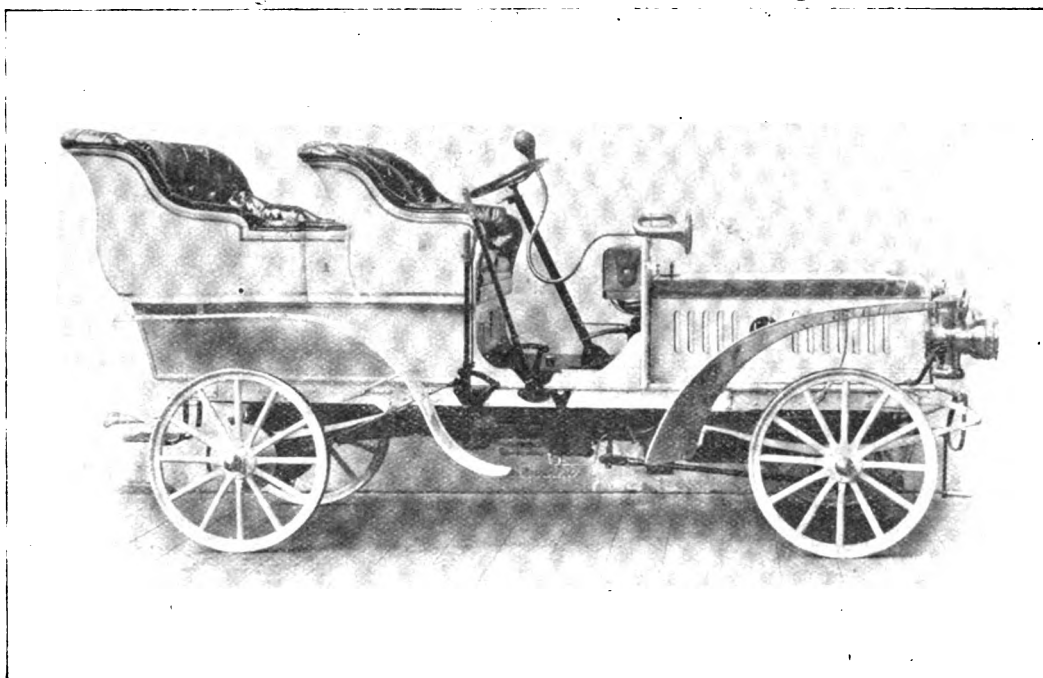


Fig. 29.—The "Spyker" Car.

the whole output for the next three years having been secured by Mr. House, of the Bradford Company. They are made in two sizes—12-h.p. double-cylinder and 20 to 24-h.p. four-cylinder. The car staged was a handsomely-finished 20 to 24-h.p. tonneau (Fig. 29) and judging from the large number of motorists to whom vehicles have already been sold it is likely to become a familiar type in the North of England during the coming season. The design of the car is on up-to-date lines, the engine having mechanically-

normal speed 800 revolutions per minute. The water circulation is maintained by pump and a combined honeycomb cooler and tank. The governor is adapted to act on the gas admission, an auxiliary valve being provided by means of which cold air is drawn in the engine when the latter is throttled down. A hand lever, acting on the throttle valve, is also provided. Three speeds forward and a reverse motion are provided, the drive on the top speed being direct. From the gear-box the power is

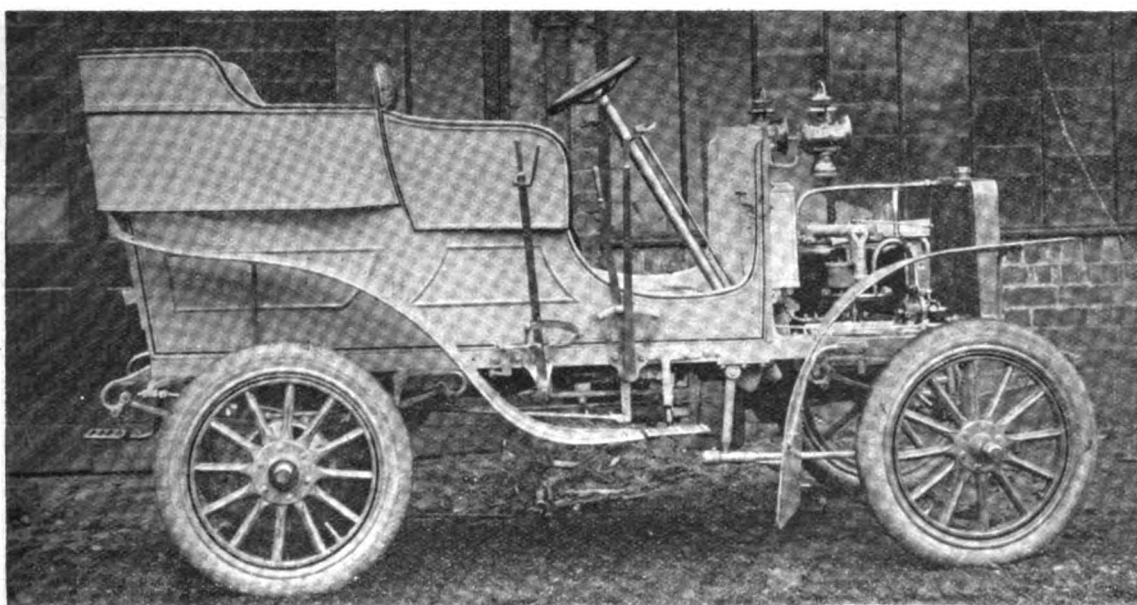


Fig. 30.—The "Phoenix" 12-h.p. Car.

operated inlet valves. Pressure on our space this week prevents us from referring to the various features of interest, but we hope to deal with the car in detail in an early issue. On the same stand were staged a 10-h.p. Panhard car with Lamplough Roi-des-Belges tonneau body, and a 9½-h.p. Clement car, with mechanically-operated inlet valves.

conveyed through an universally jointed shaft and bevel gearing to the rear live axle, which is entirely enclosed, and runs on roller bearings. A special flexible coupling is mounted between the clutch and the gear-box. The brakes on the hubs of the rear wheels are, contrary to the usual practice, operated by a pedal, the depression of which also disengages the clutch,

the hand-lever at the side controlling a brake on the cardan shaft. The car, which appears to be well finished, weighs complete about 15 cwt.

Foremost among the exhibits of the GENERAL MOTOR CAR COMPANY, Limited, was a 30-h.p. tonneau car fitted with a Buchet four-cylinder motor, four speeds and reverse, and chain drive. On this stand was also to be seen a neat little tradesman's delivery motor-car, with 4½-h.p. motor, belt and chain drive; this is designed to carry a load of over 200 lbs. and two people at a speed of twelve miles an hour. Another van, intended to carry from 6 to 7 cwt., was fitted with a 6-h.p. Aster engine. It has two speeds, the transmission being by belts to the countershaft, and thence by a single centrally-located chain. The General Company appear to be devoting considerable attention to the construction of light motor delivery vans.

A new type petrol car was to be seen in the "Kensington," jointly shown by Messrs. RAWLINGS BROTHERS and Messrs. OFFORD and SONS. They are made in two sizes, 9-h.p. two-cylinder, and 15-h.p. four-cylinder, an example of each being staged. The vehicles throughout are on Panhard lines—vertical motor in front, speed-box with four speeds and a reverse on one lever, differential countershaft, and side chains. The 9-h.p. engine has two cylinders, and the 15-h.p. four cylinders; the normal speed being 950 revolutions per minute. The governor is adapted to act on the inlet, while we noticed that the cam shaft is driven off the crank shaft by helical gear wheels. Special couplings are provided between the clutch and the gear box, and between the latter and the differential shaft, allowing the frame

latest productions is a powerful vehicle fitted with a 15-h.p. four-cylinder engine, mechanical inlet valves, governing on the inlet. The gear is of the Panhard type, giving four speeds forward and one reverse, all actuated by one lever. The car which the Star Company have built for the Eliminating Contest of the Gordon Bennett Cup Race put in an appearance on Thursday last week, and naturally came in for a large amount of attention. An illustration and brief description of it are given elsewhere in the present issue.

The exhibit of the BRITISH PEERLESS MOTOR COMPANY comprised a "British Peerless" chassis and a complete tonneau car. These, as the name implies, are of English construction. The frame is of tubular construction, in the fore part of which is set an 8-h.p. single cylinder vertical motor. The cylinder is 4½-in. diameter by 4½ in. stroke, the speed being from 1,200 to 1,300 revolutions per minute. A feature of the engine is that the crank case and girder supports, the latter being equal to the full width of the frame, are made in one piece. The pump is so made that it can quickly be detached, while a throttle valve is provided. Three speeds and a reverse are provided by the usual type of sliding gears, controlled by one lever. From the gear box the power is transmitted by universally-jointed shaft and bevel gearing; a flexible joint is also provided between the clutch and gear box. The steering is by wheel, worm, and segment. A foot brake is provided, and in addition an emergency brake is fitted at either end of the back axle, controlled through equalising gear, from a

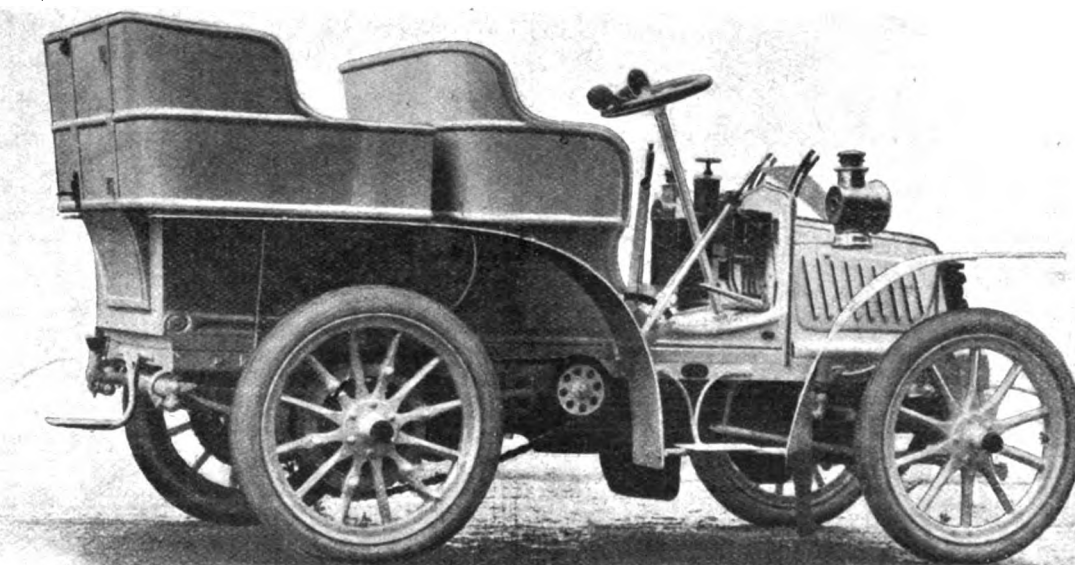


Fig. 31.—The Kensington 9-h.p. Car.

to rock without in any way disturbing the drive. Ring lubrication is adopted on all the main bearings. A central oiler is provided from which tubes branch to the different bearings. Each branch can be regulated independently, although all can be cut off, controlled, or opened simultaneously by a single lever. When the motor is stopped, no oil flows, but when it is started, the exhaust gases press on the surface of the oil, and the feed starts. The brakes are entirely metallic, and before acting disengage the clutch. The double-acting brake on the differential shaft is operated by a pedal; the wearing part has a cast-iron lining, which can be easily renewed. The brakes on the rear wheels are operated by a hand lever, and are of the internally expanding type.

Four or five cars were to be seen at the stand of the STAR ENGINEERING COMPANY, one being a facsimile of the vehicle supplied to the Automobile Club—a 7-h.p. twin-cylinder car, with tonneau body. The motor is governed on the inlet, and is water-cooled by means of pump and radiators. The gear is on Panhard lines, giving three speeds forward and one reverse, all actuated by one lever, and the power is transmitted from the countershaft to the road wheels by two side chains. Two independent double-acting brakes are fitted, one on the countershaft and the other on brake drums on the rear road wheels. The wheel base is very long and the wheels are 32 in. equal, fitted with 3½ in. pneumatic tyres. Another noteworthy vehicle was a 10-h.p. car. This is similar in design to the 7-h.p., but has a four-cylinder motor and four forward speeds. One of the Star Co.'s

lever at the driver's right hand. When either brake is applied the clutch is automatically thrown out.

Two cars formed the exhibit of the CANTERBURY MOTOR COMPANY. The first of these was a neat little four-seated vehicle. This follows standard lines, being fitted with a 6-h.p. De Dion engine in front, and having three speeds forward and one reverse; the power is transmitted by bevel gear to the rear live axle. Both hand and foot brakes are provided, both, on application, first disengaging the clutch. The brakes on the rear wheels are of the internal expanding type. The larger car, while following the generally accepted lines, contains a few special features. The frame is built of wood and steel; the motor is a 12-h.p. double-cylinder Aster with water circulation maintained by pump and honeycomb radiator. The water-circulating pipes are of flexible tubing. Three speeds forward and one reverse are controlled by one lever. From the gear-box the power is conveyed to the differential shaft by bevel gearing, and thence to the rear road wheels by side chains. The clutch is of the internal cone type, and between it and the gear-box is a special coupling to enable the clutch to be taken out easily when necessary. The differential gear on the countershaft lies outside the gear-box, and the sprockets on the end of the countershaft are so constructed that they can be changed without removing the hubs of the wheels. In contradistinction to the usual method, we noticed that the brakes on the hubs of the rear wheels are operated by a pedal, and the countershaft brake by a hand-lever.

The "Weller" car, which only made its appearance about a couple of months ago, has come into prominence with a bound, the stand of Messrs. WELLER BROTHERS, Limited, at the Show last week, being continuously surrounded by a crowd of interested spectators. Their exhibit comprised a 20-h.p. four-cylinder touring car (Fig. 32), and a 10-h.p. two-cylinder chassis, the arrangement in both being practically identical. As we gave a lengthy description of the car in our issue of the 14th February last, it is only necessary to briefly mention the more salient points. In the

rear wheels through a clutch, gear box, differential countershaft, and two side chains. Four speeds forward and a reverse are available. The four speeds are actuated by a cam-gearing controlled by a lever on the steering column. The reverse is actuated by a pedal, and enables the car to be reversed on any speed without changing gear. The depression of the pedal first puts on the brakes and then reverses the motion of direction. Contrary to usual practice, the rear wheel brakes are operated by the pedal, and the differential brake by a side lever. The car has a long wheel base,

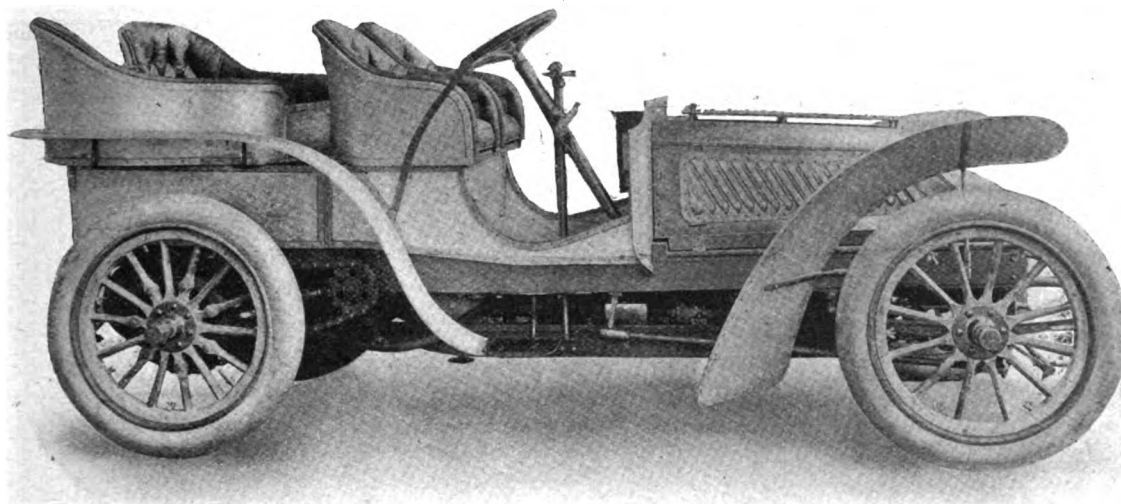


Fig. 32.—The "Weller" 20-h.p. Car.

first place, the motor, cooling apparatus, gear box, differential shaft and exhaust box, are all supported on an under-frame of stamped steel suspended from the main frame of similar construction by three connections, one at each end of the differential shaft and one at the fore-end of the under-frame, the latter connection being made with a swivel joint, so that no give or flexibility in the main car frame is communicated to the under frame, thus enabling the roughest roads to be traversed without danger of throwing any bearing in the running gear out of alignment. These three connections are secured by means of castellated nuts, by undoing which the driving mechanism (Fig. 33) may be entirely dropped out of the car, if necessary. The four-cylinder motor is novel, in that each is complete in itself except that the crank shaft is in one piece; the four cylinders with their crank cases being connected together by long external bolts. The cylinders are 4 in. bore by 5 in. stroke, the normal speed being 1,000 revolutions per minute. Mechanically-operated inlet valves with variable lift and period

and with its aluminium body weighs about 24 cwt. As mentioned last week, Messrs. Weller have been commissioned by Mr. E. Owers to build an 80-h.p. racing car, to be ready for the 1904 season.

The VICTORIA CARRIAGE WORKS, Limited, who have been appointed London agents for the Humber petrol cars, exhibited a 12-h.p. tonneau and a 20-h.p. chassis of this type. As the mechanical details have recently been dealt with at length in the *Journal*, it is only necessary to add that the Victoria Company are devoting much attention to the design and construction of bodies for these vehicles, so that any type of carriage desired by the purchaser can be turned out.

A representative display of "Prunel" cars was to be seen on the stand of Messrs. BRUN AND ROBERT. In their general arrangement all these vehicles follow standard lines. First we noticed a tonneau car fitted with a 6-h.p. De Dion engine, three speeds and one reverse, with direct drive on the top speed, and transmission by cardan shaft and bevel gear on to

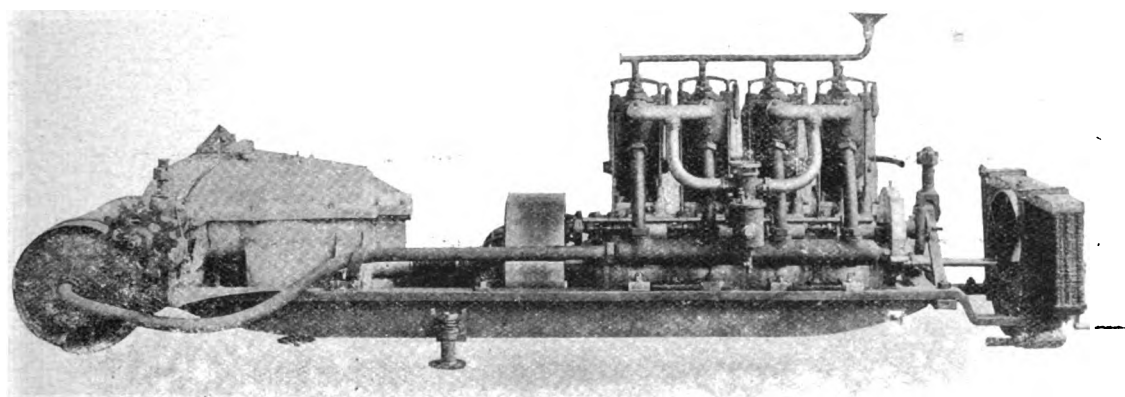


Fig. 33.—The Lower Frame, with Motor, Clutch and Gear of the "Weller" Car.

of lift, controlled by centrifugal governor and hand accelerator, are employed. Both inlet and exhaust valves can be withdrawn by loosening one nut, while to fit new brasses to the connecting rods it is only necessary to draw one cotter pin. Large inspection openings are provided in each crank-case, enabling the connecting rod brasses to be taken up without dismantling the engine. A single camshaft operates the inlet and exhaust valves. Magneto ignition is adopted, two sparking plugs being provided for each cylinder, one being in reserve. The power is transmitted to the

live axle. A 9-h.p. tonneau with De Dion engine, three speeds forward and a reverse, and chain driving next claimed our attention, followed by a tonneau with 12-h.p. Aster double-cylinder motor. The largest car on the stand was a handsomely-finished Limousine, with Aster 16-h.p. four-cylinder motor, four forward speeds and reverse motion, and chain drive. Finally, we may refer to the 9-h.p. delivery van, similar to that which did so well in the A.C.F. trials in November last. It is constructed to carry a load of one ton in addition to two passengers.

The chassis of a 9-h.p. Beckett and Farlow car and a 16-h.p. tonneau car of the same type formed the exhibit of Mr. L. A. BECKETT. They are built by a Belgian firm of engineers to the designs of M. E. Mathieu, who has had a long experience with motor-cars. The vehicles comprise a number of special features, some of which have already been alluded to in the *Journal*. In outward appearance they follow the now generally accepted design. Under the bonnet in the fore part is set, in the smaller car, a single-cylinder vertical motor, rated at 9-h.p., the cylinder being 110 mm. diameter by 130 mm. stroke, and the normal speed 1,000 revolutions per minute; and in the larger vehicle a two-cylinder engine developing 16-h.p. A special form of centrifugal governor is employed, this working

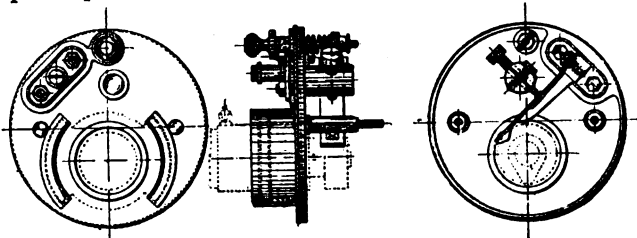


Fig. 34.—The Beckett and Farlow Contact Breaker.

in oil in an extension of the crank case; it is adapted to act on the supply of mixture to the explosion chamber by means of a butterfly valve in the admission pipe; this valve being also controllable by a small handle on the steering column. The exhaust valve springs are in duplicate, and are not placed around the valve stem as usual, but at the sides. They work in tension, and are easily detached. The motor is fitted with electric ignition of a special form, having a wipe contact working in conjunction with a high-speed trembler coil. The circuit is completed by a cam touching the contact blade, at the same time lifting it, which causes it to make a connection with a platinum screw. The arrangement is such that, supposing the screw should have come out of adjustment and the blade does not touch it, the current will pass through the cam itself. (See Fig. 34.) By thus always having two paths open for the current to flow along, it is claimed to be almost impossible for a mis-fire to take place. By giving the contact-box half a turn, it can be detached from the engine, thus allowing it to be inspected and adjusted in the hand. The motor transmits its power through a friction clutch to a gear-box, and thence by universally-jointed shaft and bevel gearing to the rear live axle. Three speeds forward and a reverse motion are provided, all controlled by a single lever. The change-speed gear is of the usual shifting pinion type, but in the method of effecting the changes much ingenuity has been displayed; the operation of changing speed being effected by mere finger pressure on the side lever. Great care has been taken to reduce losses by friction, it being claimed that from 85 to 90 per cent. of the power developed by the motor is given off the rims of the wheels. The engine, clutch, and gear-box are so mounted that by undoing four lugs they can be dropped out of the frames.

The MOTOR TRACTION COMPANY, Limited, had a varied display of Salisbury single-cylinder 7-h.p. and 10-h.p. two-cylinder cars, and Germain 7½-h.p. two-cylinder and 15-h.p. four-cylinder vehicles, the details of which were given in our report of the same company's stand at the Stanley Motor Show in January last. The body work of these vehicles is of a high order. This is a department to which the company pay special attention, their exhibit comprising a special tonneau body in wood and aluminium, with bucket front seats.

A large display was made by the ANGLO-AMERICAN MOTOR CAR COMPANY, Limited—the name by which the Oldsmobile Company will in future be known. One of the most attractive features of the stand was the 20-h.p. Winton with a tonneau body, illustrated in a recent issue. The engine is of the two-cylinder horizontal type. All parts of the mechanism are completely enclosed, and water, petrol, and oil tanks are arranged under the bonnet. The water circulation is maintained by a gear-driven pump. The Winton planetary gear system of transmission is employed, giving three speeds forward and one reverse. Attention was also directed to the Oldsmobile car, which has now a new carburettor, in which the gravity-feed system has been adopted. Many small parts have been strengthened as a result of experience on English roads, artillery wood wheels being now fitted. The Royal motor-bicycle was also to be seen on this stand; this has been recently much improved in detail, Bowden rim brakes being fitted to both wheels. There are a number of novel points about the motor well worth attention, notably the vertical hollow radiating fins.

The REX MOTOR MANUFACTURING COMPANY, Limited, displayed a couple of "Rex" cars—a 10-h.p. tonneau and a 16-h.p. six-seated double tonneau. Both have the engine in front under a bonnet, driving the rear axle through a clutch, three-speed gear box, and bevel gear. The 10-h.p. engine has a vertical single-cylinder 115mm. diameter by 115mm. stroke, and runs at a maximum speed of 1,200 revolutions per minute. The 16-h.p. engine comprises two cylinders and runs at a normal speed of 900 revolutions. An illustration of the "Rex" 10-h.p. car was given in our issue of February 7th last.

MESSRS. HAYNES AND SONS, Limited, had on view several of the "Wartburg" cars, including a little two-seated car, fitted with a 5-h.p. two-cylinder vertical water-cooled motor, located in the rear of the tubular frame. Three speeds forward and a reverse motion are provided, the

power being transmitted through a clutch and bevel gearing to the rear axle. The little car is neatly finished, and can, it is stated, maintain an average speed of nineteen miles per hour. A similar car with the engine under a bonnet in the front was also shown; the usual three speeds forward and one backwards are provided, the maximum being twenty miles per hour. The gear box is built in one with the differential case and is made of aluminium, all gears being enclosed and running in oil. The brakes are the usual foot and hand-operated, and are very powerful. One of these cars was recently successfully driven up Church Hill, Caterham, with three passengers on board. A novel little delivery vehicle, with the same under-frame as the first car above alluded to was also shown; it is intended to carry a load of from two to three cwt., and is well adapted to the requirements of tradesmen. In addition they had on view an 8½-h.p. car of the same make, fitted with a two-cylinder engine. The transmission is on the now generally adopted lines of cardan shaft and bevel gear, three speeds and a reverse being available. A special point claimed for the Wartburg cars, which are of German construction, is that the loss of power between the motor and the driving wheels, due to friction, has been reduced to a minimum. A useful feature is the free use made of draw-off cocks, these being provided to each coil of the radiator and the cylinder water-jackets, so that there should be little danger of any water being allowed to remain in the radiator or jackets and freeze in extremely cold weather.

The MAUDSLAY MOTOR COMPANY's exhibit consisted of three complete cars and a chassis. One of the cars was fitted with a convertible omnibus body, designed to meet the requirements of country gentlemen whose places are some distance from the railway; in its wagonette form it serves as a roomy touring car, whilst the omnibus top makes it specially suitable for night work. It is fitted with the Maudslay 25-b.h.p. three-cylinder vertical balanced engine (Fig. 35), and the mechanism is in all respects similar to that of the car which took part in the Reliability trials last year. The second car was fitted with a tonneau body of improved design. It has more accommodation for luggage than is usual in this form of vehicle, and two hinged seats are fitted in the front corners of the tonneau, so that six passengers can be carried in an emergency. The mechanism is also of the 25-b.h.p. three-cylinder type. Removable casings of sheet aluminium are fitted, which completely protect the whole of the mechanism from mud and dust below the car, this being now a standard fitting on all the Maudslay cars. The third vehicle was fitted with a 25-b.h.p. double tonneau with canopy, built for Mr. F. W. Webb, of the L. & N.W. Railway. A chassis to illustrate the new features of the 1903 type was also staged, which embodies the latest developments in English and Continental practice, The inlet

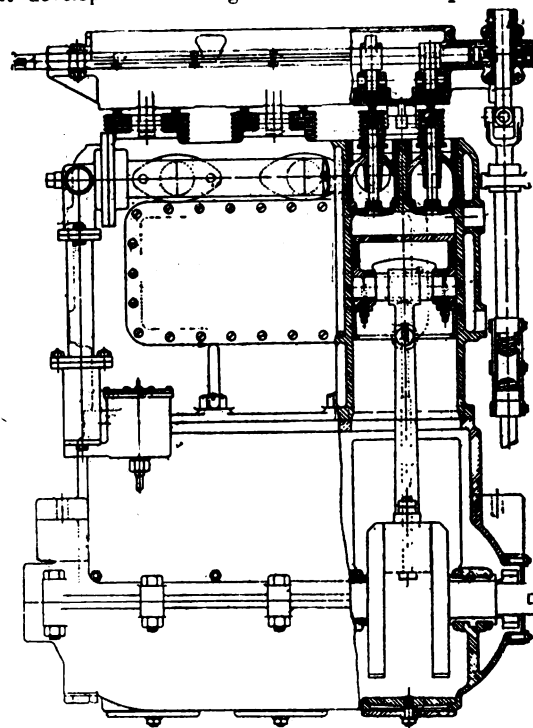


Fig. 35.—The Maudslay Three-Cylinder Motor.

valves of the motor are mechanically actuated, and both inlet and exhaust valves are placed in line on the cylinder head, so that they are easy of access. A fan-cooled radiator is fitted, and forced lubrication is provided throughout, the oil being circulated by a special design of geared pump. We notice that the composite frame, constructed of rectangular solid drawn steel tube, into which ash is driven, is retained in the 1903 patterns. The triple cylinders of the engine, together with their combustion chambers, are a single casting, ensuring freedom from leaky joints, and allowing the use of a high compression. With the foregoing exceptions, the details of the car are similar to those described in these columns early last year, they having been found to give satisfactory results in practice.

STEAM CARS.

Messrs. FODENS, Limited, exhibited two heavy steam vehicles, one being intended to carry a load of five to six tons, having been built for a New Zealand firm, the other to carry four tons and draw two tons on a trailer, bearing the name of Messrs. Mark Mayhew, Limited. In general

the last twelve months over thirty of these wagons were turned out by Messrs. Foden, who are now arranging for an output of two vehicles per week.

The exhibit of the CHIEF BRITISH DEPOT attracted considerable attention owing to the fact that, in addition to the British-built Gardner-Serpollet steam cars, specimens of the Chaboche steam vehicles and Delahaye petrol cars were to be seen. The latter will be dealt with in their

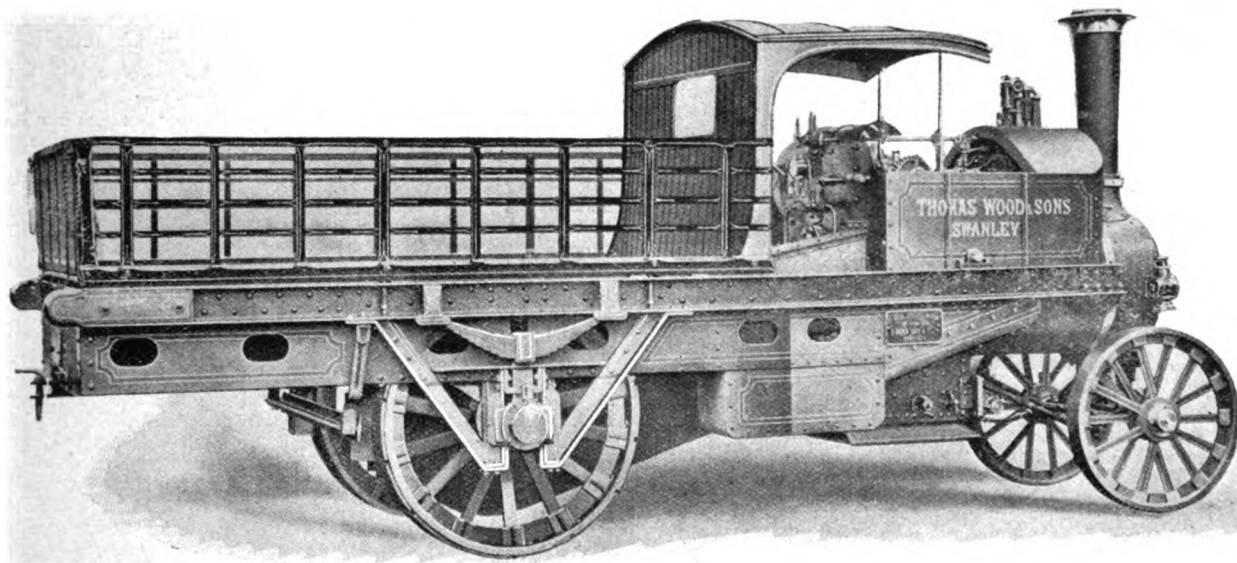


Fig. 36.—The "Foden" Steam Wagon.

appearance the Foden wagons take the form of a small traction engine, behind which is mounted a platform upon which the load is carried. The boiler, which is of the horizontal multitubular type, forms the front part of the framework. The sides of the frame are constructed of channel steel, tied and braced together in such a manner as to secure great strength in the complete lorry. The boiler can be fired with coke, coal, or wood. The wagon is driven by a compound steam engine fixed on the top of the boiler. The cylinders are $4\frac{1}{2}$ in. and $6\frac{1}{2}$ in. diameter, and are fitted with high-pressure gear, by means of which both can, in case of emergency, receive live steam from the boiler, and each cylinder exhaust inde-

pendent section of our report of the Show. Of the Chaboche vehicles, a 12-h.p. chassis (Fig. 37), the parts of which were shown in motion by means of compressed air, and a complete double-phæton, were displayed. The generator, which is of the flash type, and fixed at the rear of the frame, is so constructed that the joints are removed from the high temperature of the fire-box, and as the number of joints has been reduced to a minimum boiler troubles are claimed to be consequently minimised. The fuel used is common paraffin. The burner is so arranged that it can be cleaned or "pricked out" by simply pressing a knob. An automatic regulator controls the feed-

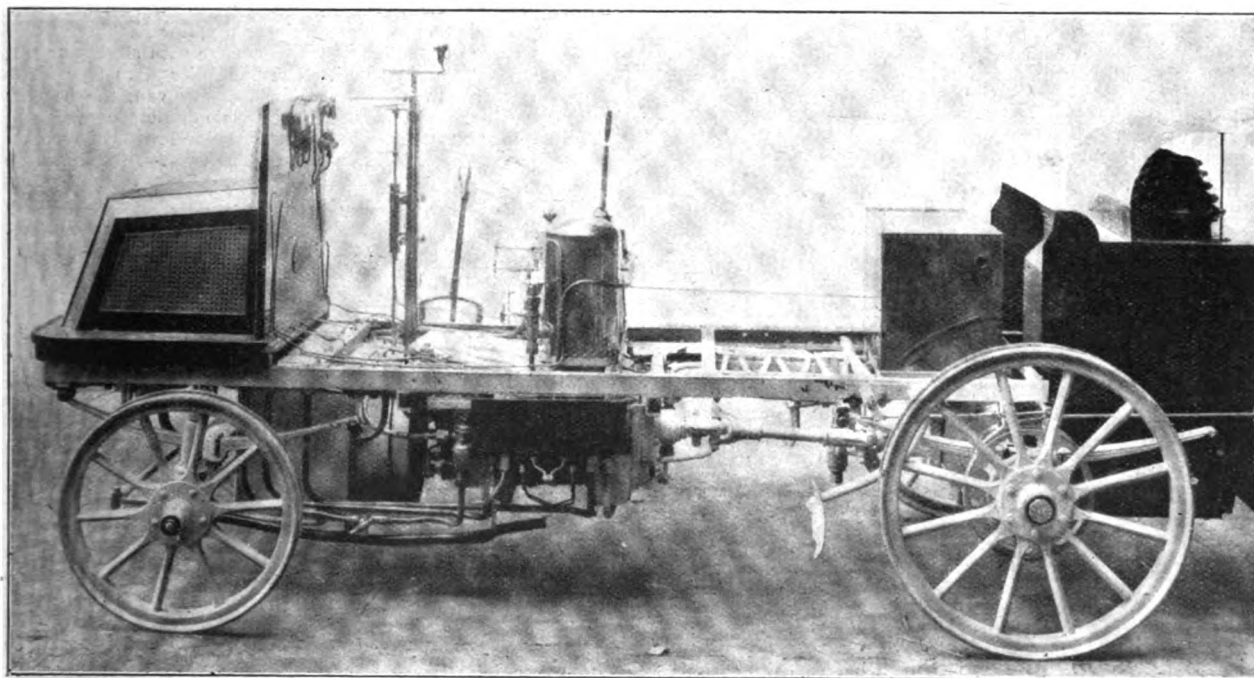


Fig. 37.—Chassis of "Chaboche" Steam Car.

pendently into the chimney. The reversing motion is of the ordinary link type. The power is transmitted by spur wheels to the compensating gear shaft, and thence to the rear axle by an extra strong roller chain. The gearing is arranged for two speeds—9 to 1 and 24 to 1. The vehicle is mounted on laminated springs, with angle axle guards containing the sliding axle boxes, similar to those on the modern railway carriage. During

water and maintains a constant boiler pressure; while an automatic device is attached to the burners operated by the temperature of the generator, and worked independently of the pressure, to prevent any undue or injurious heating of the generator coils. The engine has two double-acting cylinders, with ordinary slide valves and variable expansion gear. Two speed gears are fitted, to avoid the necessity for working the engines

at too high a pressure on severe gradients, and also to obtain more complete condensation. The power is transmitted to the rear live axle by means of a cardan shaft. The whole of the working parts are enclosed in a dust-proof oil bath, and the lubrication is entirely automatic. The water tank is placed in front; under it is the condenser, which is cooled and made more efficient by means of a fan working on a prolongation of the engine shaft. The same exhibit included six of the latest models of the well-known British-built Gardner-Serpollet cars of 6 h.p., 12 h.p., and 20 h.p., and a chassis was also shown in operation by means of compressed air, affording an interesting opportunity to compare side by side these two rival, yet distinct, types of cars, both working with paraffin and flash boilers. The various forms of coachwork shown on the stand were of a very high order, ranging from the ordinary double phaeton to a most elaborate brougham or a sporting char-a-banc.



Fig. 38.—The Stanley Steam Car.

It has not been found necessary to make any important changes in the construction or arrangement of the mechanism of the Gardner-Serpollet vehicles. Several minor improvements have, however, been made, these including the closing in of the safety-valve on the dashboard, an alteration in the burner, which can now be detached without removing any nuts, and the rendering of the engine absolutely steam-tight.

Messrs. Joseph Cockshott and Co., Limited, showed the Stanley steam car, of which a description is given on page 938 of our issue of the 7th February last. Fig. 38 gives a general view of this car, which is the design of the brothers Stanley, who, it will be remembered by old motorists, were the introducers of the steam-car now known as the Locomobile. Superheated steam is generated by the boiler, a high degree of superheat being obtained without recourse to intensely heated metallic surfaces. The boiler consists of a copper shell bound by copper-plated steel wire. The engine is of the double-cylinder horizontal type, and drives the rear axle direct through spur gearing. There are a number of special and interesting features about this car to which we shall probably refer on a later occasion.

The NEW AUTOMOBILE COMPANY had on view specimens of the Miesse 6-h.p. and 10-h.p. steam cars and a chassis of the 6-h.p. type, enabling the details to be inspected. Since these vehicles were described in connection with our report of the 1902 exhibition at the Agricultural Hall, a number of improvements have been effected in them. The steam generator has been modified, and the pedal actuating the throttle is now arranged to work similarly to the clutch pedal of a petrol car—that is to say, the pedal is depressed when it is desired to shut off the steam. Paraffin is used as fuel, but the burner is now adapted to be started by means of petrol. The 6-h.p. car carries 16 gallons of water, which is stated to be sufficient for a run of 70 miles; the fuel capacity is sufficient for a run of eight hours, at an average speed of 20 miles an hour. We are informed that in the case of a 10-h.p. car, one gallon of paraffin has sufficed for a 25-mile run. The cars are fitted with equal-sized wheels, and in outward appearance closely resemble petrol vehicles, the boiler being located under the bonnet in front.

Unfortunately, the WARFIELD COMPANY, Limited, were not able to complete their steam car in time for the Show. The new vehicle comprises a number of special features. Steam is generated in an instantaneous generator, consisting of grids of specially constructed hydraulic tubing capable of resisting a pressure of 3,000 lbs. to the square inch. The water is forced through the generator tubes by an automatic pump of special design and construction, and is, upon entering the first grid, instantaneously converted into steam. In the following tubes it is superheated and expands. The engine is of the four-cylinder single-acting vertical type; it is enclosed in an aluminium air-tight case. The power is transmitted direct from the engine to the rear axle by single-reduction spur gear. Ordinary paraffin is used as fuel. The driving mechanism is hung upon a frame separate from that which carries the body of the car, so preventing undue shock to the mechanism when driving over rough roads.

A couple of "Toledo" two-seated steam cars, one being fitted with hood, were shown on the stand of the VICTORIA CARRIAGE WORKS, Limited.

We gave an illustrated description of these vehicles in our issue of January 24th last, so that we need only mention that the steam generator is a combination of the shell and flash type generators. Two innovations enter into the make-up of the boiler—first, that of a centrifugal separator within the shells, and secondly the addition of a superheating coil. The centrifugal action causes the entire body of water contained between the walls formed by the inner and outer shells to circulate horizontally. The rotary movement thus established throws the water against small dams or scoops placed at the mouth of each tube, which direct the water into the lower ends of the tubes, thus promoting rapid steaming.

ELECTRICAL CARS.

The KRIEGER ELECTRIC CARRIAGE SYNDICATE exhibited a couple of four-seated electrical landaulettes. The feature which distinguishes the Krieger from most other systems is the method of driving direct on to the front instead of the rear wheels. This plan has been found to give most satisfactory results in practice; the front wheels are driven by two independent four-pole compound-wound motors of 4½-h.p. each. They receive current from a battery of forty-four Fulmen cells of 180 ampere-hour capacity. The battery is divided, part being carried under the driver's seat, and the remainder underneath the passengers' seats behind. The controller is adapted to give six speeds forward, two recuperating positions, a reverse motion, and two electrical brakes. The Syndicate is, we learn, about to open a garage for electrical cars at Elizabeth Street, Belgravia, S.W., where every accommodation for the charging of batteries will be provided.

One of the Vehicle Equipment Company's electrical broughams was shown on the stand of the ANGLO-AMERICAN MOTOR CAR COMPANY, Limited. The driver sits behind, as in the case of a hansom, giving the passengers an uninterrupted outlook before them. The under frame is an important feature, this being of the pedestal type, with full elliptical springs, both fore and aft. The yokes enclose the sliding blocks of the axle members and give a universal movement to them, with all the desired flexibility. The battery is of the underslung type, comprising forty-four cells, one charge of which is sufficient for a run of from 35 to 40 miles. The double motor drive is used, the motors being of the General Electric type pivotally hung on the rear axle and driving the rear wheels through spur gearing. Expansion brakes are used on drums on the rear wheels. The controller is of standard General Electric type, of the series parallel order, giving four speeds ahead and two reverse, with an interlock between the reverse lever and main controller drum. On this stand were also shown an electrical delivery van to carry 10 cwt., and an electrical lorry (Fig. 39) to carry two tons. These are a new type to England, but are, we understand, meeting with a large adoption in the United States. In both vehicles the "pedestal" pattern steel underframe is employed. This, while giving a rigid support to the platform or body placed upon it, allows the axles to have a free vertical motion, thus taking up vibration from inequalities of the road surface. The battery is underslung in every case, and is contained in four distinct boxes, each of which can be readily removed by one man. The rear wheels are driven by a pair of General Electric Company's series-wound motors, having composite rawhide and phosphor bronze pinions which engage with steel spur rings bolted on the spokes of the rear wheel. The controller gives four forward and two reverse speeds. In the case of the delivery van, the battery consists of forty-four Exide cells, the capacity of which on one charge is equal to a run of forty miles, with the car fully loaded, on level roads of average surface, at a normal speed of ten miles an hour. The two-ton truck has the same make

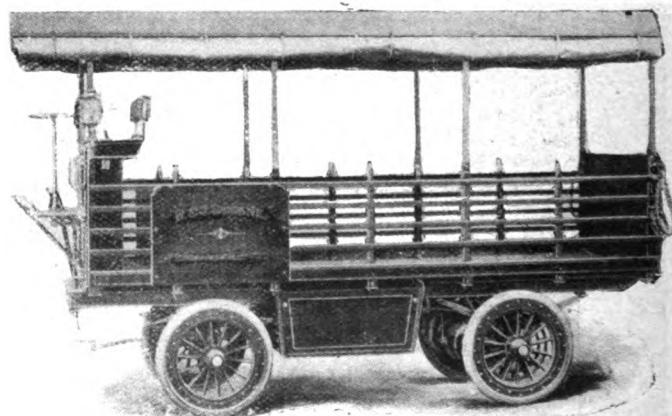


Fig. 39.—The Anglo-American Company's Two-Ton Electrical Lorry.

of battery and the same number of cells, but is of a capacity of 200 ampere-hours. They will run the loaded car thirty to thirty-five miles on a single charge at a speed of eight miles an hour. Both vehicles are fitted with solid rubber tyres and expanding brakes, while we noticed that the rear wheels of the two-ton lorry were provided with sand boxes, the outlet to which is controlled by a pedal. The Baker Imperial Stanhope also formed a part of the display. This little vehicle, which has already been illustrated in the *Journal*, is fitted with a small battery sufficient to run the car about forty miles on one charge. Side tiller steering and pedal-actuated brake on the differential form part of the equipment, while the controller is adapted to give three speeds forward and reverse.

One of the most successful types of electric carriages in France is that of Messrs. Ch. Milde et Cie., whose system is now being introduced into this country by the LANCASTER MOTOR GARAGE. The Milde Company manufacture electric coupés, single and double landaulets, victorias, omnibuses, and light delivery vans, but confined their exhibit to a well-finished coupé. A compound-wound Milde motor of the differential type, carried at the centre of the hind axle, drives both rear wheels through internal spur gearing. The battery is carried partly under the driver's seat in front and partly beneath the passengers' seat behind, and is made up of 42 Heinz cells of 115 ampere-hour capacity. It furnishes sufficient energy to drive the car about 40 miles on a single charge. The steering is effected by a hand-wheel fixed to a vertical pillar to which the controller is also attached. The latter gives nine forward speeds, two electric brakes, two recuperation positions, and three speeds backwards.

COMBINATION PETROL-ELECTRIC CARS.

The combined petrol-electrical vehicle is now receiving the attention of motor-car builders, and already several are on the market, two being shown at the Exhibition last week. Figs. 40 and 41 illustrate the Milde combination four-seated landau exhibited by the LANCASTER MOTOR GARAGE. Under the driver's seat is mounted a 6-h.p. De Dion motor, direct coupled to a 5-kilowatt dynamo made by the same firm. Current is sent from the dynamo to a battery of 42 Heinz accumulators located under the seats, and thence to a compound wound motor suspended from the rear axle. The latter drives the internal gear rings connected with the rear wheels through pinions on its extended shaft. The controller is indicated at C (Fig. 40), and its handle by F; it is adapted to give eight forward and two reverse speeds, as well as two electrical-braking positions. E is the steering wheel, and L L' are the levers to control the mixture in the engine cylinder and the ignition. A pedal operates a powerful band brake on the outer rims of the gear rings on the rear wheels. Notwithstanding the extra mechanism involved by the combined system, the Milde

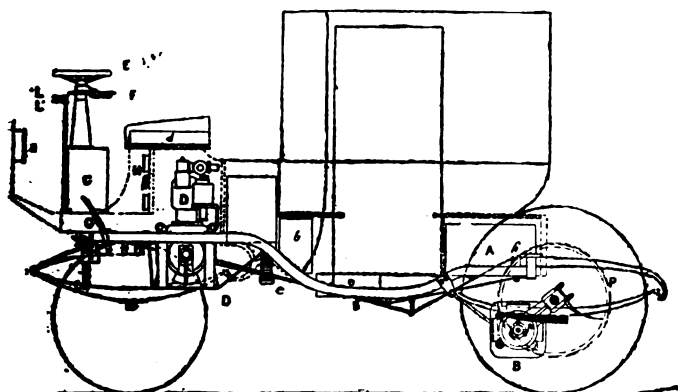


Fig. 40.—The Milde Combination Petrol-Electric Car.

a b Accumulators. c Controller. g Circuit breaking pedal.
B Electric Motor. d Petrol Motor and Dynamo. d Petrol Tank.
e Radiator.

composite landaulette is very little larger than the electric coupé referred to above. The chief difference is a slightly longer wheel-base necessitated by bringing the driver's seat more forward, but the appearance of the completed carriage is quite as elegant as that of the electric vehicle pure and simple. While examining the car it was pointed out to us that the generating plant on the vehicle can be made use of to provide electric light for the owner's house at night, a special switch and connections on each car being provided, so that the leads of the house-wiring system may be attached in place of the motor on the car. If it is not desired to have the petrol motor at work, when the car is only being used for town work, it can be used to charge the battery *in situ* at night, while for long runs the engine can be run on open country roads and shut off when passing through towns or villages. The motor is provided with an electrical governor, by means of which it is automatically stopped when the battery is fully charged. The engine can be started from the seat, this being done by a special switch converting the dynamo, temporarily, into a motor, the necessary current being supplied from the accumulators. The frame of the vehicle is also worthy of notice, this being of channel steel, curved to follow the lines of the lower portion of the vehicle body.

One of the novelties of the Show was the new combination petrol-electrical car which made its appearance on the stand of Mr. E. W. Hart late in the week. In outward appearance the vehicle (Fig. 42) closely resembles a petrol car, from which it differs only in the fact that the usual mechanical change-speed gear is replaced by a dynamo and an electric motor. The petrol motor is of 40 h.p., and comprises four vertical cylinders with mechanical inlet valves, honeycomb radiators, and all the other improvements which the 1903 season has brought to light. The engine is connected to a special four-pole dynamo giving 200 amperes at 200 volts by a flexible coupling. The engine, dynamo, and motor are carried on a special under-frame. No accumulators are provided, the energy generated by the dynamo, being conveyed by cables to the electrical motor; the latter is

connected by spur gearing running in an oil bath to a differential counter-shaft, from which the power is conveyed to the rear axle by side chains. The inclined steering wheel carries a lever which controls the throttle valve on the engine, while the speed of the car is varied by an electrical controller, adapted to give six forward speeds, one reverse, and two electrical braking positions. A noticeable feature of the car is the absence of the usual side levers. The main frame is of steel and wood, the front end being supported on the axles by double-inverted plate springs. In racing trim the car

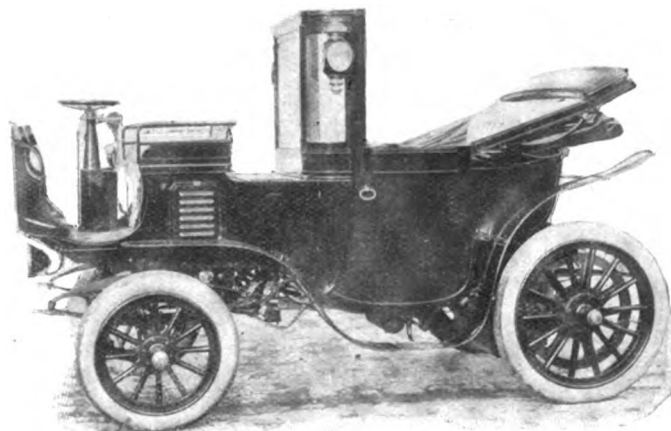


Fig. 41.—The Milde Combination Petrol-Electric Car.

weighs under 1,000 kilos. It has a very smart appearance, and Mr. Hart informs us that its running is remarkably smooth and quiet. We shall watch its behaviour on the road with interest.

GENERAL.

Office fittings and furniture were displayed by the SHANNON, Limited, illustrate their system of letter filing and card indexing; while the Oliver Typewriter was the feature of the OLIVER TYPEWRITER COMPANY's stand, whose desks and office sundries attracted much attention.

Of minor import, but nevertheless useful to automobilists, were the various motor polishes and enamels to be found in the Gallery. The PAGE MANUFACTURING COMPANY showed a capital motor polish and cleanser, designated "Pago," as well as their enamel polish for carriage and enamelled parts. For painting the bodies of motor-cars "Lumo" has been introduced, and other specialities at the stand were worth more than a passing glance.

The AUTOMOTOR ACCESSORIES COMPANY had a stand of varied interest, including motor oils, to which we refer elsewhere. Rosser's patent lock nut, Bell odometers, Eclair coils, etc., were shown, and an electric lamp of 8 volts, which, fitted with a parabolic reflector, throws a light forward



Fig. 42.—The "Hart" Combination Petrol-Electric Car.

some 200 yards. The "D. R." carburettor for motor-bicycles, with an adjustable float adapted for petrol or alcohol, and several of Megevet's accessories, including a soldering apparatus of ingenious design and much used in French automobile workshops, were also shown. A new design in motor caps, specially useful for night riding, is a little novelty the company is introducing, this consisting of an ordinary peak cap, the folds of which can be drawn down to cover most of the face and act as a protection for the neck.

The export and import of motor-cars is being considerably facilitated by Messrs. SHELDON AND CO., whose experience in freightage in connection with automobiles is becoming both varied and extensive. Many of the foreign cars in the Hall were brought into this country in their charge, and during recent months they have had considerable business in despatching vehicles to South Africa, the Straits Settlements, and other colonies. At the present time they are arranging to send the motor-cars of private owners to the Riviera, and in this matter are saving their clients much trouble as well as expense. So completely do the firm cater for the transport of automobiles that they are prepared to design collapsible cases, etc., for vehicles of special size, thus taking the whole matter of conveyance into their own hands.

Messrs. BOULTON AND PAUL, Limited, showed a wood motor house, 15 ft. by 10 ft. by 7 ft.—a specimen of what they are building for a good many car owners in this country. These houses are constructed of strong deal-planed frames, the walls being covered on the outside with rustic joint weather-boarding. A motor-house, workshop, and shelter is also made by this firm, who are evidently going thoroughly into the matter of providing suitable accommodation for motor-cars owned by gentlemen in rural districts.

Parsons' non-skidders were illustrated in the *Journal* on January 10th last, since when ample opportunity has been given motorists of becoming acquainted with their merits. Experience has shown that no injury results to the outer cover from their use, owing to the constant travel that they make round the tyre, while tram lines and greasy roads can be safely negotiated when they are adopted. The PARSONS' NON-SKID COMPANY is certainly introducing a speciality that is becoming appreciated by automobilists.

Messrs. H. J. NICOLL AND CO. were present for the first time, and made a very pleasing introduction into the exhibiting world. Their specialities included a new motor coat of Irish frieze, fitted with fur wind cuffs, lined with wool, and interlined with chamois, with a Prussian collar and Raglan shoulders; it has a very effective appearance, while convenience and comfort is secured by the full skirt. Leather clothing for drivers was also shown, and special raiment for ladies, including coats of pony skin, grey opossum, etc.

An assortment of general-purpose tools was shown by Messrs. LAKE AND ELLIOT, whose specialities for motorists include a useful motor jack, known as the Millennium Express jack. Its working is extremely simple; the screw is lifted by a handle until the top bracket settles against the axle; the middle nut is then screwed down to meet the top of the standard, and the arrow of the nob having been pointed upwards, the vehicle is raised by merely working the handle. Tyre levers and petrol can openers were also shown on Messrs. Lake and Elliot's stand.

The DOHERTY MOTOR ACCESSORIES COMPANY made a bold display of engine bonnets, water tanks, radiators, carburettors, etc. Their bonnets have a capital fastening, well designed to prevent the rattling often associated with such parts, and their outline is distinctly good. Aluminium bodies, wings, and bucket seats are another speciality of the company.

The Anglo-American Oil Company were represented by specimens of their sealed cans for the transport of Pratt's motor spirit—with which their name is so closely identified—according to Government regulations.

An interesting display was made by the Auto Machinery Company, Limited, whose roller bearings for motor-cars consist of rollers, outer bush, and sleeve of well-tempered steel, and accurately ground, the cage ends of steel or gunmetal, with distance rods of steel. Although the first cost of this roller bearing is rather more than that of a plain bearing, the saving in oil and power is said to be considerable, as it is practically unwearable, and the reduced starting effort obtained, amounting to as much as 80 per cent. reduction, gives this bearing an enormous advantage.

The Star Accumulator was shown by the Société Electrique, whose representative is M. Paul See, of Lille. These accumulators are in celluloid cases, and are perfectly water-tight.

A representative collection of lamps, horns, and other accessories was staged in the Gallery by Messrs. Mann and Overton's, who thus made their first appearance as exhibitors in this line of goods.

The motor lamp, illustrated in a recent issue, was to be seen on the stand of Messrs. George Polkey, Ltd. The "Polkey" head-light burns paraffin and has many good points, not the least of which is the fact that dark objects can be discerned by its means at a distance of over thirty yards. The oil is contained in the foot of the lamp, which is always cool, and the circular burner has an attachment to prevent the wick from lowering. There is a simplicity about the construction of the Polkey lamp which is a great point in its favour.

Attention was drawn to the "Cup tyre" by the Shrewsbury and Challiner Tyre Company, Limited, who urge economy as an important point in its favour.

Messrs. A. W. Gamage, Limited, had two stands, showing voiturettes in the Large Hall, their accessories and clothing department being represented in the Arcade. Baskets for automobiles, levers of every description, repair outfits, goggles, motor-horns, ignition sundries, lifting jacks, etc., formed a prominent feature of the display. In leather motor-clothing, Messrs. A. W. Gamage, Limited, had several special features for drivers and mechanics. They are also giving attention to clothing for motor owners, which is rain, wind, and grease proof. A leather waistcoat, double-breasted, and with long sleeves, is specially suitable for motor

cyclists; whilst a double-breasted Chesterfield, made in double and treble-milled meltons, Scotch chevrons, or Irish friezes, was an exhibit of interest.

The "Ayrshire" motor coat was the central feature of Mr. T. H. Holding's show of garments, eminently suitable for motorists. A new dust coat was also shown, all the garments being characterised by good appearance as well as comfortable design.

M. Andre Godin's show of the well-known Ducellier lamps was the object of much interest during the whole week. They were shown in several sizes, including a headlight for voiturettes, fitted with an optical condenser, materially increasing the lighting power. In this ordinary calcium carbide is used. A motor-bicycle lamp, with which Ducellier's generator is employed, was also on view; this containing a charge of carbide which will burn for six hours. This generator requires no gas bag, and its convenient form should be appreciated by motor cyclists. M. Godin's excellent display of lamps was completed by a lamp for brougham use, which gives an ample light for reading. It can be worked in conjunction with a generator placed outside the vehicle, so that no unpleasant smells are occasioned within the carriage. Several motor horns were also shown, in sizes ranging up to 10 in. in diameter. These are fitted with a dust grille, and are made to fit on the dashboard or wings of the car. Made in brass or nickel, some of the special patterns were particularly handsome as well as effective.

One of the most interesting exhibits to the engineering visitor at the show was the "PRIMAT" alterno-rotary petrol motor, exhibited towards the end of the week on the stand of Madame Lockert. Without drawings it is impossible for us to clearly describe this ingenious engine, but as soon as the illustrations are available we shall refer to it at length.

The LONGUEMARE carburettors for both cars and cycles were also shown on the stand of Madame Lockert. These are too well known to need description, but we may briefly refer to the new carburettor for motor-bicycles, which is made in two types, one with float and the other without, both having jackets through which part of the exhaust gases may be made to pass. The firm have also introduced a special carburettor for vaporising alcohol.

Messrs. HEWETSONS, Limited, had on view a couple of the Hewetson motor-bicycles which have already been described in the *Journal*. Magneto ignition is adopted, while the carburettor and exhaust valve are controlled by a lever fitted on the left side of the handle-bar. A wide flat belt conveys the power to the rear wheel.

For the 1903 season the motor-bicycle of the REX MOTOR MANUFACTURING COMPANY, Limited, is being fitted with a 3-h.p. engine, mounted vertically, near the crank bracket. The cylinder is 78 mm. by 78 mm. stroke. Its main features have already been referred to in our pages, but we may mention the method of carrying away the exhaust. The usual exhaust pipe and box are dispensed with, and instead the exhaust box is ingeniously designed so as to be part of the motor itself. A V-belt transmits the power to the pulley on the rear wheel.

From BURBERRY'S came a large assortment of motor clothing, including lap robes for gentlemen and skirt sacs for ladies. Liveries for mechanics were also shown; and a special feature was made of the "Slip-on" coat, which is made in five different ways to suit the climatic conditions of different seasons.

Messrs. Anderson, Anderson and Anderson's, Ltd., showed a varied collection of waterproof and weather-resisting motor garments—a department in which they are achieving considerable distinction.

A stand of effective design in a light metal drew attention to the exhibit of the Britannia Foundry Company, whereon we noticed some remarkably clean castings in iron as well as aluminium. Tyre levers and pumps also found a place among their exhibits.

Some good examples of motor-car body building were shown. Messrs. HOLLOCK AND PRATT had an attractive tonneau body with fluted panels and boldly outlined in light mauve with borders of a darker hue. Another notable exhibit was that of Messrs. W. AND F. THORN, whose main feature was a tonneau made in natural wood. This was of very graceful design, and with the canopy top designed by the makers had an effective appearance. The framework is collapsible, falling to the sides in a few seconds when desired, and a front canopy is also provided which can be collapsed by the withdrawal of a couple of nut-headed screws. Aluminium as well as wooden bodies were also shown by Messrs. W. and F. Thorn, who made a very favourable impression on visitors.

AQUASCUTUM, LIMITED, made their first appearance as exhibitors with a good collection of motor garments, one of their specialities being a motor coat of pure wool, as worn by the King. It is claimed that the "Aquascutum" coat is porous, light and waterproof, while, being of wool, it does not court the effects of cold as do many garments now upon the market. The total weight of the motor coat for summer wear is under 50 ozs., while the heavy weight for the coldest weather only weighs about 6 lbs. Coats for ladies, motor rugs, motor caps, etc., were also shown on this stand.

Messrs. JOSEPH KAYE AND SONS, LIMITED, had their usual show of locomotive oil cans, in copper, brass, and steel, as well as seamless copper, brass and steel oil cans fitted with interchangeable spouts for all kinds of automobiles. Their improved oil economiser for storing quantities of paraffin or thick lubricating oils has been previously described in our columns, and will be found very useful for motorists living in out of the way districts. Messrs. Kaye and Sons have lately brought out a new squirt oil can fitted with a small pump which forces the oil into any part of the machinery as desired.]

(To be continued.)

CORRESPONDENCE.

CHAINS AND LIVE AXLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I do not quite follow Mr. Begbie in some of the points which he raises. The question at issue is briefly the relative advantages of the Panhard type gear, in which the engine drives a countershaft with a differential, by means of bevel gear, and this drives the road wheels by chains, or of the Renault type, in which the chains are done away with, and the differential is at the middle of a live axle, and therefore the use of chains is obviated.

It is often said by the advocates of chains that it is easier to mend a chain than a bevel gear. Certainly, and it is easier to put in a new sparking plug than mend a chain. What has this to do with it? If the chains did away with any of the gear, it would be a debatable point, but at present they do not. As a matter of fact, the one car that went hopelessly to pieces in the Paris-Vienna race from its gear going wrong was the Gordon Bennett Panhard. If it was so easy to mend, why did they not do so?

The fact is that, so far from making the differential more reliable, chains do the reverse. It is well known in engineering circles that small fast-running parts are more liable to wear and go wrong than large and slow-moving ones, and as the differential on the countershaft goes faster than the axle, it has more wear. Further, as this shaft is in addition to the axle, it has to be made very light to get the weight down at all. Mr. Begbie makes a great point of the bearings in a live axle not being good enough to keep the gears in mesh properly. I do not see any difficulty in this at all myself, the gear-box being usually a substantial casting; in any case, the differential on the countershaft is in a worse position as a rule, the gear-box there being usually an aluminium casting, and nothing like as rigid as the malleable one used for live axle gear-boxes.

I do not know in the least what Mr. Begbie means by saying that the "balance gear has to take up the greater portion of the weight of the car." In all the live axles I have seen the weight is carried entirely on the axle bearings, and the car could be towed along with every single gear wheel in the differential smashed to pieces.—Yours truly,

F. STRICKLAND.

THE NUMBERING PROPOSALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—On these may I write you selfishly and sincerely. Since 1898 I have driven all sorts and conditions of vehicles from a Beeston tricycle to a Panhard racing car. My legal expenses during that comparatively long time have amounted to £2 and costs, inflicted for driving at excessive speed. (As a matter of fact, on this occasion I was crawling along on a burst cover.) Inquiry has shown me that this is not by any means exceptional good fortune; it is astonishing to find so many others who have been equally fortunate. Can a stronger argument be advanced for "leaving well alone," "letting sleeping dogs lie," etc.?—Yours faithfully,

CHAS. SANGSTER, M.I.M.E., M.C.E.I.

MECHANICALLY-OPERATED INLET VALVE FOR 3½ H.P. BENZ CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "A. G. J.'s" enquiry relative to above, which appeared in the issue of the *Journal* for March 21st, I may say I have fitted the above to my 3½-h.p. Benz., and after running about 200 miles, have found it perfectly safe, and a great improvement. I think there should not be much danger of the exhaust gas firing the petrol in the carburettor, as there is a stronger spring provided to close the valve quickly. Of course, the timing would require to be correct to get the best results, and precaution should be taken to retard the sparking to ensure no backfiring upon starting the engine, otherwise the motor will run back rather more freely than with the automatic valve. I also found a stronger spring was required on the air inlet valve.

The advantages I find with this new arrangement are that I can run my engine much slower, enabling me to keep it going during the time I am in a customer's establishment, also I can drive on top speed in town at a much reduced rate, allowing me to keep on top where I was formerly compelled to reduce to slow. I can also take top speed on gradients where before I had to change to slow. I have run the car for the past eighteen months entirely for travelling purposes, and am very pleased to find an arrangement to improve the going, which the above certainly has done.—Yours truly,

R. STEELE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As there appears to be no independent reply forthcoming re the letter by "A. G. J.," on our mechanically-operated inlet valve for Benz cars, we should like to point out that the mechanical valve, being worked by an instantaneous cam, and the valve being fitted with a very strong spring, any possible danger of exhaust gases passing into the carburettor is obviated. Furthermore, the valve is bound to open full at commencement of suction stroke, and close instantly at completion of stroke, which

ensures a full supply of gas at all speeds at which the engine might be running. Trusting this will make it quite clear to your correspondent.—Yours faithfully,

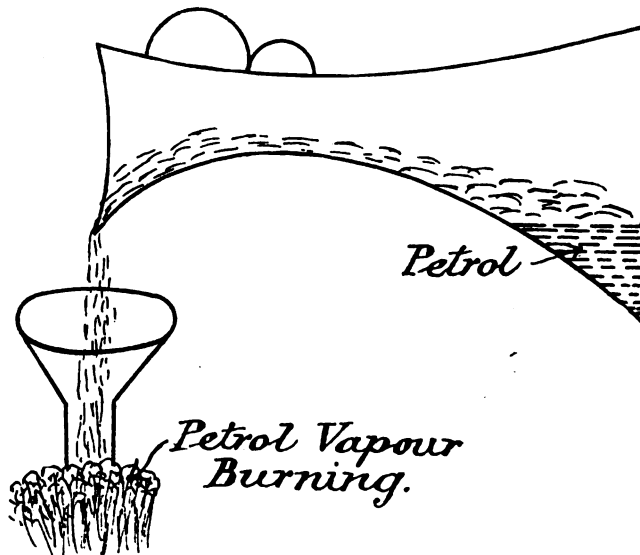
RATCLIFFE BROS.

THE SPARKING PLUG "DISCOVERY."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice Dr. Hardwicke mentions that had I put the petrol rag under the gap spark it would have fired, as the petrol vapour is light. In this he is quite wrong; petrol vapour is much heavier than atmospheric air, a fact which cannot be too widely known. I can call to mind at least two accidents that this knowledge might have prevented. One case was one in which some wet petrol rags were carried over instead of under a naked light; in the other case some petrol was spilt in a motor inspection pit; a considerable time was allowed for the petrol to dry up, and then a lighted candle was taken into the pit; nobody was killed, but they will not do it again.

The following little experiment is quite safe, and will demonstrate what



I say. Put a small quantity of petrol into an enamelled steel jug (about the half-gallon size); hold it over a fire until just boiling. The heavy vapour in the jug can now be seen and pours out like a liquid. If a funnel is prepared with a piece of wire gauze over the bottom of it, the vapour can be poured out of the jug through the funnel and set on fire at the bottom, without setting fire to the vapour or petrol in the jug. If there is no wire gauze the fire will go up through the funnel and into the jug. Have a rolled-up cloth ready and, if this occurs, push it into the jug. There is not the least danger, however, if the experiment is done as I suggest. I do not say that the gap spark will not fire petrol, but that it requires a rich mixture, so that is fairly safe.—Yours truly,

E. ESTCOURT.

MR. MAWDSLEY BROOKE writes: "In reference to Dr. Hardwicke's letter, some two years ago, in conjunction with Mr. Estcourt, I experimented with petrol vapour, and we found that it did not rise, as Dr. Hardwicke states, but fell."

ALLEGED OBSTRUCTION OF THE POLICE.

Two Surrey policemen were taking the name of a motorist at Thames Ditton who was alleged to have been furiously driving his car, when Mr. E. C. Webb rushed up, and, according to the constables, said, "Take no notice of those liars. They have only timed you with a d—d oilcan." His interference caused a large crowd to collect, and resulted in the constables taking him into custody. On Monday he was charged at the Kingston-on-Thames Police Court with obstructing the police. The magistrates thought that Mr. Webb had interfered unwisely, discharging him with a caution.

A MOTOR-CAR ACCIDENT.

A FRENCHMAN named Alban Gentilh has surrendered to his bail at the Marlborough Street Police Court (London) to answer a charge of furiously driving a motor-car in Hyde Park, and causing serious bodily harm to William Smith, of Harleyford Street, Vauxhall. The Treasury prosecuted, and it was alleged that Gentilh, whilst driving the car at a furious rate, suddenly swerved to the "off-side," and knocked down Smith, who was riding a bicycle. Although ordered to stop, he took no notice, and drove out of the park at a rapid pace. The injured man was taken to St. George's Hospital suffering from concussion of the brain. The case was adjourned, bail being allowed in the sum of £100.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Clerkenwell (London) ...	H. Walcker	—	£5.
Romford	Col. G. C. Wyndham, Colchester	—	20s., etc.
"	W. Lord, Fulham	—	40s., etc.
Bishop's Stortford	A. Brooks, London, W.	—	—
"	W. J. Abbott, Westbury	—	£4, etc.
Worthing ...	H. Homfray, Lavant	—	£5, etc.
Derby	H. Butler, Derby	20 m. p. h.	Dismissed.
Caerphilly ...	C. Pearce, Merthyr	—	10s., etc.
Oxford	H. Allman, Oxford	—	Dismissed.
Winchester ...	Sir T. Lipton's driver	20 m. p. h.	10s., etc.
Harleston ...	Mr. Waterpetty, Ditchingham	16 m. p. h.	£5, etc.
Sutton Coldfield	H. Harper, Shirley	—	16s. 6d., etc.
Chertsey	*F. May, London	—	£2, etc.
"	*F. W. Shortland, London	—	£2, etc.
"	*J. Pratley, Addlestone	—	£3, etc.
Woking	J. Goody, Clapham	20 m. p. h.	£3, etc.
Chichester ...	H. Humphrey, Chichester	—	£2, etc.
Kingston	Col. Crompton, R.E.	22 m. p. h.	£3, etc.
Doncaster ...	A. Chase, Anerley	—	£6, etc.
Epsom	A. Leather, Epsom	16 m. p. h.	40s.
"	W. Dunk, Bournemouth	24 m. p. h.	40s.
"	E. W. Peall, Streatham	—	£3.
"	T. Breddock, Streatham	—	£3.
Ipswich	R. Egerton	—	£2, etc.
Arundel	Mrs. Frank Wigley, Kingston	22 m. p. h.	£7 10s., etc.

Where no alleged speed is given it is understood to be above the legal limit.
*Motor Cycle Cases.

At the Kingston Court on Monday an inspector assured the Chairman of the Bench that the justices had nothing to do with the trapping of motorists on the highway.

SERGEANT JARRETT proved the case against Mr. Goody at Woking. At the same court, for leaving a horse and cart unattended in Chertsey Road, Woking, on February 21st, William Cutler was fined 10s., Police-constable Eade giving evidence.

In the case against Colonel Crompton, the police evidence was to the effect that he was driving a car at the rate of 22 miles per hour. Defendant disputed the accuracy of the constable's watch, and said he had a Government apparatus on the car which showed the speed to be exactly 17½ miles an hour. He went on to say that if he was fined the magistrates would weaken his authority as vice-president of the Automobile Club, because if he brought up a Club member for being an inconsiderate driver, he might turn round and say, "You have been convicted yourself." The chairman of the Bench said a paper issued by the defendant's Club had been sent to him, and in it he found this amazing statement: "The Chairman of the Kingston County Bench was seen out measuring the Portsmouth Road." A paper which could publish that ought not to be read by respectable people. The Bench had decided to impose a penalty of £3.

In fining M. Walcker (who came from Paris to see the Motor-Car Exhibition at the Agricultural Hall), Mr. d'Eyncourt said he had even greater difficulty in arriving at the pace of motor-cars than he had in judging the pace of horses. It was admitted for the defence that the limit of speed was being exceeded. If there was any place in London where pace ought to be slow it was down Pentonville Hill. It was one of the sharpest hills in London. The pace of motor-cars did not seem to be so much one of standard as the circumstances under which it was indulged in.

ANOTHER summons for the excessive driving of a motor-car has been heard at the Arundel County Bench. The summons was against Ellen Wigley, wife of Frank Wigley, of Kingston Hill, and was for driving at 22½ miles an hour on the Arundel and Worthing road. The peculiarity of the case was that defendant, when timed, was motoring with her solicitor and husband to the Arundel Court, at which she defended another charge of excessive driving within Arundel. That case was dismissed, as reported in last week's *Journal*. Defendant did not appear, nor was she represented. A letter from her solicitor (Mr. Staplee Firth) ran: "I have advised my client not to go to the expense of defending this case, as it would cost more than if she is fined. But I ask you to refuse to allow your Court to be made the medium of such stupid and impudent barbarity." A fine of £7 10s. and costs was imposed.

NO LIGHT.

C. A. PASCALL, of Barnes, has been summoned for driving a motor-car at Slough after sunset without a red light behind. He was fined 10s.

POLICE TRAPS.

Now that the touring season is beginning news of police traps will be welcomed for publication in the *Journal*.

The police between Pontypridd and Taff's Well, on the Cardiff road, utilise the telephone in the capture of motorists.

The Surbiton Parade, on the Portsmouth road, is a place along which motorists should go carefully.

A POLICE trap is in active operation between Hove and Shoreham.

The police are timing cars over the road from London to Cambridge. Their great efforts are being made between Sawbridgeworth and Bishop's Stortford.

MR. G. H. WARNE, of Warne's Hotel, Worthing, writes warning motorists to be on the look-out on Sunday at Washington, just at the junction of the road which branches off to Steyning, about seven miles from Worthing. The police of the Steyning division are said to be determined to catch certain scorchers returning from Brighton, via Steyning. Motorists should drive slowly over Broadwater Common, one mile from Worthing, as many children run out of a school facing this road, and it has been found necessary to place a constable there every Sunday to protect them.

At the extreme end of Hove a constable frequently hides behind a wall.

At Lancing coastguard station, on the roadside, two miles from Worthing, there is a small hut or shed. Some time ago an unsportsmanlike constable jumped out of this and got something for his trouble. Motorists are earnestly requested not to wound the constable should one spring out of this hut.

THE temperature of the Worthing police is reported by Mr. Warne as normal. The speed of motorists entering Worthing is under the legal limit, with the result that there have been no fines. Last Sunday twenty-five cars passed through the town.

SEVERAL automobile firms gave facilities for their work-people to visit the Exhibition at the Agricultural Hall, among them being the Clarendon Motor Company, Limited, who ran a special saloon from Coventry for the benefit of a score of their workmen to visit the Hall. The manager, Mr. W. H. Hammon, believes that the expense of the organisation of such a trip is well repaid in the enlightenment of the workmen's minds as to what is being done in the industry.

TO CORRESPONDENTS.

All communications intended for insertion in this *Journal* or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, APRIL 11, 1903.

[No. 214.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE decision of the authorities to make a Government measure of the Bill for the holding of the Gordon Bennett Race in Ireland put an end to all doubt concerning its success. It is an exceedingly novel matter to be made the subject of Parliamentary action, and strongly illustrates the remarkable advance which has been made in motoring within the last few years. If the race comes off without any mishaps, the result will be beneficial to the whole kingdom, as it will hasten the introduction of other forms of advanced locomotion. There is no fear, however, that the usefulness of the horse will be minimised, says the "Freeman's Journal." The patient animal will be spared the drudgery of doing work which was unsuitable for him. Most people can remember the pitiful sight of a pair of tram horses tugging a big tram-car, and being stopped in the middle of some up-grade to set down a passenger. Then came most painful work to get the huge car in motion again. Electricity has spared us a continuance of this revolting sight; and other forms of locomotion will release thousands of poor beasts from the terrible existences they lead in carrying loads beyond their powers. The horse will be used for light and pleasant work, and his breed will be further improved when mechanical traction takes over the drudgery. The horse will be a friend, not a slave.

Touring Experiences.

ALTHOUGH the weather has this season not been very favourable to automobile touring, many motorists have not thereby been deterred from making excursions. Much useful information will therefore be added to the stock of experience of motoring tourists. Many valuable lessons will, no doubt, be learned by automobilists when, for instance, their vehicles are in want of small repairs far away from a well-equipped workshop, and we would like to hear from any of our readers who may meet with some interesting experience during their Easter tours. Motorists always like to read of the experiences of their *confreres*, particularly as to what trouble they had to contend with, and how it was remedied. A knowledge of how to cope with troubles and breakdowns on the road is one of the prime essentials to successful touring by motor-car.

A School for Chauffeurs.

MR. MARK MAYHEW, L.C.C., has written to Mr. Sidney Webb, L.C.C., who is a member of the Council's Technical Education Board, suggesting that the board should take up the instruction of motor-car mechanics and drivers. Here is a grand opportunity for the Polytechnics. There is no doubt that the theory and working of the petrol engine and the transmission of its power to the car ought to be taught in these modern institutions. There is an attractive opening for intelligent young men, who would be able, with instruction, to properly carry out the work which is now, in many cases, wretchedly performed by most incompetent individuals. Mr. Mayhew's views will be endorsed by many an owner of an automobile.

Common Sense from the Bench.

COUNTY magistrates are now joining hands with those motorists who advocate the abolition of the speed limit, and their adhesion to this view should influence many who have hitherto been inclined to favour numbering to withdraw from such a position. During the hearing of nine summonses against motorists the other day, the Chairman of the County Bench at Kingston, Mr. W. Y. Cockburn, said it had been stated that the Act under which "we proceed is practically obsolete, and that it ought to be repealed. I agree, and I think that the best thing to do would be to abolish the speed limit altogether, and leave only that section of the Act which makes motorists responsible for travelling to the danger of the public. But Portsmouth Road on Sunday mornings is one of the most dangerous roads in Surrey. Within half a mile nine down-grade roads lead into it, and the scores of people coming down these roads have to reckon with cyclists and motorists at the bottom. Yet, in face of these facts, the War Office recently sent a man to test the speed of motor-cars on the Portsmouth Road." We quite agree with the suggestion that the speed limit should be done away with, and that motorists should only be charged when driving to the danger of the public.

Motor-Car Lamps.

CONSIDERABLE comment has been made recently on the gradual increase in the candle power of the headlights carried on motor-cars. Although fairly powerful lamps are a requisite to safe travel at night, consideration for other road users would seem to point to a limit of power which should not be exceeded. The glare of the headlight of hundreds of candle power is certainly annoying to persons meeting a vehicle carrying such a light, and has a tendency to scare horses. The practice of carrying excessively-powerful lamps is a parallel to the use of unduly powerful horns. No definite limits can well be prescribed, and legislative regulation of these points would be objectionable. Automobilists should use their own judgment in these matters, remembering that if undue liberties are taken in these respects the public may retaliate through oppressive legislation. Much of the objection to powerful lamps can, remarks the "Horseless Age," be overcome by the use of suitable shields, which reflect the light on to the road instead of throwing it up in the air. Horses would then not notice the glare of the lights until within a very short distance of the vehicle, which would have passed them before they had time to cut any capers.

The Cost of Maintenance.

IN his magazine Mr. Henry Norman, M.P., attempts to answer the question "Can I afford a motor car?" But here the factors in arriving at some estimate of the cost are so various that no two agree. Taking, however, a £350 car for four persons and giving it fair usage the net yearly cost is put down at £176 after saving £40 in cab and railway fares and paying £104 for wages. This is upon a mileage basis of 4,000. For a car for two and employing no driver the cost is put down at £60, and this is rightly considered a justification of the purchase.

Noiseless Cars.

EFFORTS are being made by many makers to reduce the noise made by petrol cars, and just as the dust nuisance is being considered in trials of motor-cars so the noiseless running of the vehicles is being made a subject of study.

Electric and steam cars have proved attractive to many people on the ground of their quiet behaviour, and when the touring petrol car can be produced to travel as noiselessly as the most famous car of the year a great advance in business will immediately result.

A Fowl Story.

THE landlord of the "Cock" Inn at Hutton (Staffs.) was contemplating the traffic before his house recently, when a motor-car went hurtling by in the direction of Tutbury. A minute later one of his fowls was brought to him; it had

expired in consequence of pressure exerted by the motor-car wheels on the roadway, the poor hen being between the upper and lower surfaces. The driver of the automobile expressed his willingness to pay the estimated value of the fallen fowl—and this was done. The automobile may have greater effects on the poultry industry of the country than is apparent on first consideration. In his paper at the Automobile Club the other



A Roadside Incident.

week, Mr. M. O'Gorman mentioned that when touring near Gloucester on his motor-bicycle on one occasion he was trying to think out how it was that the natural process of elimination had not produced a breed of chickens that did *not* cross the road under wheels, when he felt a thud like kicking a football, and saw that the middle of his front wheel had bumped a hen, which went away squeaking hysterically. He thought he had broken its wing. The old lady who owned the bird caught it. Mr. O'Gorman got off and found nothing wrong, so he gave her sixpence, in return for which bounty she told him her secret. "When I wants a pullet killed I sends them into the road, and it's like as not it's killed and paid for, and I has my pullet into the bargain."

Navigating the Air.

MR. G. A. SMALLBONE, who for several years was manager for Messrs. Spencer and Co., the well-known aeronauts, and is now the president of the Greater Britain Aerial Navigation Club, is the inventor of an appliance for steering the ordinary

pear-shaped balloon, and will shortly put it to a practical test. Meanwhile, the Aero Club is arranging an interesting programme for the summer, and opportunities will be given for motor-cars to pursue the balloons at some of the meetings. The Crystal Palace and the Ranelagh Club will be the scenes of operation, a special night ascent being contemplated for June 6th.

Road Maintenance.

THERE was a practical ring about the paper by Mr. R. J. Thomas at the United Service Institution on Monday, and from his position as county surveyor of Buckinghamshire he was able to throw light on some abstruse points. There are 62 administrative County Councils in England and Wales, excluding the County of London and county boroughs. The Isle of Wight having its own special clause in the Act of 1888, and West Suffolk having no main roads, there are thus 60 county councils responsible for the 26,978 miles of main roads existing in England. Mr. Thomas showed that the annual cost of maintaining these roads is £2,120,332, or about £78 a mile. Thirty-eight of the councils maintain their roads by direct management, eighteen entrust the work to rural district councils, and four use both methods. The direct method is, in Mr. Thomas's opinion, easier and more economical, and in touching upon the quality and nature of material used he pointed out that slag has been used to an increasing extent of late years, especially for light roads. He called attention to a recently-patented invention of an engineer of great experience, whereby hot slag is mixed with tar by machinery and impregnated with its oil. The patentee claims to produce a surface impervious to moisture—the bane of road maintenance—and free from dust and mud. Mr. Thomas thinks that carefully cut and polished field flint will bear a greater crushing strain than almost any stone, but its qualities as a road material are only moderate. "In my opinion," he added, "the most reliable granite is that which, when machine broken, contains the largest proportion of cubical and the smallest of bruised, cracked, and chipped stone when passed through a powerful crusher, has at least 75 per cent. of its weight over one inch in size, absorbs the least quantity of water, and lasts longest under traffic."

London Traffic.

WITH regard to London traffic, Mr. Thomas did not venture to suggest what he considered the most desirable surface for metropolitan streets, but he remarked that the question of traffic of varying speed traversing the same road or street at one time was a vital one. This must be admitted by anyone who has seen the lumbering wagons crawling along Oxford Street, or several railway vans loading goods in Piccadilly Circus at the busiest time of the day. The custom of drivers keeping two or three feet away from the near-side kerb seriously reduces the capabilities of the street, without yielding an atom of good to the driver, whose thoughtlessness inconveniences overtaking traffic. These matters should be subject to police regulations. He would have no double line of tramways upon any road unless its width is at least 40 feet; and would, moreover, give every encouragement to motor-cars.

Developing Irish Industry.

APPARENTLY the central idea of the scheme for developing Irish transport, which Mr. Wyndham announced in the House of Commons last week, is the utilisation of motor-cars for the carrying of Irish produce from the farms to the best available market or the nearest port. Lord Iveagh and Mr. Pirrie are said to be providing all the capital necessary for the carrying out of their plans, and the profits derived from the working of the scheme will be devoted to the development of the country in other directions. A Conference on Irish Industries will be held in Dublin on the 15th inst., when some announcement with regard to the project may be expected.

In the Lake District.

RUSKIN abhorred the railway system that darkened the verdure of his favourite hills, and belched forth smoke against the whitewashed walls of the cottages by the Lakes. Whether he would have been better pleased with the automobile is a subject of pure conjecture. Anyhow, it is likely to put an end to the long-talked-of railway extension from Langworthy to

Pooley Bridge, at the foot of Lake Ulleswater, a limited liability company having been formed for the promotion of a passenger and goods automobile service in the Penrith district. The first regular service will be between Penrith and Patterdale, and should it prove successful an early extension to the whole of the Eastern Fellside district will be made.

In Fair Devon.

Ilfracombe summer traffic, and for this purpose a motor-coach service is to be established. The motor vehicles would enable visitors from Ilfracombe to go to Lynton and back for considerably less money than the former rates and in half the time, the route taken being by way of Berrydown and avoiding the Combe Martin Hill. There is no doubt that this is but one of many similar schemes of which something will be heard during the coming summer.

In fair Devon, too, the automobile is intruding, and in moving the adoption of the report of the Lynton and Barnstaple Railway Company, the other day, Sir George Newnes, M.P., announced the intention of the directors to develop the

typical Craven scenery. It is stated that one of the omnibus proprietors, whose headquarters are at Grassington and who has run a service of 'buses from Skipton to Buckden for many years, has transferred his interest in the concern to the Edinburgh firm, and has also parted with his two licensed houses, one at Grassington and the other at Kettlewell—an appreciation of the signs of the times that bespeaks intelligent foresight on the part of this livery-keeper.

An Echo of the Show.

THE value of the Agricultural Hall Motor Car Exhibition in practically popularising automobilism continues to find confirmation in the local journals published in various parts of the country. From a Darlington paper we learn:—"The motor fever is upon us. Motor-cars and motor-bicycles have become quite common in the streets of the sister towns, and only last week four well known Stockton gentlemen—to wit, Councillor T. E. Atherby, Councillor Stephenson, Mr. Richard Gaunt, and Mr. N. Downing—travelled to the Automobile Show in London and purchased cars of the latest design. One, I am told, essayed

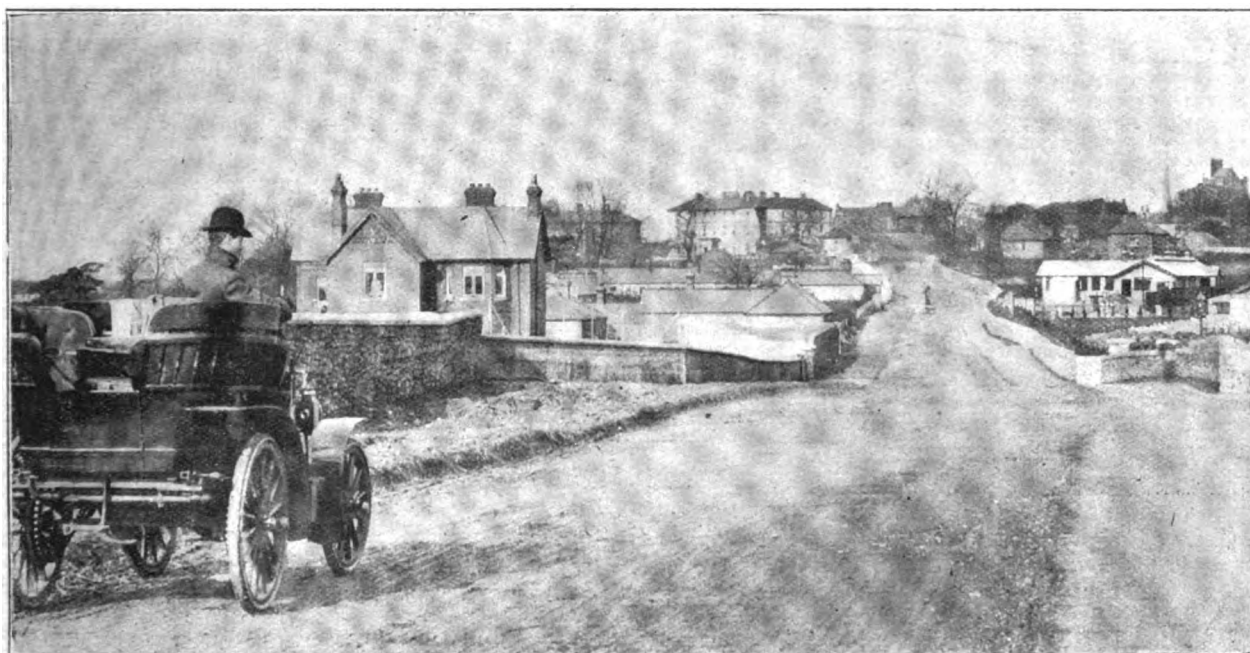


Photo by]

The Gordon Bennett Course—The Road into Kildare from the Curragh.

[D. Lawrence.

On the North-East Coast.

OR more strictly utilitarian import is the good news from the north to the effect that in order to enter effectively into competition with the northern railway companies for the quick delivery of freight traffic, one of the leading shipping firms (Messrs. Furness, Withy and Co.) on the north-east coast is proposing to institute a daily service of fast steamers between London, Newcastle-on-Tyne, and other ports on that part of the coast. On arrival in port the traffic, it is stated, will be delivered over the surrounding district by a service of motor cars. In Lancashire the electric tramways are providing good facilities for the conveyance of goods as well as passengers, and the promise of comparison between the two rival systems of road transport is an event of considerable importance.

Other Developments.

THE rumour is current in Skipton that an Edinburgh firm has taken the preliminary steps for launching a motor-car service in that district, and that during the summer this class of vehicular traffic will ply for hire between Skipton and Buckden—a charming run of about twenty miles through

bringing the 'animal' home by road, but when somewhere near York it turned stupid, and had to be left for the night at a farm."

Esperanto—An International Language.

THE question of an international language has long attracted considerable attention, and since the Touring Club de France has taken an active interest in its development that known as "Esperanto" has come into much prominence in cycling and motoring circles in France. Whether it has a brilliant future before it, we are not, for the moment, concerned. Touring on the Continent has, however, become a favourite means of spending a holiday to many English motorists, among whom may be some of a linguistic turn of mind. To such, the "Students' Complete Text Book of Esperanto," by Mr. J. C. O'Connor, B.A., just published by the "Review of Reviews," should prove instructive, as it contains a full grammar, exercises, conversations, commercial letters, and two vocabularies. Esperanto Societies already exist in France and Sweden, and one has recently been formed in this country. With the view of increasing the number of English students, the author has endeavoured, with apparent success, to prepare a text-book

which, while being brief and clear, contains everything necessary for a sound knowledge of the language.

The 1903 Exhibition.

Now that the great Exhibition is over and bookings for the 1904 Show are well advanced, it is very clear that the business done was substantial and satisfactory. Before the event anticipations of good trade rose high, and all in the industry looked forward to a week of great things. Although in some cases the superlative hopes indulged in hardly realised the wild visions that had been pictured, there is no doubt that the exhibitors left the Hall with plenty of interested inquiries that are now being turned into orders. In the great majority of cases the business actually done at the Show was better than at any previous display, and the prestige of the Agricultural Hall Exhibition was enhanced in value.

Next Year's Show.

UPON this point we speak with confidence after a glance at the plans for next year's show. Firms have already booked their old places, and, in many cases, suggestions for extensions of space have had to be declined owing to the re-allotment of stands in close proximity, while restrictions have also had to be made. Next year the Minor Hall will be wholly devoted to heavy vehicles, while elsewhere, spaces are being taken up with an eagerness that bespeaks success.

The Mercedes Metre.

THE poet of the motor-car has arrived, and his "imperishable poem," as Mr. William Archer describes it, appears in the current number of the "World's Work." Mr. W. E. Henley has caught the rhythm of the motor and transferred it to lines that will live. His eulogy is a vivid conception of the automobile movement, and every motorist will appreciate this fine tribute to the newer experiences of speed which the motor-car has rendered possible.

"Hence the Mercedes !
Look at her. Shapeless ?
Unhandsome ? Unpaintable ?
Yes ; but the strength
Of some seventy-five horses :
Seventy-five puissant,
Superb fellow creatures
Is summed and contained
In her pipes and her cylinders.

Yet ask but a sign,
But a proof of her quality,
Handle her valves,
Her essentials, her secrets,
And she runs down the birds
(You can catch them like flies
As, poor wretches, they race from you !) ;
Ay, and becomes
As the Spirit and Mind
Of God's nearest approach
To Himself hath so willed it,
The Angel of Speed—
Speed in the Laugh of the Lord.

Thus the Mercedes
Comes, lo, she comes,
This astonishing device,
This amazing Mercedes,
With Speed—
Speed in the Fear of the Lord."

Considerations of space forbid the publication of further extracts from a poem of three or four hundred lines which is the most remarkable contribution to the magazine literature of the the current month.

A Pungent Introduction.

THE art of catalogue writing is not easily acquired—in fact, it has no settled standard by which to be judged. A well-known automobile firm has, however, obtained the services of a virile writer whose pungent vocabulary is utilised to introduce the technical details as follows:—A man who does not own a motor car has two courses open to him: he can buy one, or he can console himself by trying to believe the marvellous yarns which represent car owners as spending half their time in gaol, and the other half in a hospital. When the motor was a fabulous monster of which terrible tales were told by people who had never seen a car to others who knew no more about the matter, these stories were not hard to believe. Every new invention is at first regarded with dread. When railways were proposed, it was very gravely asserted that the sparks from the engines would set fire to every cottage and risk within half a mile of the line. The slanders upon the character of the motor-car, if one takes the trouble to analyse them, may be reduced to four elementary falsehoods: that the car is dangerous; that it often refuses to move; that its owner is perpetually harassed by the police; and that the cost of up-keep is inordinate. Now let us put four home truths against these four silly stories:—(1) A motor-car is safer than a vehicle drawn by a horse, much safer than a vehicle drawn by two horses, and much safer than a horse ridden by a man. (2) A car does not stick unless you stick it. (3) The police no longer persecute automobilists. (4) It costs less to keep a car than to do less work with horses." For the arguments by which these points are reached, readers must be referred to the catalogue of the Farman Automobile Co., Ltd.

Racing at Nice.

AT the last moment official permission to run the mile and kilometre races on the Promenade des Anglais at Nice was granted, the events being held between 5.30 and seven o'clock on Tuesday morning. Special measures were taken to prevent the public from even approaching the course. The chief performance in the contests was that of M. Serpollet, who covered the kilometre, with a flying start, in 29 1-5 sec. The time does not constitute a record. Nor were the times lowered for the mile, which the winner (Braun) covered in 1 min. 3 4-5ths secs. on a Mercedes.

AMONG the motorists passing through Dulwich on Sunday was the Prime Minister.

MESSRS. DE DION-BOUTON, LIMITED, have removed from Brook Street, W., to larger premises at 10, Great Marlborough Street, Regent Street, London, W.

ON the 15th inst. Messrs. Corrigan and Company will hold a motor-car auction at the Earlsfoot Rink, Dublin.

TWO Gobron-Brillie racers put in their appearance at Nice on Friday last week. They are fitted with engines of no less than 110-h.p. The four-cylinders have eight pistons.

THE Prince and Princess of Wales paid a visit to Hampton Court Palace on Sunday afternoon, when they travelled from London by motor-car to see the Duke of Teck, who is in command of the Palace guard.

MR. HARVEY FOSTER, the President of the Sheffield Automobile Club, has offered two challenge cups to be competed for by members of that organisation. The first contest will take place on May 16th, on the Padley Wood Hill.

MR. WALTER LONG, replying to a question in the House of Commons on Tuesday, said he did not think legislation as to the length of automobiles would be practicable. He hoped, however, to make proposals for the general regulation of motor-vehicles.

WE have received a number of new catalogues and circulars from the General Electric Company, Limited. One is a copy of the eleventh edition of section "W," which is devoted to electrical wires and cables, while one of the circulars describes an electric motor-car bell and a motor-bicycle ignition coil lately introduced by the company.

GORDON BENNETT RACE NOTES.

WE shall be pleased to receive the names and addresses of qualified repairers, etc., in Ireland, so that they may be notified to motorists who will be crossing the Irish Sea for the Gordon Bennett race. In our next issue we propose to give the names of some leading firms supplying petrol, etc., and shall be glad to have the assistance of readers on the other side in making this list complete.

THE unfortunate death of Count Zborowski has naturally led many to inquire as to what effect it is likely to have upon the prospects of the coming event. It should be remembered, however, that the conditions between the hill-climbing race on the La Turbie road, and those in the Irish counties are entirely

SOME enthusiastic Manchester motorists have chartered one of the Manchester and Dublin Steamship Company's steamers for the outward and homeward journey from Cottonopolis to Ireland in connection with the race. Mr. T. F. Dodd, of Trafford House, Urmston, is one of the party, and local motorists desiring to join the contingent should communicate with him ere long.

GREEN and red flags will be used to warn the competitors when they are approaching curves on the route.

MR. G. N. JESSOP, of Maryborough, has offered to find accommodation for four or five cars at his stores free of charge during the Gordon Bennett race.

DURING the automobile fortnight in Ireland some interest



The Austrian Military Authorities Accustoming Horses to the Motor-Car.

--- [Allgemeine Automobil-Zeitung].

different. In the one case there was a winding course with at least one competitor unused to his vehicle, whilst in the other there are convenient and long stretches, with comparatively few sharp turns; but more than that, each of the competitors will be perfectly well acquainted with the vehicle he is driving, and this constitutes a factor of safety leading to the confident hope that no such unfortunate event will mar the prospects of the great event.

THE Northern Railway Company of France and the South-Eastern and Chatham Railway Company have offered the French Automobile Club to supply any members desirous of visiting Ireland to see the great race with first-class return tickets between Paris and London, at the price of second-class return tickets.

ing motor-cycle events will be decided. On the Saturday following the great race there will be three races over the course mapped out in Phoenix Park, Dublin, and on Tuesday, July 7th, there will be three similar events over the four-mile course at Newcastle. The races will probably be for three classes of vehicles: the first for touring cycles up to 2 h.p., the second for touring or racing cycles up to 3 h.p., and the third for cycles of over 3 h.p.

THE Eliminating test for the American Gordon Bennett team is to be held to-day (Saturday).

THE demand for high-class pleasure horses is reported to be as great or greater than ever, while the demand for the utility animal of commerce is steadily on the decline, the development of mechanical traction being held as the cause.

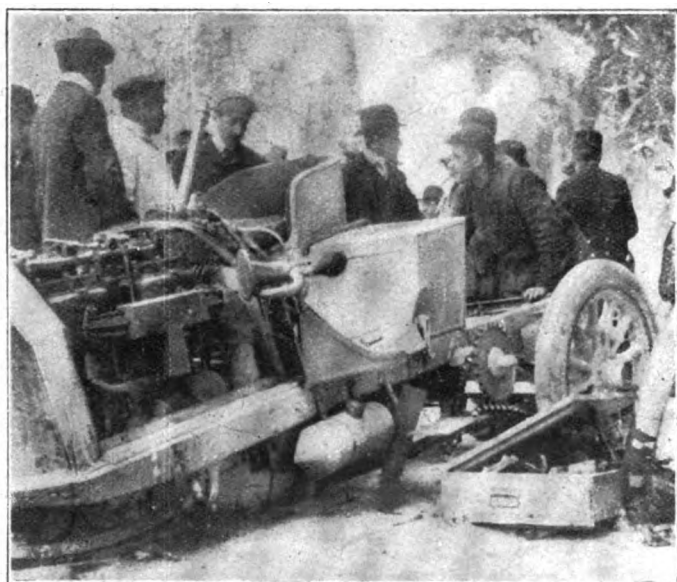
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CONTINENTAL NOTES.

BY "AUTOMAN."

TO say that a profound impression has been caused on the Continent by the terrible death of Count Zborowski hardly expresses the situation adequately. The news of the tragedy began to filter through in automobile circles in Paris by Wednesday noon, with exaggerated details, but it was not until the morning papers of Thursday appeared that the shock came to the public. Automobile racing has come to be quite a feature in French modern life, and almost everyone in all grades of society knew by name and reputation the late Count, who was a familiar figure at the A.C.F., and better known as the capitalist of the Falconnet tyre manufactory.

To say that the death of Count Zborowski is universally regretted, not only by all those who knew him personally, but also by the great mass of automobilists, and all those who take an interest in automobilism on the Continent, is only stating the plain facts, for he was known and recognised to be a first-class sportsman. He raced for racing's sake, and ran straight, with a courage which nothing daunted. The Paris-Vienna race taught this lesson to everybody, for he started in this competition, one may say, single-handed. I mean that there was no pro-



Count Zborowski's Car after the Accident.

vision made for assisting him over the road, and, unlike the case of those who ran for Panhard-Levassor, Mors, Renault, and the leading makers, who had relays of men all along the roads from start to finish, ready to assist with information and supplies the competitors who were driving their cars, Zborowski had only himself to depend upon. I well remember his blue-painted Mercedes, with the No. 26 painted on the front of the honeycomb radiator, rushing to the winning-post at Belfort, at Bregenz, and at Salzburg, and I shall not easily forget that memorable day on the Vienna racecourse, when his car came up in a cloud of dust, the real winner of the Paris-Vienna contest. For, in spite of the fine which was added to his time through a quibble with which the actual speed of his car and the actual time occupied in running the race had nothing whatever to do, the Count, outside circles who are interested otherwise, is always considered on the Continent to be the real winner of the Paris Vienna motor-car race of 1902.

THE sad accident on the Turbie Hill, which robbed us of a leader and which may have other far-reaching results, disastrous to automobile interests, I will describe as I had it from an eye-witness. It was 9 o'clock on Wednesday morning, and the sun shined brightly out of a Mediterranean blue sky; everything

looked as if the Turbie contest was going to be a great success. The Count's 60-h.p. Mercedes, painted blue like his Paris-Vienna winner, was fifth to start. Under ordinary circumstances the Count was rather a placid man, and particularly cool and calm. But on this particular morning he seemed to be nervous and agitated, and instead of, as was his habit, attending to his own car, and taking no notice of the others, he went from car to car in an agitated manner. Werner, Degrais, Hieronymus, and Gasteau had gone off one after the other, and it came to the Count's turn. He was so impatient that he made a false start, and had to be stopped. The course of the Turbie Hill, as it was arranged for this year's competition, consisted of a short distance of flat before the ascent began, a sharp turn to the left, about a quarter of a mile from the start, and a steep incline on the right hand side of the road. Just about the centre of the bend the road is bordered by perpendicular rocks. The Count started on his second speed, but almost immediately got in his third, and then his fourth, and swung wide open his gas and ignition levers, to get the utmost possible speed out of his car. Arriving at the corner, he rather hugged the right hand side of the road towards the rocks, intending, no doubt, to make a great sweep round. His mechanic, Baron Palange, who was seated on the footboard, and his head out of sight, was seen to raise his hand off the splash board—then the right hand side of the car grazed the rocks, and all was over in a second. The contact with the rocks at the fearful speed stopped the car, which skidded right round to the left, thus throwing the unfortunate Count against the face of the rock, where he was instantly killed. The more fortunate Baron, seated as he was on the left hand side of the car, and safeguarded by the splashboard, was thrown out into the road and only slightly injured.

NEARLY everybody puts the accident down to excessive speed at the bend, but in my opinion this is a mistake; I think a careful study of the conditions, as I propose to explain them, will bring automobilists to my conviction. There is no doubt that the speed was great. It is computed by Jellineck and others at 106 kilometres per hour, though how they arrive at this figure I am at a loss to know. Because the gas lever was wide open and the fourth speed in, it is argued that the speed must have been 106 kilometres an hour; but in this calculation it has been forgotten that the car was climbing a steep incline, so that, to calculate the exact speed, it would be necessary to take into consideration the weight of the car, the incline, and the wind pressure. Be this as it may, the accident, in my opinion, was not caused by the speed, even if this was 106 kilometres an hour.

THE cause of the accident was undoubtedly a momentary error of judgment on the part of Count Zborowski. If those who are constantly on the road will consider for a moment, they will remember the occasions when, in turning a corner, they have hugged too much the side of the road opposite to the turn, and when they found it difficult to keep out of the ditch. Now, if the high speed was the cause of the accident, the car would have overturned, which it did not do. The unfortunate Count took too wide a sweep, instead of taking a sharp cut at the left hand corner, and this wide sweep would gradually store up a centrifugal force, not only in the car, but also in the two occupants, and the reason that the Baron de Palange was seen to lift his hand was without doubt the cause that his body was swung over out of balance towards the Count. It must be remembered that the Baron de Palange's head was below the splashboard, to keep out of the wind, and he, therefore, did not see the danger. The Count's body would be also swung out towards the road, which would make it all the more difficult for him to get round the corner.

If additional proof of this theory be required, I should find it in the fact that Bauer was killed on the 30th March, 1900, at exactly the same place, on a car which could not go half as fast, whilst since then there have been two competitions round the same corner on faster cars, and under worse conditions. Even

granting that Count Zborowski's car was going at a higher speed than any of the four cars that preceded him on the 1st inst., there could not be a very material difference in the speed.

As was the case in the Paris-Berlin race, when Brasier had the misfortune to run over a child between Epernay and Rheims, the French Governmental authorities have completely lost their heads. There was, however, an excuse for hasty action in 1901, for at that time the general public in France were against motor-racing. The daily papers howled for its suppression, and the Government had to face the interpellation of M. Gautier de Clagny and a clamouring Chamber. This time almost all the daily papers and the great majority of the public have had nothing to say, except to express regret at the loss of a good sportsman. The Minister of the Interior, M. Combes, notwithstanding, not only put the veto on the Turbie hill-climbing trials, but stopped the kilometre and mile races on the Promenade des Anglais.

THERE was some excuse for stopping the Turbie hill-climbing competition, for, after all, there is little sense and no utility in holding such a competition on a dangerous, sinuous hill. The winning car is not necessarily the best car: it may, on the other

depended upon this contest for large orders, and they are naturally indignant that the authorities should have ruthlessly done them this injury.

Of the Nice meeting there only now remain the brake test and the *Concours au Bidon*, but all the enthusiasm is gone, and no one takes any interest in what is left. For the brake tests Rochet-Schneider had the monopoly of the day, and proved their car could be stopped in 6 metres, going forward, and in 1.85 metres going backward.

THE Spanish part of the Paris-Madrid course has been definitely fixed. Every level crossing, turn in the road, *dos d'ane*, *caniveau*, village, and every bridge has been classed, marked, and indicated, so that the competitors will have no difficulty in knowing the road, if they pay attention to the instructions. There are only seven neutralisations. Sixteen chronometers are being sent from Paris to the different controllers in Spain, and trial runs are being made in and out of the controls, so as to teach the Spanish timekeepers their work. Each provincial committee has at its head the dignitaries, municipal and prefectural, so that the organisation of the race



The Nice Week—The Touring Cars at St. Martin-Vesuble.

hand, be an inferior car, driven by a man who turns the corners at the greatest speed, and risks the overturning of his car. It would be more logical and much wiser to seek out a long, straight hill, for instance, Gailon, where the trial of cars would bring out the points of the best vehicle distinctly and almost independently of the driver.

To stop the kilometre and mile races on an asphalt track, perfectly straight, and from which the public are absolutely excluded, is not only ridiculous, but it is unworthy of anyone placed in a serious and responsible position. The injustice of the proceedings can be gauged if one considers for a moment that every year both jockeys and gentlemen are killed in flat-racing and steeplechasing, and yet no one thinks of stopping race meetings on account of such accidents. Yacht racing, too, has its fatalities. Football claims its victims, as does almost every sport, and yet no one thinks for an instant of interfering, except to take prudent and useful precautions. Large sums of money have been spent by various automobile manufacturers in view of the mile and kilometre competitions of Nice, and all this money will be absolutely thrown away. Several makers

in Spain will be as complete as possible and thoroughly official. Prizes are rolling in from every side, and both the Duc de Asturias and the Infante Isabelle are giving awards. The town of San Sebastian gives two, and other towns along the road will no doubt follow this example. The winner of the race will have nothing to complain of from the point of view of prizes. The number of entries stands now at 254, Nos. 251 and 252 being taken by Bat motor-cycles. The entries with a single fee will close on the 15th inst., after which date until the 15th of May double fees will be charged.

THE "Circuit des Ardennes" has been definitely fixed for the 20th and 21st of May. It is to be a two days' event, so that the tourists (cars, voiturettes, and motor-cycles) can run together on one day, and the heavy cars and light cars together on the next day. The course on the first day will not be the same as last year, but will be 91½ miles in length, without neutralisations, and also without any level crossings. Twice round will constitute the race. For the light and heavy cars last year's course will be maintained—that is to say, 317½ miles. The meeting, coming just as it does before Paris-Madrid, cannot possibly be

very complete, but may, on the other hand, serve as a training ground for some of the starters in the big event.

THE Alsace branch of the De Dietrich Co. have just completed a new 24-h.p. car to the designs of Signor E. Bugatti, a young Italian engineer, who lately drove the vehicle from Niederbronn to Vienna, where, at the exhibition, it attracted considerable attention. The engine is on novel lines, comprising four cylinders cast in two pairs, and having no water jackets in the usual sense of the word. Instead, each pair of cylinders is enclosed in an aluminium case, through which the water is circulated. To admit of this, it has been necessary to arrange the sparking plugs and the inlet and exhaust valves directly on the top of the cylinders. Signor Bugatti, who is now head of the technical department of the De Dietrich Co.'s Alsace works, is building a special 50-h.p. racer for Paris-Madrid. This will have a four-cylinder motor on the lines of the one referred to above. The frame will be of tubular construction, the tubes being used to carry the cylinder-cooling water. The car will be long and narrow, the wheel base being no less than $11\frac{1}{2}$ ft. and the track under 4 ft. The driver's seat will be located directly over the rear axle.

THE programme of the Aix-les-Bains "automobile fortnight" has been drawn up by the Automobile Clubs of Avignon and Rhone as follows:—June 18th, Mont-Ventoux Hill Climb; 19th, "Caravan" Avignon-Grenoble; 20th, arrival at Aix; 21st, Battle of Flowers; 22nd, Automobile paper chase; 23rd, Road Race from Albertville to Montmelian and back; 24th, Dent du Chat Hill Climb; 25th, Kilometre trials near Aix; 26th, an excursion; 27th, run from Aix to Grenoble; and 28th, Laffrey Hill Climb.

THE *Concours au Bidon* was run off on Sunday at Nice. In this, each competitor was given 100 grammes of petrol for each 50 kilogrammes of the weight of the car complete in running order, the vehicles being run until they came to a standstill. The results are appended:—

	Car.	Petrol allowed Kilog.	Distance run. Kil.
1.	F. de Millo	4 h.p. Renault	1 ... 33.707
2.	Balon	6 h.p. De Dion Bouton	1.08 ... 31.483
3.	Portal	6 h.p. De Dion Bouton	1.066 ... 31.54
4.	Cannet	6 h.p. Panhard	2.505 ... 29.27
5.	Balot	12 h.p. Georges Richard	2.165 ... 26.03
6.	Dumas	8 h.p. Rochet-Schneider	2.255 ... 24.470
7.	Lafrete	6 h.p. De Dion	1.3 ... 24.28
8.	Marchal	12 h.p. Rochet-Schneider	2.24 ... 19.63
9.	Joliot	16 h.p. Rochet-Schneider	2.815 ... 19.08
10.	Dupre	6 h.p. Panhard	1.865 ... 18.653
11.	Bary	12 h.p. Mors	2.495 ... 24.220
12.	Tiran y	4 h.p. Renault	1.145 ... 13.

THE body of Count Zborowski was transferred on Friday morning last week to a special carriage at the Nice station of the Paris-Lyons-Mediterranean Railway to be conveyed to Melton Mowbray. Wreaths of flowers, sent by the Automobile Clubs of Nice, France, Great Britain and Ireland, and Germany, were laid on the coffin. Brief addresses were spoken by Count de Montsaunlin, vice-president of the Automobile Club of Nice, and Baron von Zuylen, president of the Automobile Club of France.

THE Sheffield Automobile Club have had a pleasant meet at Bawtry, on the Great North Road. The following members had arrived when the club photo was taken, viz., Messrs. E. F. Coupe, 8-h.p. Daimler; Ben Hind, 6-h.p. Darracq; E. H. Hill, 6-h.p. Benz; Jas. Barber, 12-h.p. Belsize; Brooke Shaw, 5-h.p. Decauville; J. H. Pickford, 10-h.p. Wolseley; A. J. Blyde, 3½-h.p. De Dion; J. and A. J. Robson, 6-h.p. Locomobile; D. Bookless, 6-h.p. Marshall; Percy Thompson, 8-h.p. M.M.C.; W. Watts, 6-h.p. Humber; A. T. Dewhurst, F. B. Cawood, H. E. Mallinder, J. Walker, and F. W. Oates, on motor-tricycles; W. James, E. M. Machin, and W. Coldwell, on motor-bicycles; T. W. Revill and G. Flather, 3½-h.p. quad.

SOME USEFUL NOTES.

ALWAYS carry a spare washer with the spare plug. To detach a washer from an old plug requires a good deal of time and still more patience. If no spare washer is to hand, a ring of well-oiled brown paper will form an efficient temporary substitute.

A FEW drops of oil should occasionally be applied to the "exhaust" tappet, so that it may percolate down between the tappet and the guide in which it works. The lubrication of this guide, which on some engines depends on the oil splashed up by the "half-time" wheels, is often inefficient and may not be enough to prevent "seizing" of the tappet.

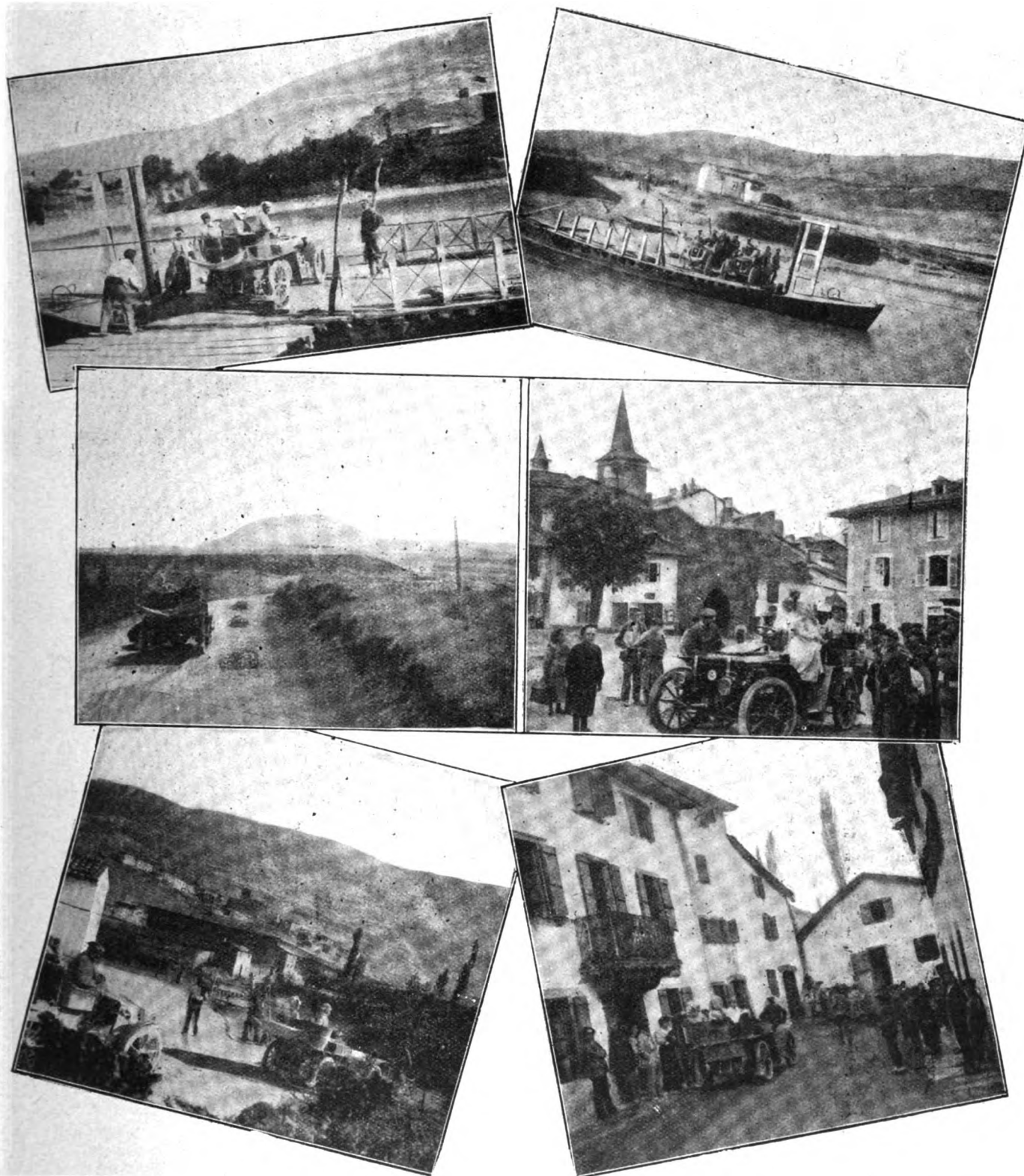
UNLESS there is a weak spot in your tyre and you fear a burst, always pump it hard. When the car has a full load on board, the tyres should never splay more than half an inch. The disadvantages of driving on a soft tyre are (1) increased tendency to skid; (2) "rolling" of the tyre in the rim, tending to tear off the beading; (3) increased liability to puncture.

BOILS on tyre covers are due to accumulation of dirt from the road between the layers of rubber, which has gained admission through a cut. The dirt should be carefully removed with a pen-knife or other suitable instrument, the original cut being, if necessary, enlarged for the purpose. The chink left in the rubber should next be cleaned out with petrol, and its walls solutioned together. The tyre must not be used for eight hours, so as to enable the solution to "set" thoroughly. If a boil is neglected it will gradually increase in size, and so weaken the cover at this spot as to prepare the way for a burst.

AUTOMOBILISTS have been so much accustomed to receiving spirit for use in their engines of very slight variation in density that they have become indifferent as to testing its specific gravity. But the spirit supplied sometimes varies from the density of .680 to .685 degrees at 60 degrees Fahr. Hence the necessity of occasional tests being made to find the specific gravity; correction should be made for the temperature unless it happens to be exactly 60 degrees Fahr. The rule is, according to Messrs. Carless, Capel and Leonard's little hand-book:—For every two degrees which the thermometer of the Fahrenheit scale registers above 60 degrees, one degree should be added to the reading of the densimeter, and *vice versa* for every two degrees which the thermometer may register below 60 degrees Fahr., one degree should be deducted from the reading of the densimeter. To save the trouble of thinking of this rule and making the calculation, the following table shows what the reading of the densimeter will be at various temperatures from 30 degrees Fahr. (2 degrees below freezing point) up to 90 degrees Fahr. if the petrol is of the proper standard sp. gr. .680. The first and third columns represent the temperature as shown by thermometer, and the second and fourth columns indicate the correct reading of the densimeter for the corresponding temperature:—

Densimeter			Densimeter		
Deg. Fahr.		Reading.	Deg. Fahr.		Reading.
30	...	.695	62	...	.679
32	...	.694	64	...	.678
34	...	.693	66	...	.677
36	...	.692	68	...	.676
38	...	.691	70	...	.675
40	...	.690	72	...	.674
42	...	.689	74	...	.673
44	...	.688	76	...	.672
46	...	.687	78	...	.671
48	...	.686	80	...	.670
50	...	.685	82	...	.669
52	...	.684	84	...	.668
54	...	.683	86	...	.667
56	...	.682	88	...	.666
58	...	.681	90	...	.665
60	...	.680			

The Paris-Madrid Race.



[La Franc: Automobile,

SNAPSHOTS ON THE ROUTE NEAR THE FRANÇO-SPANISH FRONTIER.

1 and 2--The Ferry at Aragon.

3--Near Pampeluna.

5--At Leuteria.

4--At St. Jean Pied de Port.

6--The French Custom House at Artega.

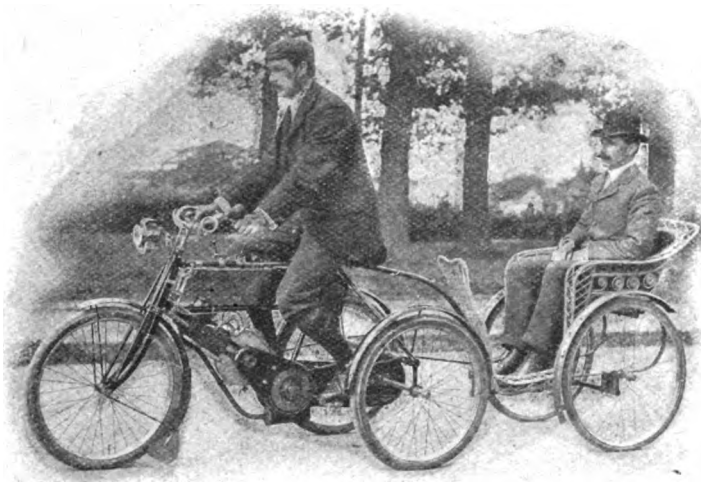
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MOTOR-CYCLING NEWS.

THE head-quarters of the Motor Cycling Club during Easter will be the Red Lion Hotel, Salisbury. A start will be made from the Marble Arch on Good Friday morning at 10.30, calling at the Town Hall, Staines, at 12 o'clock, for South London members to join there. The members taking part in the Club's Easter Tour will return to London on Monday.

MEDALS are to be awarded by the Alpha Motor Cycle Club, of Brooklyn, U.S.A., for the best attendance on club runs during the year. The system to be adopted is a novel one. One point will be deducted for all failures to reach the fixed destination, and another if the rider does not make the return trip, the awards, of course, being made on the total scores at the end of the season.

IN another column we publish the views of Mr. E. H. Arnott with regard to the classification for motor-bicycles, which should be carefully studied by English makers. He hopes that the Automobile Club will accept the Continental ruling which has proved so satisfactory, both from the point of view of



The Humber Motor-Tricycle and Traller.

sport and mechanical improvement, and will not inaugurate a new classification at variance with that of every other country.

ON the 25th ult. the motor-cycle section of the Austrian Touring Club held a consumption trial for motor-bicycles over a 100 kilometre course near Vienna. The contest was confined to machines weighing under 50 kilogrammes, with an allowance of 7 kilogrammes for those having magneto ignition. Although speed was not a factor in the result, only those attaining a rate of over 25 kilometres (15½ miles) per hour were eligible for awards. There were fourteen starters, of whom all but one finished. The first three, together with their petrol consumption, are shown in the following table:—

		Consumption of petrol.
1. Herr Bayschlag	1½-h.p. Opel	2 lbs.
2. Herr Frén	1½-h.p. Helios	2½ lbs.
3. Herr Curjel	1½-h.p. Laurin-Klement	3¼ lbs.

OWING to the greasy state of the track at Canning-town on Saturday only one of the five matches arranged between F. W. Chase and H. Martin was decided. The result was:—One Mile Match (standing start): H. Martin beat F. W. Chase by six yards. Time, 1 min. 34 2-5 sec. A Five Miles Handicap resulted thus:—T. E. Newman, 2½-h.p. machine, 8 sec. start, first; J. F. Crundall, 2½-h.p., 5 sec., second; H. Collier, 2½-h.p., 5 sec., third; T. H. Tessier, 3-h.p., 5 sec., fourth. Won by 150 yards; nearly a lap between the next two. Time, 7 min. 33-5 sec.

IN response to several representations, the committee of the Scottish Automobile Club (Western Section) have agreed to form a motor-cycle section in connection with the Glasgow to London non-stop trial, 13th and 14th May. The entry fee is four guineas, and the last date for receiving entries is 1st May.

THIS week we select for illustration the motor-bicycle recently put on the market by the Swift Cycle Company, Limited. The

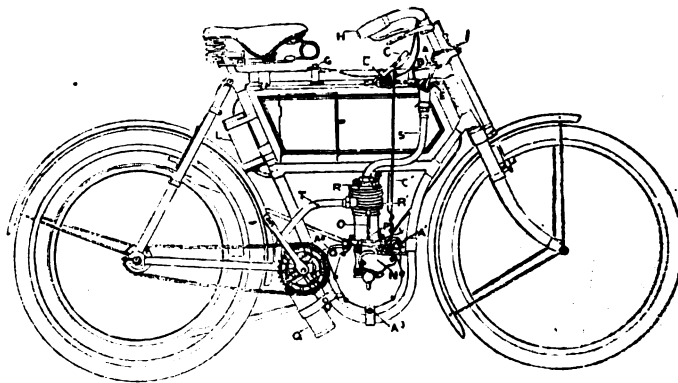


Fig. 1.

frame of the machine is of strong construction, allowing the engine to occupy a space midway between the two wheels, and fairly low down. It is provided with a duplex head built on the same lines as the old Swift multicycles. The engine is a 2-h.p. "Ariel" placed vertically in a looped frame, to which it is attached by three brazed joints bolted to the aluminium crank chamber. The carburettor is of the surface type, with the usual throttle and gas mixture levers A and B on the top bar. At C is the speed control lever, which advances and retards the timing of the explosion by rotating the fibre commutator block around the two to one shaft. This lever is provided with a spring contact against a notched quadrant E, by means of which it may be kept in a positive position when once adjusted by the rider. When the timing of the ignition is sufficiently retarded a trip on the timing lever comes in contact with an exhaust valve lifter. The contact breaker is shown in Fig. 2. The cam 7 raises the end of the spring H, and causes it to make contact with the platinum-headed screw on the post 6. It will be seen that the shape of the cam 7 is such that a quick break is made, thus preventing undue burning of the platinum on the spring blade and adjustment screw. The device is not a trembler but simply makes and breaks the circuit, the trembler being

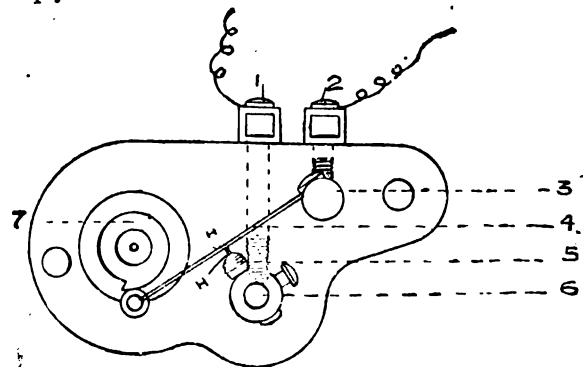


Fig. 2.

provided on the coil. Belt transmission is adopted, while a lubricating tank and pump are provided. Two rim brakes are fitted, both operated from the handle-bar.

MR. CATHCART WASON, M.P., has suggested to the Home Office that a corps of policemen on motor-cycles should be established so as to "impose restraint on those who are driving in crowded streets at a furious pace to the danger of the public."

HERE AND THERE.

A NEW list of petrol agents has been issued by Messrs. Carless, Capel and Leonard.

THE Indian Government is said to be prepared to levy an import duty of 5 per cent. on petrol cans.

THE Japan Automobile Co., with a capital of £100,000, has been organised in Tokio to operate a public service of motor vehicles.



Photo by]

The C.G.V. 8-Cylinder Petrol Car.

[Argent Archer.

AN article on emergencies of the road, and how the motorist should meet them, appears in the current "Idler." After all, however, experience is the only satisfactory guide.

MR. D. CITROEN has just issued a handsome coloured show-card. It depicts a depot window, in which is staged a Minerva motor-bicycle undergoing critical examination at the hands of a lady and gentleman. Motor and cycle agents would do well to write for a copy.

FROM the Franklin Manufacturing Company, of Syracuse, N.Y., U.S.A., comes a copy of "Poor Richard's Almanack." This is on the lines of an almanack first published in 1732 by Benjamin Franklin, but for 1903 is made to sing the praises of the Franklin petrol car, the feature of which is the use of a 10-h.p. 4-cylinder air-cooled motor.

A DIRECTORY of the Merchants, Manufacturers and Shippers of the World for 1903 has just been issued by Kelly's Directories, Ltd. It is the seventeenth edition, the first having been published in 1877. In the concluding week of August last the compilers received the corrected lists for 212 different towns and ports, and the numbers for the weeks following were 160, 205, and 106 respectively; in the week ending October 18th the number was 348, and for the two weeks following 169 and 294. Of these numbers about two-thirds of such corrected lists came from agents starting from Central and Southern Europe, Asia, North Africa, Mexico, Central and South America, &c., from their head London office, and other agents working directly under the superintendence of their agents in New York, Hamburg, &c. For correct information as to the remoter towns and ports they have largely to depend on the invaluable assistance rendered by H.M.'s Consuls and Vice Consuls, by Secretaries of Chamber of Commerce, bankers, &c. The book is intended to bring together, in one volume, not only the names of the manufacturers, merchants, exporters, &c., of the United Kingdom trading with the Colonies and abroad, but also those of all the more important foreign merchants (whether exporters to or importers from the United Kingdom), and further, those of the manufacturers of the principal goods imported into the United Kingdom. The publishers thus offer a guide to both the import and the export trades of the world, containing a large amount of information not to be found in any other book. Accuracy has been ensured in a great volume in which the automobile section is now increasing in importance.

THE Edinburgh city authorities are purchasing a steam motor fire engine at a cost of £1,050.

THE Midland Automobile Club is making Hereford its headquarters for the annual Easter Monday tour.

THE first run in connection with the South Wales and Monmouthshire Automobile Club will take place on Easter Monday, the destination being Llantrisant.

THE Ranelagh Motor Company, Limited, has been registered with a capital of £1,500 to carry on the business of manufacturers of motor-cars, etc., at 6, Ranelagh Parade, Barnes.

A GERMAIN car built in 1895 for M. M. Gillard, president of the Liege Automobile Club, has run for over 60,000 miles and is still in daily use between Liege and the Vielle Montagne Zinc Works.

THE Carl Oppermann Electric Carriage Company, Limited, is opening a large motor garage at 6 and 7, Halkin Street, Grosvenor Square, W. It will have accommodation for about 200 cars, with every facility for charging the batteries of electrical vehicles.

THE Woolliscroft Motor Company, Limited, has been registered with a capital of £30,000 to carry on the business of manufacturers of and dealers in motors, motor cars, etc. The first directors are Messrs. W. A. Taylor, W. W. Woolliscroft, and F. C. Colliard, and the registered office of the company is at 177-179, Foleshill Road, Coventry.

ABOUT 100 motor-car mechanics held a meeting in New York recently and took initiative steps towards forming a club for social and professional purposes, a committee being appointed to frame rules. Among the objects will be the regulation of trade abuses, the elimination of dishonest mechanics, and the adoption of a system of grading for members.



A Wartburg Car in the Snow on the Summit of "Ther Fueselberg," near Eisenach, Germany.

THE Wearwell Motor Carriage Company, Limited, have issued a new catalogue of the Wearwell motor-bicycle and motette. In addition to particulars of these machines, the list contains a complete description of the engine and some of its parts. It is fully illustrated with diagrams and engravings, and contains some useful hints on driving, lubrication, and other matters of importance to the motor cyclist.

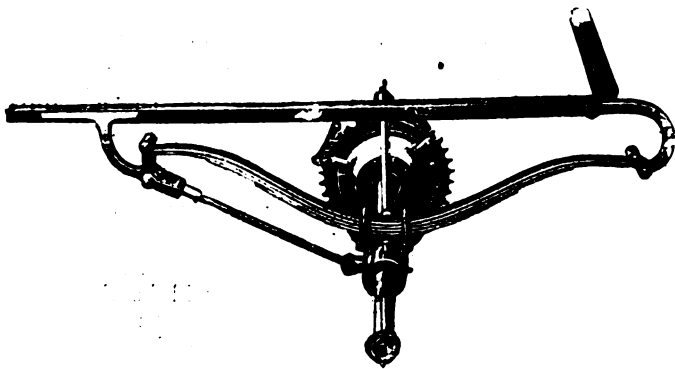
A MOTOR-LAUNCH is being built for the King at Tagg's Yard, East Molesey.

THE White Steam Car Company is about to open a new depot at 35 and 37, King Street, Regent Street, W.

THE Motor Manufacturing Company, Limited, have just issued a complete handbook to the M.M.C. 8-h.p. cars, which should prove indispensable to users of these popular little vehicles.

CALIFORNIA is to have an automobile endurance run of 100 miles from Oakland around the bay, through San Jose to San Francisco. Each stop for any cause will be penalised, and time-keepers every twenty-five miles will regulate the speed to not over twenty miles an hour.

THE accompanying illustration shows the combination spring hanger, radius rod and swing shackle lately introduced by the Brecht Automobile Company of St. Louis, U.S.A., for whom Messrs. Shippey Bros., Limited, are agents in this country. The motor equipment may be fastened anywhere on the angle iron frame in front of the axle, with chains running from the sprocket



on the axle to the transmission gear of the engine. The chain, which frequently becomes slack and runs off the sprockets, by the movement of the vehicle springs is, it is claimed, always kept in proper tension by means of this device. The combination spring hanger and radius rod permits the use of semi-elliptic springs, which allow the vehicle to be hung low, and insuring easy riding and absolute safety. The radius rods are fastened on both sides of the gear and also act as a brace for the axle. The swing shackle in connection with the rod and hanger enables the spring to move freely and easily.

ON Good Friday the Yorkshire Automobile Club starts for Bowness, the arrangement being that all sections meet at Skipton at the point where the Addingham Road branches off, at 11 a.m., the route taken being via Hellifield, Settle, Kirkby Lonsdale and Kendal. Between Kendal and Bowness the road is rather hilly, but the whole route is in fairly good condition. The headquarters at Bowness will be the Crown Hotel and the Bellsfield Hotel.

AT a meeting of the Roads and Bridges Committee of the Holland County Council, held at Spalding recently, it has been reported that the agreement between the Midland and Great Northern Joint Railway, the Holland County Council, and the Sutton Bridge Urban District Council, as to freeing from tolls the bridge over the river Nene at Sutton Bridge, had been approved.

THE report for 1902 of the Continental Caoutchouc and Guttapercha Company (Hanover) states that the prices of raw indiarubber further declined in the course of the past year. Until the last few weeks of the past year the supplies were effected in a regular manner; but towards the end a rapid upward movement set in on the raw indiarubber market, such as has been seldom witnessed before. Within a short space of time the price for fine Para rose from 3s. to 3s. 9d.; in other words, by 25 per cent., whilst medium qualities for various reasons occasionally rose by 60 per cent. All these increased prices are still prevailing, in consequence of which the leading manufacturers contemplate a corresponding increase of sale prices, all the more as there is in all probability a further rise in store.

MR. A. E. PETTIFER, of Bromyard, has opened a motor garage, with inspection pit, large enough to put up a dozen cars. Petrol, motor grease and oils are kept in stock.

THE collector of Customs in Mauritius says there is an opening there for reliable and not too costly motor-carriages with two and four seats, steam driven, and fired by ordinary oil preferred.

WITH reference to the description of the Pognon sparking plug in a recent issue of the *Journal*, Messrs. Isler and Company write us to the effect that this is an infringement of the patent of M. Crouan, the inventor of the space or gap to prevent corrosion, and that they are taking action in connection with the matter.

THE American Motor-car and Vehicle Company, of Fremantle, Western Australia, have under consideration a projected motor-car service from the coast to one of the gold fields 220 miles inland. The present route by rail is 180 miles longer, with a consequently increased cost of haulage, which is at the rate of 7d. per ton per mile, and the value of goods hauled during the year is £800,000. It is estimated that a motor service for heavy goods could be run at the rate of eight miles per hour at a cost of 2d. per mile, provided ordinary paraffin was the fuel used.

A GENERAL meeting of the Aeronautical Institute and Club was held on Friday, the 20th ult., when Dr. Barton announced that the Institute was organising an exhibition of balloons and aerial machines in July next. M. Aug. E. Gaudron read a paper on "Twenty-four Years of Ballooning." M. Gaudron was apprenticed to an aeronaut in Paris, and on his second ascent he had a thrilling experience. The balloon was not sufficiently inflated by the appointed time, but in order not to disappoint the spectators M. Gaudron detached the car from the balloon, which, thus being freed, slowly ascended, with the youthful aeronaut hanging on the ropes. The gas was escaping from the balloon, and before he ascended far M. Gaudron became unconscious. He was found, still unconscious, on a haystack, some distance from Paris. M. Gaudron's paper was followed by an exhibition of lime-light pictures, some beautiful specimens of balloon photography being thrown on the screen.

HEREWITH we illustrate the new pneumatic wheel for motor-cars which Messrs. R. S. Wood and Company have lately put on the market. As will be seen, the idea is to fit a solid rubber tyre into a metal rim, which in its turn bears upon an inflated rubber tube confined by metal flanges bolted to the sides of the ordinary wood felloe. To prevent the rim and tyre, which come



in contact with the road, creeping and wearing, the inner tube bolts are placed through them at certain intervals, the rim carrying the solid rubber tyre being slotted to allow of the necessary up-and-down movement without permitting creeping. The makers, who are prepared to fit the arrangement to any existing wheels, claim that it gives all the advantages of the pneumatic tyre without the drawbacks of the latter in the way of liability to puncture.

The Motor-Car Exhibition at the Agricultural Hall.

(THIRD NOTICE.)

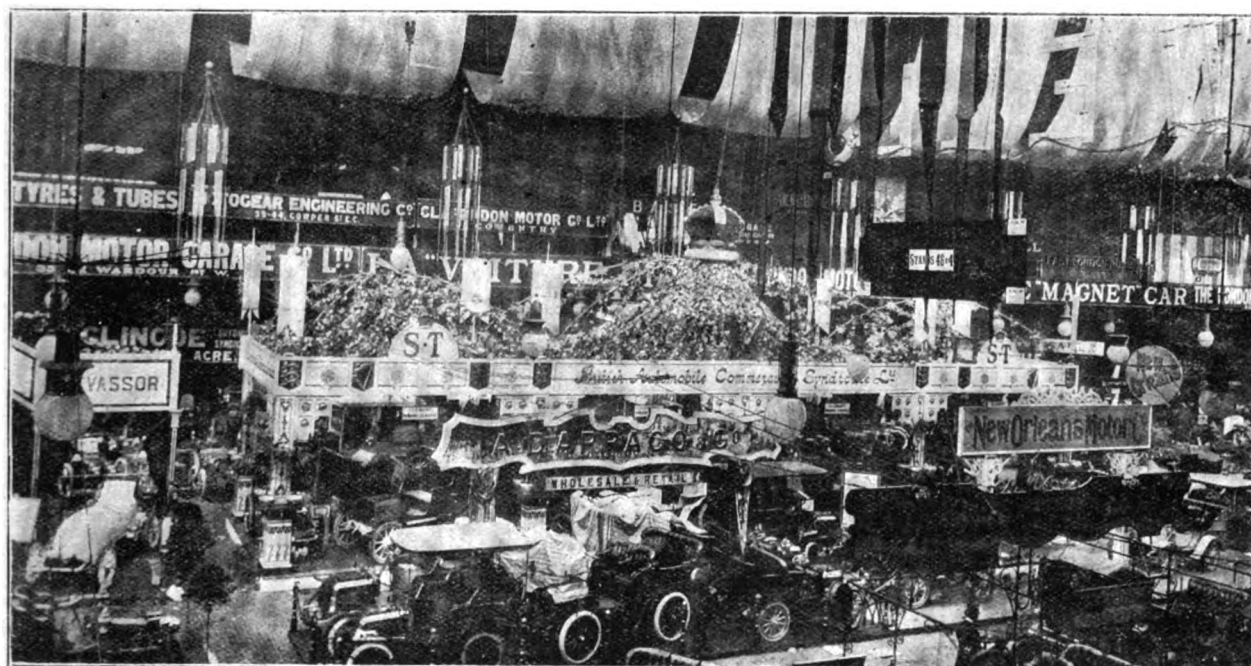


Photo by]

A View of the Large Hall from the Gallery showing the British Automobile Commercial Syndicate's Stand.

[Argent Archer.

NEXT week we shall complete our report of the eighth annual Motor-Car Exhibition at the Agricultural Hall, London, a task which has become increasingly difficult each year, owing to the greater number of firms in the industry, and the corresponding additions to the exhibitors. The work entailed is obviously heavy; in fact, one newspaper went so far as to excuse some peculiar blunders "by the inevitable stress of show time." The issues of the *Journal* for March and April will present a comprehensive view of the automobile industry at the present time.

PETROL CARS.

The Dechamps cars were once more to be seen at the stand of the GRAPHIC MOTOR AND ENGINEERING COMPANY. The general arrangement closely follows what may be termed Panhard lines, the power being conveyed through a clutch, gear-box, and two side chains, four speeds and a reverse, all controlled by one lever, being available. The engine is fitted with automatic governor acting on the inlet. A special feature of the Dechamps cars is to be seen in the band brakes connected with the rear wheels, the band being put in and taken out of contact with the drum by a double-threaded screw actuated by a hand lever. A complete 18-h.p. car was shown, the body work (by Hamshaw, of Leicester) of which was well worthy of inspection; it takes the form of a roomy Lonsdale wagonette to seat five passengers inside. Side by side with this car was a 14-h.p. double phaeton; access to the rear seats is obtained at the sides, instead of having to lift up one half of the front seat, neat steps being fitted for the purpose. The vehicle has a four-cylinder balanced engine (stroke, 115 mm.; diameter, 95 mm.) water-cooled by means of pump and radiators, and three speeds forward and a reverse actuated by the same lever. We may also briefly mention a 9-h.p. double phaeton with two-cylinder engine (stroke, 130 mm.; diameter, 100 mm.). The novelty on the stand was the chassis of the latest type of Dechamps car—a 20-h.p. with wood and steel frame. The engine has four cylinders, cast in pairs, mechanical inlet valves, on the same side, and operated by the same cam shaft as the exhaust valves, governor acting on inlet, honeycomb radiator, etc. Four speeds forward and a reverse are obtained by means of one lever, the power being transmitted from the countershaft by side chains. An improvement is to be noted in the steering pivots of the front wheels, these being supported top and bottom. The engine can be run at a speed of as low as 200 revolutions per minute. Throughout the new vehicle is on up-to-date lines, and appears to comprise many good points, not the least of which is the efficiency of the brakes.

Messrs. RAWLINGS BROTHERS, LIMITED, the London agents, displayed a chassis and several complete 12-h.p. Belsize cars made by Messrs. Marshall and Company. The main features of these double-cylinder cars have

already been dealt with in these columns, but we may mention that the 1903 models are being fitted with an improved irreversible steering gear and a positive clutch; they are driven through bevel gear on to a live axle, a lid being fitted to the case on the latter to enable the gear to be readily inspected. The pump is so arranged as to be quickly detached when necessary. Other features that we noticed which, while small in themselves, are useful "refinements," are a small bracket on the motor on which to rest the sparking plug for testing purposes, and the hinging of the steering wheel at the upper end of the column, so that it may be tilted up, and so give freer access to the driver's seat. The motor, which develops 16-b.h.p., is of the vertical two-cylinder type, the cylinders being 4 in. diameter by 4½ in. stroke. The cylinder and head are cast in one piece, an extra large water space round the cylinders and the valves being provided. The governor, which acts on the throttle, is enclosed in a dust-proof case practically forming part of the crank chamber. A filter is placed between the pump and water supply. This can be removed for cleaning by undoing a thumb screw, a tap on each side of the pump being provided to cut off the water while this is being done. Three speeds forward and one reverse are provided, controlled by one lever. Both the top and bottom shaft are easily removable, and each gear wheel can be replaced independently of the others. Altogether the car strikes us favourably, particularly on account of the care paid to the little details.

The NEW AUTOMOBILE COMPANY had an interesting array of the latest types of Rochet petrol cars. First we may mention the new 6½-h.p. light car, of which an illustrated description was given in a recent issue. The change-speed gear on these vehicles is exceedingly ingenious, three speeds and a reverse controlled by one lever being available, the power of the engine being transmitted direct on the high gear. Another car on the stand was the 16-h.p. vehicle, which is fitted with a most comfortable body. The power is supplied by a four-cylinder engine, governed on the inlet, and fitted with Grouvelle and Arquembourg "cloissonée" radiator. Four speeds and a reverse motion are provided, the gear-box being connected to the rear road wheels through a differential countershaft and side chains. Probably the most interesting car on the stand was the new 9-h.p. Rochet, fitted with a two-cylinder engine, governed on the inlet, new style radiator, and a change-speed gear giving a direct drive on the third speed, the power being transmitted by a cardan shaft and bevel gear to a live axle. On this stand were also shown an 11-h.p. Limousine and an 11-h.p. Roi des Belges tonneau with two-cylinder motor and the special Rochet change-speed gear described in the *Journal* about two years ago.

The exhibit of the MAIL MOTOR COMPANY comprised a four-seated landaulette fitted with a 12-h.p. two-cylinder vertical motor, with governor acting on the exhaust valves. Except for the engine being located under

the front seat the vehicle is built on the standard lines, the power being transmitted to the rear live axle through a longitudinal shaft and bevel gear, three speeds forward and one reverse being available.

Georges Richard and Mercedes cars again formed the exhibit of Messrs. MANN AND OVEBTON'S, LIMITED, who occupied two large stands. Of the former type of cars examples of the 10-h.p., 12-h.p., and 24-h.p. vehicles were shown. To deal first with the 10-h.p. two-cylinder car; the cylinders are 100 mm. diameter by 100 mm. stroke, the normal speed being

bearings are lubricated by means of rings running in an oil bath. Semi-irreversible steering, with tangent screw of the re-enforced Panhard type, with ball thrust bearing, is employed. The 24-h.p. car is on similar lines throughout, except that the engine comprises four cylinders, and that the wheel base and track are longer, these being respectively 7 ft. 5 in. and 4 ft. 3 in. Altogether the Georges Richard cars have been brought well up to date, and should continue to be a popular type in this country as well as in France. One of the handsome cars of the Show was to be seen

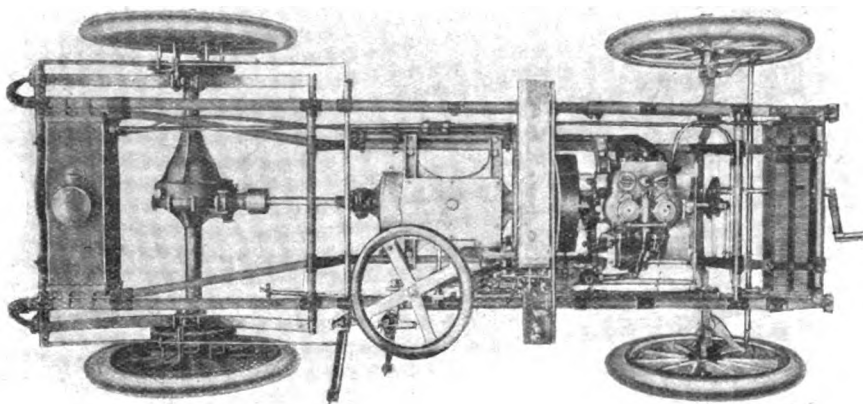


Fig. 43.—Plan of Chassis of Georges Richard 12-h.p. Car.

1,000 revolutions per minute. The cylinders are cast in one piece bolted to an aluminium crank chamber. The governor is of a special circular type, cased in, so as to be entirely dustproof, and acting on a throttle valve on the inlet. The gear box is made of aluminium, bolted on to the under-frame of the car. It is provided with three speeds forward and a reverse, the drive on the top speed being direct. The live axle carries the differential and bevel pinion, to which the drive is taken by means of a cardan shaft from the gear box. The reverse is operated by means of a separate lever, and is so arranged that when the reverse motion is in no forward gear can be put in, and *vice versa*. A foot-operated metal to metal brake acts on a wide drum at the back of the gear box, while a hand lever controls brakes on drums fitted to the rear wheels, all being double acting. The 12-h.p. car (Fig. 43) has a double-cylinder engine, Fig. 44 (104 mm. by 100 mm.), governed on the throttle in a similar manner to the 10-h.p. The Brasier system of magneto ignition is employed, arrangements being provided for

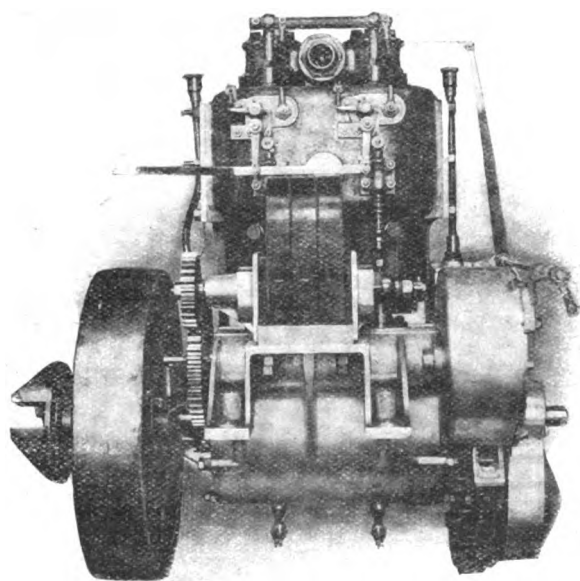


Fig. 44.—The Georges-Richard 12-h.p. Motor—Inlet Side.

the ignition to be retarded or advanced as desired. The water is circulated by a gear-driven pump through the latest type of Loyal radiator. The transmission is by bevel gear on to a live axle, and is the same as in the 10-h.p. car, with the exception that there are four speeds forward instead of three, and a sliding universal joint without bolts. The universal joint between the clutch and the gear box works both ways, thus obviating any wear in the bushes of the engine and gear box. The engine is lubricated by means of an automatic lubricator on the dashboard; the live axle

at this stand, viz., a 20-h.p. Mercedes-Simplex. The details of this well-known type need no description at this time, but we mention that the car exhibited was fitted with a comfortable tonneau body, painted in the usual Cannstatt red colour. Reference may also be made to a large framed sheet of drawings of the new 50-h.p. racer on the construction of which the Hotchkiss Company, the well-known French gun builders, are at present engaged.

Well-finished examples of the 10-h.p. and 16-h.p. Ariel cars, both fitted with tonneau bodies, were shown on the stand of the ARIEL MOTOR COMPANY, LIMITED. The vehicles have undergone considerable improvement for 1903; both the 10-h.p. and the 16-h.p. models are fitted with four forward speeds and a reverse, the wheel base has been increased, and the road wheels are all of equal size. The frame is built up of steel tubing, stiffened by an underframe, to which the engine is bolted. The 10-h.p. motor has two cylinders, 3 $\frac{1}{8}$ in. bore, 4 in. stroke, cast in one piece with combustion chamber and water jacket complete. The crank-shaft is built up with two fly-wheels, which are inside the crank case. The engine is of the high-speed type, developing 10-h.p. at 1,700 revolutions per minute. The 16-h.p. engine has four cylinders, 3 $\frac{1}{8}$ in. diameter, by 4 $\frac{1}{2}$ in.

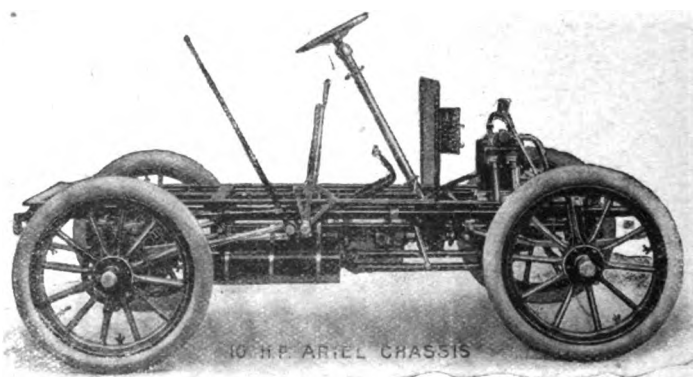


Fig. 45.—Chassis of Ariel 10-h.p. Car.

stroke. A point worthy of mention is that the exhaust pipes are of flexible, metallic tubing. A small additional air inlet is fitted on the inlet pipe which automatically comes into operation as the admission of gas is throttled by the governor. The latest type of radiator is fitted in front below the frame. The ignition is electrical, and on the 16-h.p. chassis we noticed that the new external jump sparking had been ingeniously fitted. From the engine the power is transmitted to a friction clutch and gear-box, and thence, by means of bevel gear and cardan shaft to the rear live axle. A double-acting, metal-to-metal band brake is fitted to the secondary shaft outside the gear-box, and actuated by foot lever, which, when applied, immediately releases the clutch. Double-acting band brakes are also fitted to each of the rear wheels, actuated by a hand lever. Altogether the exhibit of the Ariel Company was one deserving close attention.

The DELAHAYE CHIEF DEPOT are now introducing the Delahaye cars into this country, and at the Exhibition displayed two well-finished specimens of the 24-h.p. cars, outline elevations and plans of which were reproduced in our issue of the 20th December last in connection with the report of the Paris Salon. Although the latest models have vertical engines, the Delahaye Company have not given up horizontal engines altogether, or they are still fitting them to the larger types of cars, such as omnibuses

this country. The motor is of 5-h.p., the mixture being supplied through an automatic induction valve. The transmission gear is operated by a lever placed to the right of the driver, the drive being conveyed from the countershaft to the live back axle by a chain. Electric ignition is fitted, and there are two speeds forward and one reverse. There are two brakes actuated by foot levers, one being applied by a clutch band to a flange attached to the driving sprocket, and the other being an emergency brake

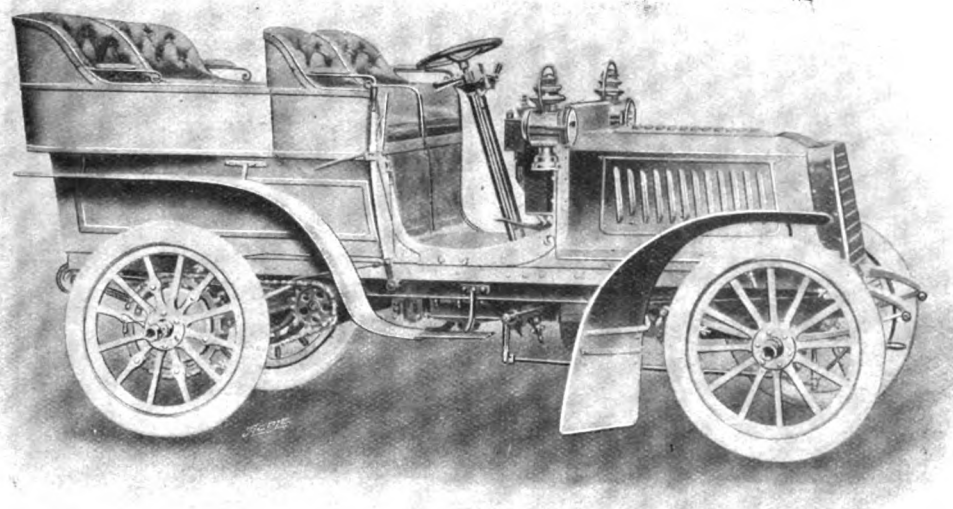


Fig. 46.—The Delahaye 24-h.p. Car.

and delivery vans. The 12-h.p. motor comprises two separate cylinders and the 24-h.p. four. Each cylinder with its valve chambers are cast in one piece, and the head is formed of a plate which is removable to expose the pistons. The cylinder is water-jacketed down to about two-thirds of its length, and below this the air circulates around the motor, to be warmed before entering the carburettor. The cranks are set at 180 deg., and the engine is further balanced by dividing the weight of the flywheel on each end of the crankshaft. The cylinder diameter is 100 mm. and the stroke 140 mm., the normal speed being 950 revolutions per minute. A noticeable feature of the vehicles is the independence of the motor, change-speed gear box (which gives four forward speeds and one reverse), and differential,

acting directly on the rear axle. The capacity of the petrol tank is five gallons, and the maximum speed is given at 25 miles per hour. Although shown without mudguards, these can be fitted if desired. On this stand the Lipscomb car was also shown, the main features of which have already been familiarised to motorists in our columns.

Two well-finished specimens of the Brown car were shown by Messrs. BROWN BROS., Limited. Except that one has a differential countershaft connected by side chains to the rear wheels, while the drive in the other is by cardan shaft to a live axle, the two cars are identical in construction. The now generally-adopted lines are followed, a two-cylinder motor developing 8-h.p. being located in the front part of the frame, the water circulation

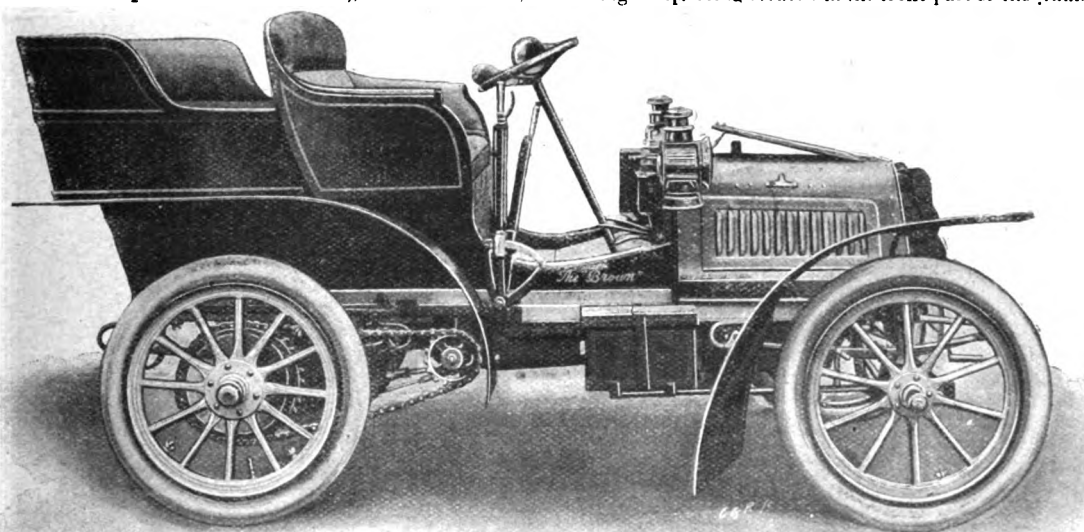


Fig. 47.—The "Brown" 8-h.p. Chain-Driven Car.

each of which may be removed without interfering with the other. The countershaft carrying the differential is solidly bolted to the sides of the frame, and is connected with the rear road wheels by chains. The workmanship throughout is worthy of the old-established Delahaye firm, whose present output at their Paris works is thirty cars per month.

The English Motor Company showed the Oilmobile two-seated vehicle, similar to the car of somewhat kindred name which is already familiar in

is maintained by pump and radiators. Three speeds forward and a reverse are provided, the change speed gear being of the sliding type, controlled by one lever. The road wheels are of equal size, 32 in. diameter in the case of the chain-driven car, and 28 in. in the gear-driven vehicle. The cars complete weigh about 12 cwt., and appear to be of sound construction.

Two attractive stands were occupied by Mr. E. W. HART, one in the Large Hall and one in the Gallery. Among the petrol cars shown were a

9-h.p. Renault, one of the latest types of 10-h.p. two-cylinder Renault cars, and a 20-h.p. Flying Darracq, with a racing body. A 40-h.p. Panhard of the Paris-Berlin type, with a "Roi des Belges" body, attracted much attention, its white enamelled body, with red upholstery, giving it a charming appearance. Several Mercedes cars were staged, including the 16 and 28-h.p. types, both fitted with tonneau bodies. Altogether Mr. Hart's display was thoroughly up-to-date, and well representative of the latest phases of motor-car design.

The BEAUFORT MOTOR COMPANY had a big display of the Beaufort cars, ranging from 8-h.p. to 20-h.p., the latter being well up to date, it being described as the 1904 model. The first car we examined was the new 10-h.p. Beaufort, of which a chassis was shown (Fig. 48). This has a channel steel frame, in the fore part of which is set a two-cylinder vertical engine. The valves are all mechanically operated, the inlet valves being located on one side of the motor and the exhaust on the other. The governor, which is entirely enclosed and runs in oil, is adapted to act on the admission of gas; the throttle valve being controllable from the steering column by a lever, which also acts as an accelerator. With the lever right back the throttle valve is closed; in the central position the engine is working normally, while when the lever is pushed forward the governor is thrown out of action. The ignition is by magneto machine, which is driven by spur wheels instead of a chain, so coupled up that it cannot be set incorrectly. The pump is also gear-driven. A special feature of the carburettor is the provision of a petrol filter which prevents any dust or water passing

Martin de Plazanet and Co., of Paris. This has four separate cylinders, a noticeable feature being the fitting of compression release cocks to the inlet valves. On this stand was also shown a 8-h.p. Gillet-Forest delivery van, intended to carry a load of 15 cwt. This vehicle was illustrated in these columns a few months ago.

Quite a new car to this country is the "Martini," which is being introduced by Mr. MORGAN DONNE. The vehicle, which is of Swiss construction, is provided with a motor developing 17-h.p. at a speed of 1,000 revolutions per minute. The four cylinders are cast in pairs, the dimensions being 100mm. bore by 130mm. stroke. The inlet valves are mechanically operated, and located on the opposite side to the exhaust valves. Magneto ignition is adopted, the sparkers being so arranged that they can be removed very quickly. A honeycomb tank and cooler with fan is used in connection with the water circulation, while the governor is adapted to act on a throttle on the inlet pipe. Four speeds forward and a reverse are provided, the power being transmitted through a friction clutch and gearbox to the differential shaft, and thence by side chains to the rear road wheels. Although the arrangement follows the usual lines, there are a number of novel features about the car. Thus, the clutch spring can be adjusted from the rear, and either half of the differential shaft may be quickly withdrawn and the rear wheels can be instantly detached without in any way interfering with the brakes. The axles and differential shaft run on ball bearings; the pedal brake is water-cooled, while the lubrication is automatically performed. The chassis weighs about 12 cwt.

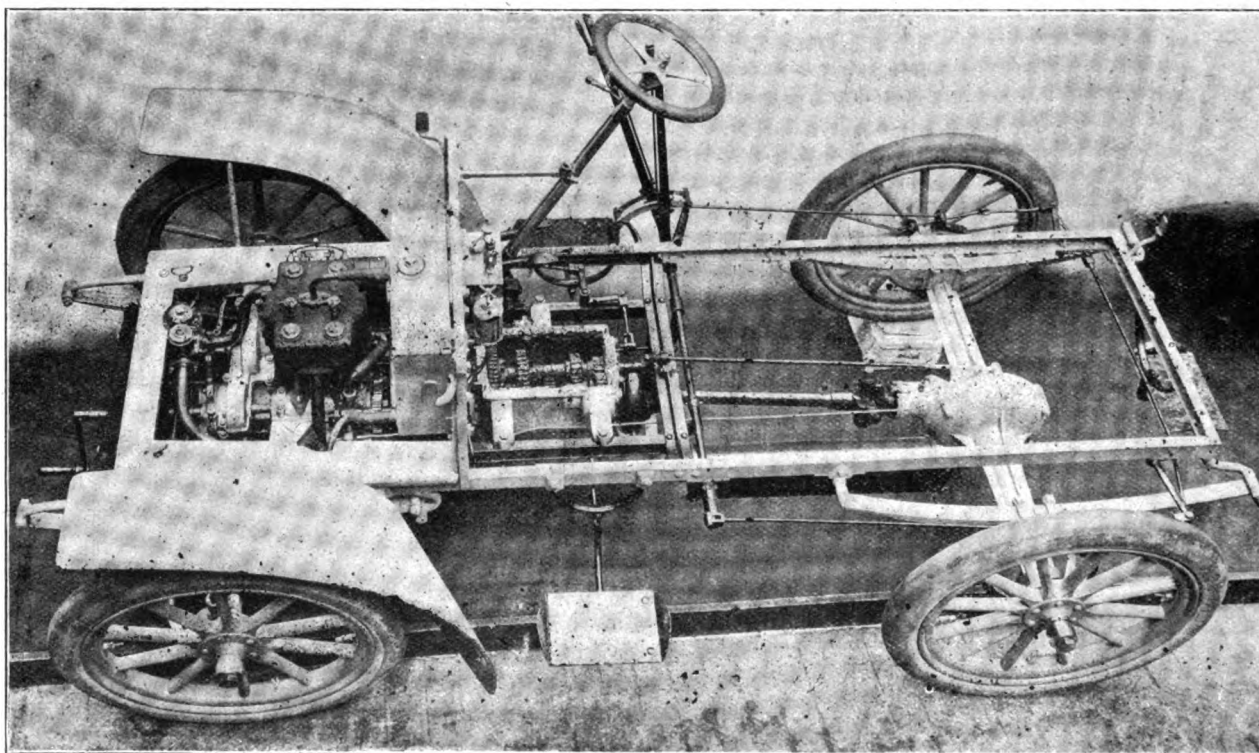


Fig. 48.—Chassis of Beaufort 10-h.p. Car.

into the spraying chamber. Three speeds and a reverse are provided; the power is transmitted by clutch, gear box and cardan shaft to a live axle, the latter being entirely enclosed and running on ball bearings. The lubrication of all the bearings is controlled from the dashboard. The 14-h.p. Beaufort car is on similar lines to the 10-h.p. vehicle, the engine being larger and the various parts correspondingly strengthened. We now pass to the 20-h.p. car, which has a four-cylinder engine, cast in pairs, mechanical inlet valves, and enclosed governor. Two systems of ignition are provided—magneto and the ordinary high-tension by accumulators and coil. It is claimed that by means of the latter the engine may be started from the driver's seat by simply switching on the current. Four speeds and a reverse are controlled by one lever on the steering column, the change speed gear being so arranged that any desired speed is obtained direct without going through any other speed. The drive on the top speed is direct. This car, which is chain driven, is provided with a special form of tubular radiator. Still another new 1904-model car was to be seen in the two-seated vehicle, with 9-h.p. single-cylinder motor, mechanical inlet valve, two speeds and reverse. The Beaufort cars appear to comprise a number of useful features, the merits of which are being quickly recognised.

The exhibit of the BUCKINGHAM PALACE GARAGE COMPANY comprised a 20-h.p. "Monarque" petrol motor; this has four cylinders cast in pairs, with ordinary suction valves. A governor is provided, acting on the inlet. Another new petrol motor was to be seen in one of 10-h.p. made by Messrs.

Altogether the "Martini" car strikes us most favourably, and it should soon become a popular type in this country.

The principal features of the Gobron motor-cars—the two-cylinder, four-piston, balanced motor and the mechanical carburettor—have already been described in the *Journal*. The GOBRON MOTOR COMPANY, which is now handling these cars in this country, exhibited a 20-h.p. chassis and a complete double phaeton, and a tonneau of the same power. The frame is of tubular construction, and in the latest productions the motor is located under a bonnet at the front. In each of the two cylinders the combustion chamber is located between two pistons which work in opposite directions to each other. The upward pair of pistons are connected to a crosshead linked by side rods to the crank shaft; the lower pistons are connected in the usual way by means of the usual connecting rod. The ordinary form of carburettor is dispensed with, a special injector device being used. The timing of the ignition is controlled from the steering wheel, and is so arranged that the quality of the mixture can simultaneously be regulated. The governor is adapted to act on the mechanical carburettor, temporarily shutting off the petrol supply, should the speed become too great. Four speeds and a reverse are available, the change speed gear being of the sliding type, and the differential shaft connected with the rear wheels by side chains. The Gobron cars are well known for their quiet, vibrationless running, while another noticeable feature is the fact that the carburettor will work equally well with petrol or alcohol or a mixture of both.

A new firm in the trade is the LANCASTER MOTOR GARAGE, who had an imposing display in the Gallery, where was shown one of the most attractive little two-seated vehicles in the Exhibition. This is the "Baby Mass," of which an illustration is given in Fig. 49. In general arrangement it follows the standard lines, being fitted with a $4\frac{1}{2}$ -h.p. Aster motor, water-cooled on the thermo-syphon system. Three speeds forward and a reverse are provided, the power being transmitted by a universal shaft and

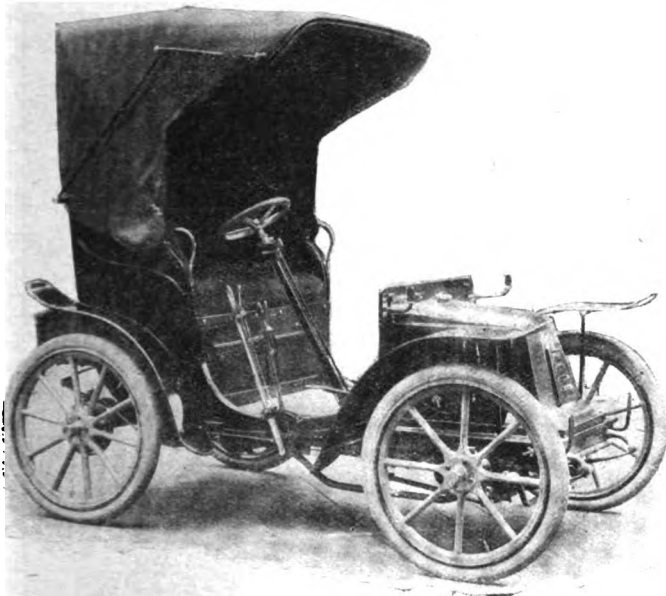


Fig. 49.—The "Baby Mass," $4\frac{1}{2}$ -h.p. Voiturette.

bevel gear to the rear live axle. The car is built low, and in view of its price we expect to see a good many in use in the near future. The "Mass" 6-h.p. car, with detachable tonneau, while on standard lines, appears to be of sound construction. The motive power is supplied by a 6-h.p. De Dion engine, with both pump and gravity water circulation. Three speeds forward and a reverse motion are controlled by a single lever, a cardan shaft connecting the gear-box with the live axle. The 12-h.p. "Mass" car has an Aster two-cylinder governed engine, with four speeds ahead and one reverse, direct drive on the top speed, live axle, etc. On the same stand were shown three 10-h.p. Panhard cars of the latest type, one fitted with a luxurious Limousine body, and the other with a Roi des Belges tonneau reflecting much credit on their builders, Messrs. Lamplough, of Paris.

The RIDLEY AUTOCAR COMPANY, LIMITED, are devoting their attention to the production of popular-priced cars, their exhibit being confined to a $3\frac{1}{2}$ -h.p. voiturette and one with $4\frac{1}{2}$ -h.p. engine (Fig. 50.) The feature of these vehicles is found in the transmission, for the details of which we refer readers to the drawings given in our issue of January 11th, 1902. The frame is of tubular construction, in the fore part of which is a single-cylinder

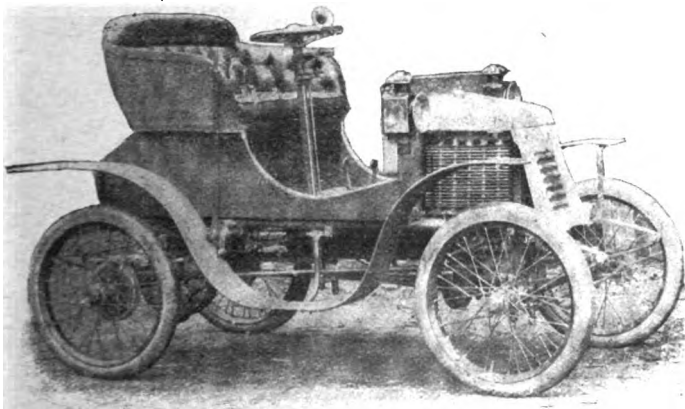


Fig. 50. The Ridley Voiturette.

motor, with water circulation on the thermo-syphon system, no pump being used. Two speeds are provided, the power of the engine being conveyed through a universally-jointed longitudinal shaft and skew bevel gearing to the rear axle. The change-speed gear is combined with the bevel gear drive. There is no balance or differential gear in the ordinary sense of the word, the rear road wheels being fitted to the single piece axle by free-wheel clutches, so that the outer wheel can overrun when turning corners. The longitudinal shaft does not terminate at the bevel pinion,

but is extended, and passes over the main axle, thus avoiding the necessity for cutting either of them. As the pinions and wheels are in different planes, the teeth of the latter have to be cut on the skew to gear properly. The pinions are always in mesh with their respective wheels, but are only fixed to the shaft one at a time by means of a sliding clutch, the parts of which are coupled so that the engagement of one pinion is preceded by the disengagement of the other. The whole arrangement is enclosed in an oil-tight casing, provided with ball bearings for the shaft and axle. It will be seen that the gear not only acts to transmit the power to the rear axle, but as a change-speed gear, without taking up any more space in the gear box. The car is provided with compensating brakes on drums the rear hubs, tyre brakes being also fitted for emergency purposes.

Every time we visited the stand of the MOTOR CAR COMPANY, LIMITED, we found it the centre of a circle of interested visitors, the object of their attention being the chassis of the latest type of 16-h.p. Decauville car, and it must be said at once that half an hour spent on the details of this vehicle could not prove other than instructive. As will be seen from Fig. 51, it possesses the feature of a steel shield preventing mud and dust approaching anywhere near the vital parts of the mechanism. Use has been made of this shield in supporting the motor and gear box from the frame of pressed sheet steel. The engine is four-cylindrical, each pair of cylinders having its own crank case. The water jackets are divided verti-

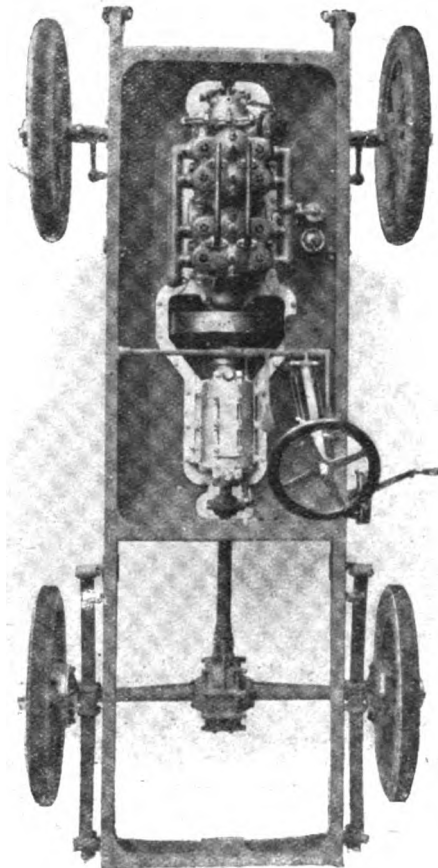


Fig. 51.—Chassis of Decauville 16-h.p. Car.

cally, so that it is impossible for the water to escape without first travelling entirely round the cylinders. The fly-wheel is supported both upon the engine and the gear-case sides, thus relieving the former of too heavy a strain. The engine is governed on the admission, and this is supplemented by a throttle, controlled from the steering post, by which the speed of the engine can be still further reduced. An accelerator pedal is also provided; the normal speed is 900 revolutions per minute. The inlet valves are mechanically operated, and located on the opposite side of the engine to the exhaust valves. With regard to the ignition, this is on the accumulator and coil system; the main wires to the commutator are very short, terminating in electrodes attached to a fixed insulating plate, over which the electrodes have sufficient movement for timing purposes without the wires being moved. A dynamo is attached to the dashboard and is driven by a band from the engine shaft. By this means, whilst the car is running, the batteries are constantly being charged. The spring of the friction clutch, which is of the internal variety, is fixed on an extended boss of the fly-wheel, the opposite end of the spring engaging with a tail from a ball race. The engaging portion of the clutch, forming part of the fly-wheel, is detachable in two halves. The change-speed gear is of the sliding pinion type, giving three forward speeds and a reverse, all operated by one lever. The drive to the rear axle is by means of bevel gear and a shaft with universal joints. The latter are of a special

enclosed type, running in oil. A large inspection cover is fitted to the gear box, an arrangement which greatly facilitates any necessary examination of the gearing. The rear axle is of such design that all the weight supported by the rear springs comes on the axle sleeves and none on the shafts which transmit the power from the differential gear to the road wheels. These shafts fasten into the side gears of the differential by means

joint being perpetually immersed in grease. The carriage itself is most comfortably suspended, a transverse spring in connection with the two elliptics being used. The tonneau is very roomy, whilst seats of the bucket type are employed for the front.

Among the new cars which made their appearance at the Show were the "Hurst," of which both a 12-h.p. and a 24-h.p. were shown. They are

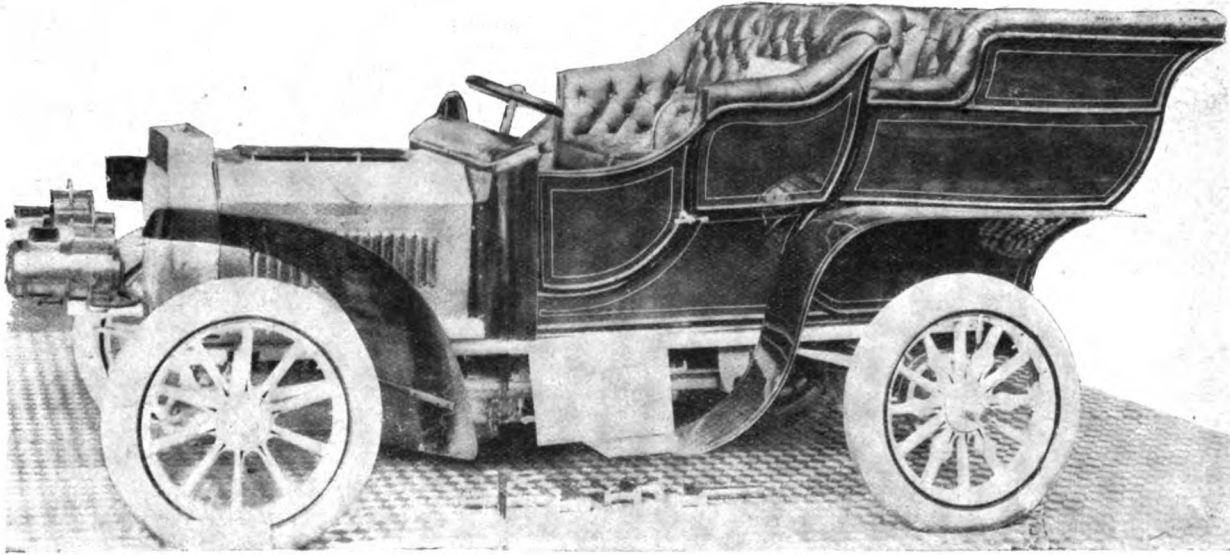


Fig. 52.—The "Hurst," 24-h.p. Car.

of squared end portions and to the hubs of the wheels by means of a claw clutch at the outer end of the hubs. When the caps are taken off from the hubs the shafts may be withdrawn by means of any small tool, such as a screwdriver. The car is well equipped in the matter of brakes. The hand-applied brake tightens bands upon steel drums fixed to the rear wheel hubs, and that operated by the driver's foot expands a series of bronze blocks acting upon the inside of the same drums. All bearings are mechanically oiled by dynamo ring lubricators. The method by which the engine is secured to the frame is novel. The whole block constituted by the motor and gear is securely bolted to a sheet of steel, referred to

the production of Mr. G. HURST, and were well worthy of close inspection. The following description, which relates to the 24-h.p. car, may be taken, however, as applying to both, the 12-h.p. vehicle (except that it has only a two-cylinder engine) being constructed on similar lines. The main frame is constructed of wood and steel, the engine and gear being supported on an underframe of angle steel. The 24-h.p. engine comprises four cylinders, $4\frac{1}{2}$ in. diameter by 5 in. stroke, the speed ranging from, it is claimed, as low as 100 up to 1,000 revolutions per minute. The inlet and exhaust valves are extremely accessible and may be inspected by the removal of two nuts. The governor which acts on the inlet is of the usual centrifugal

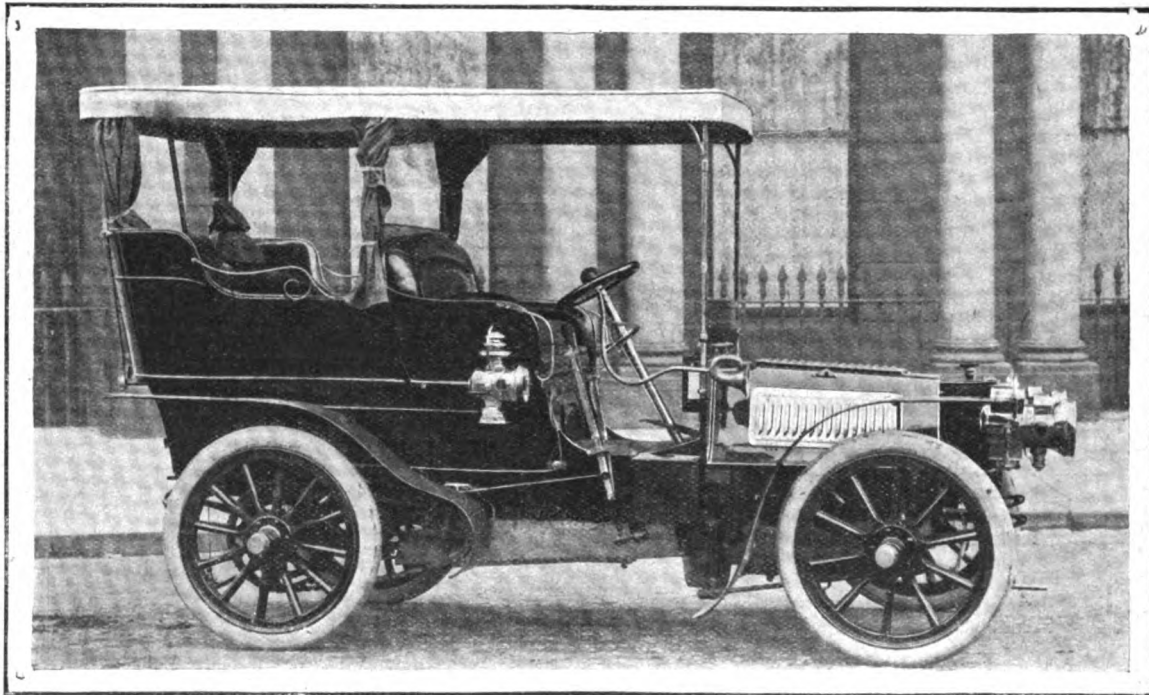


Fig. 53.—The M.M.C. 20-h.p. Car with Canopy. (See page 121.)

above, this in turn being firmly attached to the framework of the vehicle. On the same stand was shown a 20-h.p. and a 10-h.p. Decauville car. The 20-h.p. vehicle is provided with two engines of the 10-h.p. type coupled together on a common crank chamber. A fortified back axle, similar to that in the 16-h.p. car, is used. Automatic lubrication is provided throughout, the cardan joint being protected by a special cover which insures the

type, and can be thrown out of action by a small lever on the steering column. The water-cooler is of the multitubular type, with fan. The change-gear is enclosed in an oil-tight case, and contains the usual double train of wheels and a positive clutch giving a direct drive on the top speed. The change-speed gear is controlled by a lever situated on the right hand side of the driver, and gives a range of three speeds forward and a reverse

From the gear box the power is transmitted by a longitudinal cardan shaft and bevel gearing to the rear live axle. A double-acting, foot-controlled, metal to metal brake is provided on the bevel pinion shaft, while a hand lever controls band brakes acting on large drums fastened to the hubs of the rear road wheels. The vehicles have a striking appearance, and, judging from a brief inspection, the various details appear to have been carefully worked out.

A big display of M.M.C. cars was made by the MOTOR MANUFACTURING COMPANY, LIMITED, ranging from the popular 8-h.p. voiturette to a powerful 20-h.p. car. The former has three speeds forward and reverse, and has

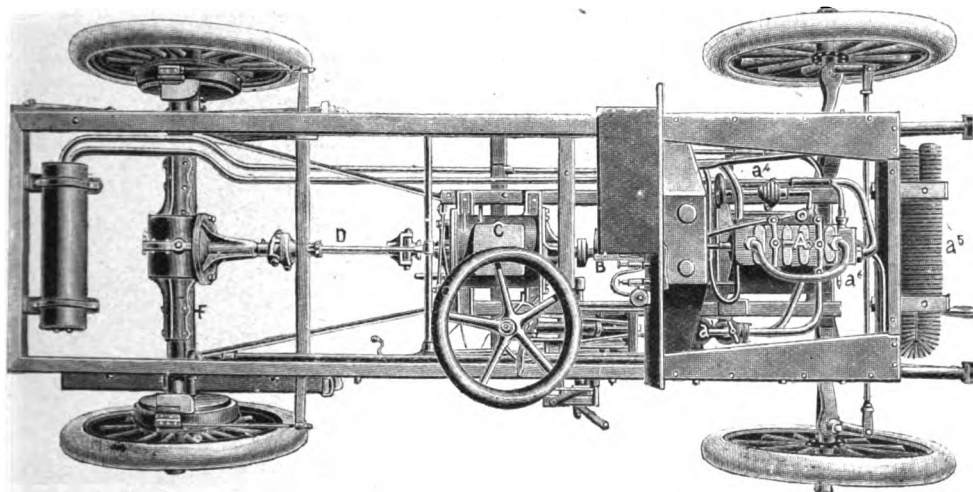


Fig. 54.—Chassis of Chenard-Walcker 14-h.p. Car.

recently been improved as regards the steering, which is now of the irreversible type. The gear is very easily changed, the pairs of gears being always in mesh. The M.M.C. 10-h.p. two-cylinder car is now fitted with a new closed end motor, a patent governing device acting on the induction pipe. In connection with the latter it may be mentioned that when the throttle valve is closed, shutting off the supply of mixture, an auxiliary air-valve is opened, thus allowing cold air to be drawn in to assist in keeping the valve chambers and cylinder cool. The vehicle has three forward speeds, the gears being always in mesh, controlled by one lever. The design and finish of the carriage body and upholstery is well up to the M.M.C. standard. The largest car on the stand was a 20-h.p. vehicle (Fig. 53), with the latest type of closed-end motor, governed on the induction. It has a foot accelerator, which cuts the governor right out; three speeds and reverse; water-cooled brake; and mechanically-operated lubricator for the engine. The *piece de resistance* on the stand was the chassis of the latest type of 20-h.p. M.M.C., which is a fine piece of work. The engine has four separate cylinders, the inlet and exhaust valves of each being held in position by an arched piece and a single nut. A honeycomb radiator has been adopted, the holes in this being corrugated, thus increasing the cooling surface. Another new departure is the adoption of the Eisemann system of high tension magneto ignition. In other respects the details are the same as in the 20-h.p. car referred to above.

The WESTON MOTOR SYNDICATE again made the Chenard-Walcker cars a prominent feature of their stand, examples of the 10-h.p. and 14-h.p. types being displayed, the former having the Panhard type of gear and chain transmission, and the latter the Chenard-Walcker patent driving gear. In both cases the motors have mechanically-operated inlet valves, located on the opposite side to the exhaust valves, with a special form of governing device acting directly on the inlet valves by means of specially-formed cams. The valves are always given a full lift, but the time they are kept open to the full is varied by the automatic governor or by a hand "accelerator," the control being further aided by means of a "moderator" pedal which is now being fitted. The cam shaft carries a sleeve with suitably formed cams thereon; these lifting the induction valves in the same manner as the exhaust valves are lifted, with the difference that the cams are made with a lifting surface varying from a line to the maximum in width. As the cam sleeve is moved laterally on its solid shaft by the governor in exact relation to the speed of the engine, the induction valves, while always being opened to the full extent of their lift, are by the variable width of the lifting surface held open for the inlet of gas a longer or shorter time, in proportion to the required speed of the engine. The variation of the feed, and consequently the speed and power, of the engine, thus depend entirely upon the length of time the valves are left fully open, and not upon their being opened more or less. By this means a great elasticity of power resembling that of steam is obtained, and permits the engine to be run at speeds ranging from 50 to 1,200 revolutions per minute. The ignition also deserves special notice, since it is

obtained by a single contact for both cylinders. A spark is formed in both cylinders simultaneously, one firing a charge, the other being a useless one except in so far as it dispenses with tremblers, a double coil, and facilitates the synchronising of the sparking. The inlet and exhaust valves (which are interchangeable) are easy of access, and can be taken out by removing a single nut. The 10-h.p. engine has cylinders $3\frac{1}{2}$ in. diameter by $5\frac{1}{4}$ in., the dimensions in the case of the 14-h.p. motor being 4 in. by $5\frac{1}{4}$ in. Both cars are fitted with a novel combination friction clutch and brake (Fig. 56); the lever in connection with the right-hand pedal, when fully depressed, not only withdrawing the clutch, but putting on a powerful brake. The clutch is of the cone variety, and owing to the lateral thrust of the spring being balanced, no special device for compensating end thrust is necessary. The tension of this spring is adjusted by means of a single nut. Referring to Fig. 56, it will be seen that the female portion of the clutch C is mounted on and rotated by segmental studs B on the flywheel A, and is made with a boss C' running loosely on the clutchshaft E. Upon the pedal G being depressed, the male portion of the clutch D is withdrawn from contact with C against the compression of the spring surrounding the shaft E. This disengages the engine from the driving gear. A further depression of the pedal G causes the rearward coned portion of the male clutch D to be brought into contact with the coned braking ring D', which is rigidly affixed to the frame. A separate pedal is fitted by which the clutch is merely disengaged and engaged without applying the brake. The segmental studs B on the flywheel are only intended to engage the corresponding recesses in the hollow cone C in order to rotate the latter. As already mentioned, the 10-h.p. car is fitted with three speeds and reverse, with chain transmission. The change gear and differential gear box is suspended from the

frame by three pivoted hangers, which preclude any torsion of the frame due to inequalities of the road surface. The 14-h.p. car has four forward speeds and a reverse, with a direct transmission on novel lines (Fig. 55). The propeller shaft is fitted with universal joint at either end, the rear universal joint having also a sliding action to allow for deflection. It will be seen that there are two distinct axles, the lower of which is fixed and carries the weight of the chassis, whilst the upper, placed directly above it, is the driving shaft, rotated by bevel gearing and propeller shaft. The driving wheels rotate on the lower axle, and are fitted with heavy gunmetal rings with internally-cut spur gears, driven by pinions on the driving ends of the shaft. The principal claim made for this construction is that it eliminates the disadvantages of live axles divided in the centre (by the differential) where the strains are most accentuated. There can be no question that a good deal of careful thought has been expended on the design of these cars, not only to render them silent in operation, but also economical in running. The very low fuel consumption in the trials in France last year was received with much incredulity, but all doubt has been removed by the repetition of the performance in the *Concours de Consommation*, held a month or so ago.

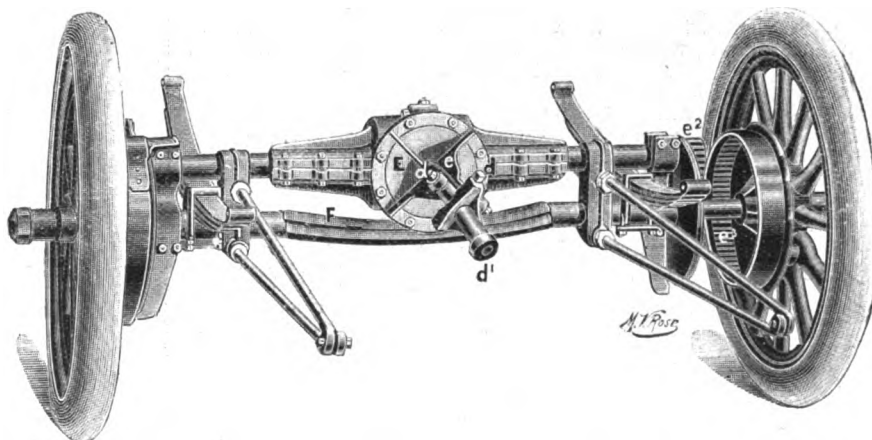


Fig. 55.—The Rear Axles and Driving Gear of the Chenard-Walcker 14-h.p. Car.

The Salsbury light car was shown by Mr. H. P. SALSBUURY. This is fitted with a 6-h.p. De Dion or Aster engine, as desired, the gearing being of the Panhard type with three speeds and reverse. The frame is strongly built of channel steel and the engine suspended direct by means of bolts. There is seating accommodation for three passengers, a bucket seat being provided at the rear. If desired, a tonneau body can be fitted. With its long wheel base the car attracted attention among the many vehicles shown for men of moderate means.

An attractive two-seated car was shown by the CLARENDON MOTOR-CAR AND BICYCLE COMPANY. This is on the lines of the one illustrated in our issue of August 30th last. It is driven by a 7-h.p. single-cylinder water-cooled engine driving through clutch, and a gear box giving three forward speeds and a reverse, and thence by car shaft and bevel gear to the live axle. An interesting exhibit on this stand was a 65-h.p. engine (Rowbotham's patent). It is claimed that the motor is free from vibration, and requires no water tank or jacket. The principle upon which it works is somewhat similar to that of the Diesel engine, inasmuch as it uses heavy oils instead of the lighter spirits. Air enters the working cylinders under compression, which is further in-

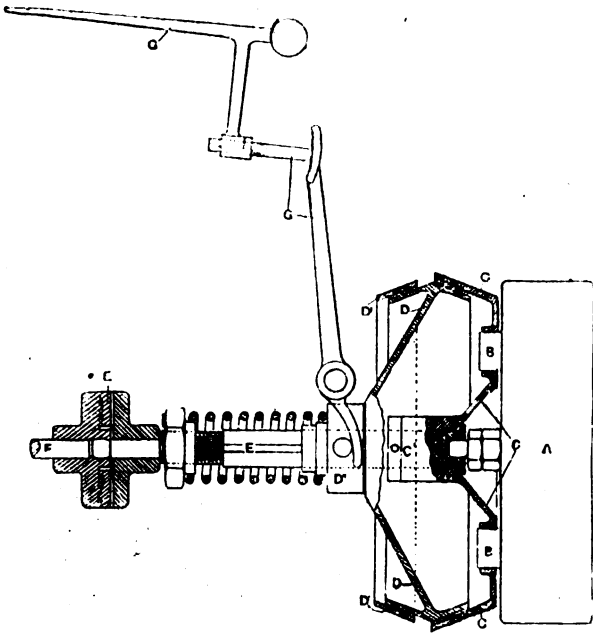


Fig. 56.—The Chenard-Walcker Combination Clutch and Brake. (See page 121).

- | | |
|--|--|
| A. Engine flywheel. | D ¹ . Clutch sleeve. |
| B. Segmental studs on flywheel. | E. Clutch shaft. |
| C. Female portion of clutch. | E ¹ . Flexible coupling connecting clutch shaft and primary gear shaft. |
| C ¹ . Boss of female portion of clutch. | F. Primary gear shaft. |
| D. Male portion of clutch. | G. Clutch pedal connections. |
| D ¹ D ¹ . Coned braking ring fixed to frame. | |

creased by the usual compression stroke of the engine. The fuel is injected into the cylinder during the time the secondary compression is going on, and is ignited in the usual way. Instead, however, of an explosion, the fuel contained in the cylinder is simply ignited, an expansion of the gases taking place rather than an explosion. Without drawings it is somewhat difficult to clearly describe the engine, which is the result of experiments extending over several years.

The leading exhibit of Mr. FRANK MORRIS was the chassis of the 10-h.p. Sandringham car. While this follows, generally speaking, the lines adopted in the Panhard vehicles, Mr. Morris has endeavoured to produce not an excessively speedy car but one which shall be reliable. The main frame is of light U section channel steel, an under-frame carrying the engine and gear box. The vertical motor comprises two cylinders, developing 10-h.p. at 800 revolutions per minute; the engine is governed on the exhaust by a specially-designed sliding cam gear. Instead of the usual fixed cams on the cam shaft, loose longitudinal sliding eccentric cams are used, which, when actuated by the governor, control the motor by varying the lift of the exhaust valves. The ignition is electrical, a feature being the use of a special commutator on the dashboard, with bevel glass front and carbon contacts, driven by bevel geared universal shaft from the cam shaft. Tube ignition is provided as a reserve. The water circulation is maintained by a slow-running, gear-driven pump and a special radiator, placed in front of the motor, directly above the water tank, and containing 70 ft. of radiating tubes cooled by a fan. The clutch is of the cone type with ball thrust; the male portion slides upon the first-motion shaft and drives it by three feather keys. The second motion shaft is arranged above the first motion shaft in the gear-box. Four speeds are provided, the gear-box being fitted with Morris's sleeve, with interchangeable third and fourth detachable speeds by means of which they may be easily replaced at any time. The differential shaft is fitted with adjustable hardened ball thrust for forward and reverse gear. The gear-box bearings have extra large dustproof brasses, with chain ring lubrication. Double-acting expanding brakes acting on drums are fitted to the sprocket pinions, both actuated by a pedal. A hand lever actuates two brakes of the same type on drums connected with the hubs of the rear wheels. The rear portion of the body is hinged at the back so that it can be tilted up in order to get at the gearing. The vehicle is supported on substantial springs enabling solid rubber tyres to be used. The dashboard is of the curved gun carriage type, with side cupboards. Mr. Morris also showed the body of a nine-seated 10-h.p. motor-bus for hot

work, and specimens of the Sandringham cylinders and pistons, by means of which users of old 6-h.p. Daimler type cars can convert their engines into 10-h.p., and users of old 12-h.p. Daimler type motors into 20-h.p.

ELECTRICAL CARS.

Much interest was shown in the chassis of a new electrical car exhibited by Mr. E. W. HART. A noticeable feature of this is the frame, which is so constructed that any type of carriage-body can be fitted to it. It is built of wood and steel, and, instead of being rectangular in plan, the front cross bar is of a (-shape). A new departure is also noticeable in the suspension of the frame; it is supported at the rear by the usual plate springs parallel with the long members of the frame, while at the front it is carried on a transverse plate spring. A 4-8-h.p. electric motor is directly connected by spur-gearing to the rear live axle. The controller is adapted to give five speeds forward, one reverse motion, and an electrical braking position. The battery, which consists of a set of forty-four accumulators of the Phoenix or Fulmen type, of a capacity sufficient to run the vehicle a distance of from forty to fifty miles on one charge, is carried in a large tray slung underneath the centre of the frame. A novel system of support is adopted, by means of which it can be quickly lowered on to a trolley when discharged, to be replaced by a charged battery, or let on to the ground to enable a connection to be re-made, should one happen to work loose. Mounted on the frame are two transverse rods, free to rotate; to each end of these a short length of chain is attached, while on one end of each is fixed a worm wheel with which mesh worms formed on a shaft, which can be rotated from the rear of the car. On the battery tray are fitted four rings with which hooks on the ends of the chains engage. Thus the battery can be raised or lowered as desired, the chains winding themselves on the rods when the battery is raised into position. Two pedals are provided, one controlling the circuit breaker and the other a powerful hand-brake. On the same stand were shown well-finished specimens of three different types of bodies—Victoria, landaulette, and brougham, which may be fitted to the chassis of the Hart electrical car.

A type of electrical vehicle new to this country was to be seen in the Waverley shown by the WAVERLEY ELECTRICAL VEHICLE COMPANY. The display comprised five different types, ranging from a neat two-seated runabout to a tradesman's delivery van. A noticeable feature is the attention which has been paid to the question of securing great elasticity of the body suspension, no frame in the usual sense of the word being employed. The two-seated runabout, the two-seated Chelsea, and the Stanhope are fitted with one 3-h.p. electric motor, while the four-seated Surrey and the delivery van have two motors of the same power. They are of the ironclad or enclosed multipolar type, with drum armature and machine-formed armature coils; they are capable, like all electric motors, of developing much beyond the normal rate for short periods. The motors are so mounted forward of the rear axle that they are free to oscillate independently of the carriage body. In the cars with one motor a brake drum is mounted on the projecting end of the motor-spindle. The power is transmitted by a double helical or fishbone toothed pinion to a similar wheel surrounding the differential gear on the rear axle. The large gear wheel is made of gun metal, and the small pinion of solid steel, and both parts run in an oil-containing case. The double helical gear is claimed to entirely obviate all noise, and at the same time insure great durability of the parts. In the cars with two motors, they are mounted one on each side of the gear case, each driving one of the rear wheels of the vehicle through double helical gearing independently of the other, no differential gear being used. The

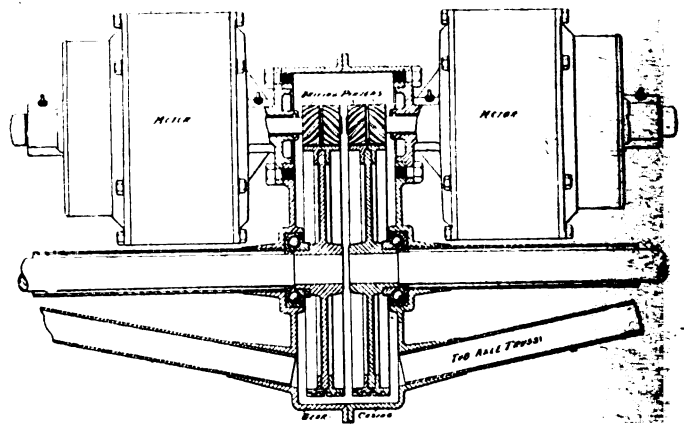


Fig. 57.—Rear Axle of Waverley Electric Car, showing Double Motor Drive.

cars with single motor are equipped with a battery of twenty-four accumulators of the Planté type, and those with two motors with forty accumulators, the capacity being stated to be sufficient for a run of about forty miles on one charge. The controller is adapted to give three speeds forward and reverse, and an electrical braking position, by means of which the motor is converted into a generator, thereby producing sufficient current, which is thrown automatically through resistance, for retarding the speed of the vehicle. In addition a pedal-operated hand brake is provided. The vehicles are equipped with tiller steering and wood wheels, while the bodies are luxuriously upholstered.

STEAM CARS.

General adoption of heavy steam vehicles has caused traction-engine builders to devote attention to the question of producing an engine to come within the tare-weight limits of the Act for hauling heavy loads. At the Show two engines of this kind were exhibited, one of which was dealt with in a recent issue. The other is illustrated in Fig. 58; it is the production of Messrs. WALLIS AND STEVENS, Limited, the engine they had on view being coupled up to a trailer loaded with 6½ tons of parsnips. It will undoubtedly take some time before the full value of these light locomotives is generally appreciated, but all those who have materials to remove or deliver should carefully take the matter into consideration, as, in every case where there is much work to be done, the saving effected by using steam over horses or other forms of power is very great. The engine is designed for the purpose of doing the work now done by one, two, or four heavy draft horses. For this work Messrs. Wallis and Stevens claim that it is far preferable for the motor to be independent of the vehicle it is to draw; it is easier to handle, enables a larger load to be taken, and divides the weight over eight instead of four wheels. One of its important features is that it can work with existing vans, wagons, trolleys, or any other form of vehicle suited to the special requirements of the materials to be conveyed, and also that it can be shifted from one vehicle to another without loss of time. With regard to the details, it may be mentioned that the boiler is of the loco-multitubular pattern. The engine cylinder is steam-jacketed and lagged, while the transmission is by spur-gearing, two speeds being provided. The wheels are of a stout section of T steel, with wrought spokes strongly rivetted. The hind axle is fitted with a patent spring arrangement, the forecarriage being also provided with a spring. The change speed gear is provided with a locking arrangement, which prevents the possibility of accident by the two speeds coming in contact at the same time. A very powerful brake is provided, which is applied to

bored cast-iron cylinder. The timing of the ignition, the lifting of the exhaust valve and the cut-off of the current are all operated by one lever on the handlebar. The machine is fitted with an internal expanding compensated drum brake on the rear wheel hub, and a pull-up tyre brake on the front forks, which are reinforced by two stays extending from the front wheel spindle to the ball head clip. The motor is carried vertically in front of the bracket in a bifurcated bottom tube through which the engine-cylinder passes. A novel petrol level indicator is provided, this showing the depth of petrol in the tank in inches.

On the stand of Messrs. VAN TOLL and Co. was shown a new motor-bicycle of Dutch construction, known as the "Altena." The machine is noticeable on account of its X frame, the 2½-h.p. motor being fixed vertically just in front of the bottom bracket.

Included in Messrs. BROWN BROS. exhibit was the Brown motor-bicycle. The frame is specially designed to allow of the engine being attached vertically and not built in. The motor is 2-h.p., the cylinder being 64 mm. diameter by 70 mm. stroke. It can be easily detached from the frame by removing two bolts. Special attention has been paid to the construction of the base chamber, which is oil-tight. The belt pulley is also oil-retaining, thus keeping the belt free from oil. An efficient silencer and the Longuemare carburettor are provided. The contact breaker is of the "make and break" type. An exhaust valve lifter is fitted, while the belt is of the twisted raw-hide pattern with core, or a V-shaped pattern can be fitted if desired. The weight of the machine complete, fitted with spirit and lubricating oil ready for running, is about 110 lbs. A machine built of B.S.A. fittings and provided with Minerva 2-h.p. motor, having mechanically-operated inlet valves, was also shown. On a separate stand a big display was made of motor accessories, which included almost everything a motorist may desire, from a motor to a screw.

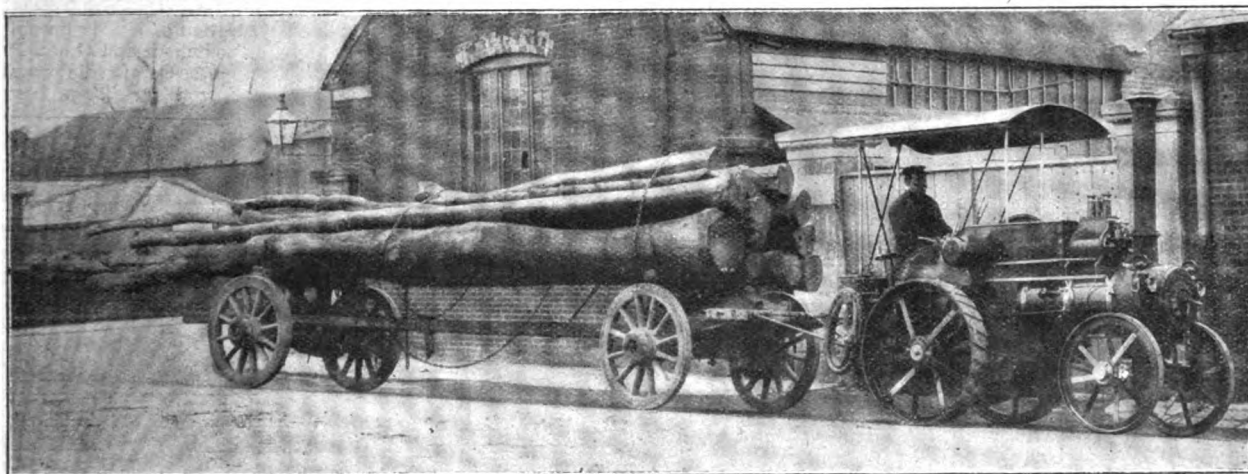


Fig. 58.—Messrs. Wallis and Stevens's Miniature Traction Engine.

the rims of both the driving wheels, thus being able to stop or hold the engine in any position, while, in case bad roads or very steep gradients be met with, a winding drum is fitted to the engine, by means of which, though remaining stationary itself, the engine can haul up the loaded trailer.

A new steam-car named the "Hythe" was shown in an incomplete condition on the stand of Messrs. SUFFIELD AND BROWN. Outwardly it resembles somewhat the standard type of petrol car, a 20 in. tubular boiler with 689 tubes being located under the bonnet. The burner is one of Clarkson's, ordinary paraffin being used as fuel. The car is driven by a 15-h.p. engine having three cylinders—one high and two low pressure. A Renold silent chain connects the engine with the differential shaft, from which the power is conveyed by side chains to the rear road wheels.

The merits of the Hydroleum system applicable to steam cars were demonstrated by the HYDROLEUM MOTOR COMPANY, Limited. By the use of the company's feeder, together with the fittings, Hydroleum oil can be used for fuel in any make of steam car at a cost of less than one farthing per mile per ton. Ordinary paraffin, too, can be employed with satisfactory results. Some comparative tests recently carried out by Mr. Worby Beaumont in connection with a Locomobile showed that on a distance of fifty miles there was a considerable balance of economy resultant from the application of the Hydroleum system, which evidently satisfied Mr. Beaumont as to its efficiency.

GENERAL.

Among the motor-bicycles which attracted attention was the "WELER." This is made with engines of 1½-h.p. and 2-h.p. The motor has a mechanically operated inlet valve and an exhaust valve lifter. Two ignition batteries are provided, either of which can be put in circuit by means of a compound plug. The engine is built exceedingly light, the radiating flanges being constructed of stamped steel pressed on to a straight

A variety of miscellaneous parts for motor-cars was shown on the stand of Messrs. SUFFIELD AND BROWN, including electrically-welded channel steel frames, boilers, expanding copper joints, roller bearings, the Fleuss boiler feed regulator referred to in our report of the Stanley Motor Show; Joel's patent controller for electrical vehicles, the feature of which is its quick action, and a Joel "Sine" electric motor. The latter runs at 900 revolutions per minute, and gives 63 amperes at 80 volts: it is of the double-wound type, and has a high efficiency.

The Clement-Garrard motor-cycles were shown in the gallery by the GARRARD MANUFACTURING COMPANY, Limited. Their merits are generally well known, and secured general attention at the Exhibition.

At the stand of the BIRMINGHAM MOTOR MART Mr. R. J. Alpe made a great feature of his "Westland Brush" sparking plug. The terminal of the inner core consists of a bundle of wires somewhat on the lines of the old briar broom. The stem of the core is made from hard-drawn copper wire, in the head of which the pure platinum points are inserted and permanently fixed. This core is firmly cemented in the porcelain, which itself is fastened and cemented in the nut of the plug, and it is quite free in the body. There is, therefore, no strain whatever upon the porcelain, hence there is no tendency or liability to crack or burst with contraction or expansion from the heating or cooling of the engine. The end of the porcelain is formed into a ball, and will not crack or chip with the heat of the explosion. This formation effectually prevents short-circuiting. The porcelain is moulded perfectly true, and is made from a specially-selected and tough material. It will be found sufficient if the nut is screwed up lightly with the fingers to screw the terminal of the high tension wire on to the brush plug. The brush consisting, as it does, of sixteen wires, each giving an independent spark, an aggregate spark of great strength is obtained.

Messrs. F. A. PULLEN AND Co. made a display of the Moore steam pumps, which have become well-known among automobilists since they were first described in our pages. Several other specialities were also exhibited,

and their stand was of considerable interest to users of steam-cars. "Smooth-on castings" were on view, this being an iron cement for repairing blemishes, blowholes, or defects in iron or steel castings.

Messrs. BRANSON, KENT, AND CO. had a very comprehensive collection of accessories for automobilists, and showed several good lines in lamps, carburettors, horns, pumps, coils, plugs, voltmeters, tools, valves, and spare parts, switches, jacks, tool bags, etc. Their non-slipping pulley and a spark gap device were objects of much interest to visitors.

The display of Messrs. ARMSTRONG, STEVENS, AND SON was of substantial interest, and although their specialties do not lend themselves

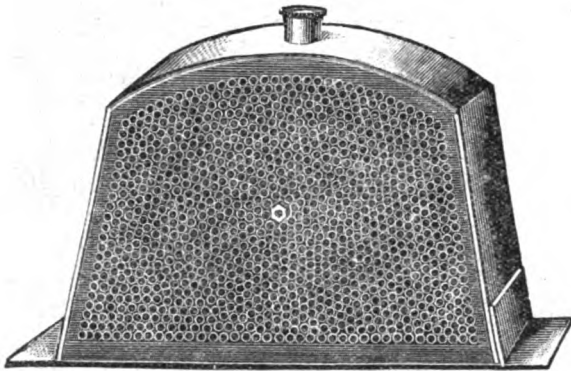


Fig. 59.—The Armstrong-Stevens Tubular Radiator.

to artistic display, they attracted considerable notice. The new tubular water radiator (Fig. 59) is made up with solid-drawn copper tubes. The latter are flanged very effectively, and the whole design is worthy of close study by manufacturers. A spring catch fastener is employed in place of the familiar knob, with the result that vibration has no effect, and the rattle often associated with the fasteners is obviated. A good assortment of drop-forged goods was also shown.

The "Empire" storage batteries for the electric ignition of automobiles were shown by Messrs. SUTHERLAND AND MARCUSON, whose battery accessories are favourably known to motorists generally.

A miscellaneous collection of pumps, lubricators, electrical terminals, unions, stampings, etc., for automobiles was shown by Messrs. ROSS, COURTNEY AND CO., LIMITED, who also exhibited horns, pumps for motor-tyres, etc.

Among the novelties at the Show was CUTMORE'S PATENT "CARSIQ," a new method for giving the signal in connection with motor-horns. A rubber bottle-shaped bulb is encased in a spherical metal ball, in two halves, and connected together in the centre by a screw-threaded joint, the upper portion of which is provided with a metal plunger, which moves in a collar in a central vertical position, so that when influenced by pressure on the hand or other means the bulb is collapsed and the signal given instantaneously.

The Max electric accumulator was shown by Messrs. J. HOLDER AND CO., it being claimed for this speciality the triple advantages of robustness, lightness and cleanliness.

Messrs. Philipp and Co. were represented by a comprehensive display of speed gears, motor axles, motors, artillery wheels, radiators, lubricators,

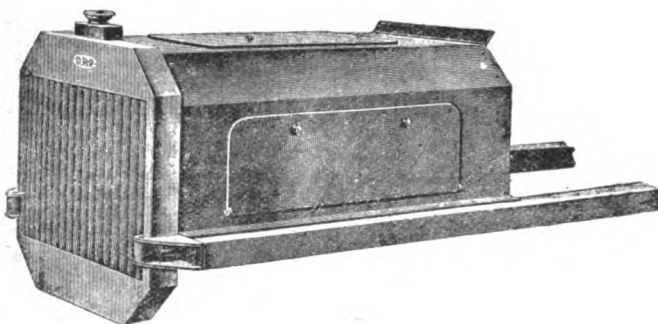


Fig. 60.—Messrs. Philipp's Combined Water Tank and Radiator.

etc. Among the special articles was a ball fork swivel front axle, while considerable space was devoted to Sauerbier's radiators, in which endless spiral fins are fitted to form one body only when connected to the tubes. Among the new radiators for which Messrs. Philipp and Co. anticipate a wide market is that illustrated in Fig. 60. The new model of the Camper engine of 14-h.p. attracted much attention, as well as a new irreversible steering gear which, instead of being actuated on the usual principle of the quadrant and worm wheel, is controlled by means of two cams acting on two rollers attached to an arm on the lever connecting to the steering links.

A striking display of motor garments, both for ladies and gentlemen, was made by Mr. C. R. Base, whose tailoring taste is embodied in all his productions. The "C.R.B." specially-milled melton or frieze motor coats are among his specialties; the advantage of the style being that it gives good protection to the chest, and forms a wrap for the knees, as it is cut very full in the skirt, and buttons to the bottom inside. A motoring zibeline coat for ladies was also noticeable for the protection it gives to the shoulders in wet and cold weather, being waterproof and windproof as well as comfortable in wear and appearance. Divided aprons, leather jackets, overcoats, vests, trousers, etc., for gentlemen motorists, as well as mechanics, also had a place on the stand, on which was a good collection of garments in furs, ponyskins, etc. A comprehensive selection of gauntlets, goggles, motor veils, foot muffs, etc., completed a very interesting display.

Mr. O. C. SELBACH had a large display, showing radiators, gearing, axles, and other parts, the well-known Dubrulle lubricators, Viteesse lubricating oils, "Spitfire" sparking plugs, spark intensifiers, high speed coils, Pozzy and Potron's axles, etc. Examples of the Regal car were also on the stand, fitted with engines of 6-h.p. and 12-h.p. respectively. That of lower power has three speeds forward and reverse, the other having four speeds in addition to the reverse motion. All speeds are actuated by one lever, and there is a direct drive through on top speed, all intermediate gears being at rest.

On their stand the E. M. BOWDEN'S PATENTS SYNDICATE, LIMITED, illustrated the adaptability of the Bowden mechanism for controlling throttle, valve lifter, carburettor, and advance sparking. The Bowden patent clutch-hub and chain drive for motor-cycles was another important speciality on this stand.

The CLIPPER PNEUMATIC TYRE COMPANY, Limited, had a good show of the Clipper Continental tyres, which have rendered a good account of themselves since their introduction to the motoring world. Prominent on the stand was the new "non-slipping Clipper Continental motor tyre," which we described in a recent issue, and an illustration of which appears in Fig. 61. This is being made by the Continental Caoutchouc and Gutta Percha Company, and at their works in Hanover and on the German highways it has been submitted to a series of tests which have demonstrated its property of reduc-

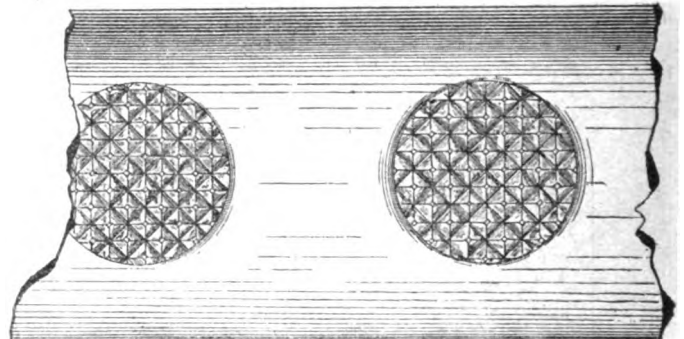


Fig. 61.—The Clipper-Continental Non-Slipping Tyre.

ing sideslip to a minimum; in fact, it is claimed to obviate it altogether, a point upon which the experience of English users will shortly be available. The tyre is fitted with a flat tread extending all round the tyre. In the centre of the tread are embedded corrugated metal discs, 1 in. diameter and about 1½ in. apart, which discs are entirely vulcanised into the rubber, and lay flush with the tread itself. They can be replaced, when the corrugations are worn down, by new ones, which are screwed into the tread in an easy and secure way. The corrugated surface of the discs performs the usual service of considerably reducing the chances of side-slip.

The FISK DETACHABLE Vehicle Tyre was shown by the SOUTH BRITISH TRADING COMPANY, who also had on view the "20th Century" motor-head and side lights, the "Sterling" motor-tool kits, and other accessories familiarly known. The method of attaching depends in no way upon the air pressure in the tyre to hold it on the rim, and it cannot blow off from or creep on the rim until the clamping bolts have been removed. The tyre is attached to a perfectly flat rim, and its design is such that the base or the beads are held in such a position that the inner tube cannot be pinched, and there is no chance of any mistake being made in attaching or of the inner tube blowing out when the rings and bolts are once in place. These rings which hold the tyres in place have an inside angle surface, and the beads play the part of an inside coned wedge, serving two purposes: first, of clamping the beads together, and, second, of locking the base of the tyre firmly to the rim, thereby preventing all danger of creeping. Perhaps secondary to the ease of riding is the ease with which the Fisk tyre can be removed from and replaced on the rim, and in view of the fact that all parts are visible during the operation, there is no liability of failure. The method of manufacture is such that the outer case when off the rim assumes the same position as when attached, which enables the operator to insert the inner tube without fear of its being misplaced, pinched or wrinkled, while the tyre is being attached.

Mr. A. BAEDER showed the Helios lamp, described in the *Journal* a few weeks ago, and also some specialties in motor-car horns.

(To be concluded.)

CORRESPONDENCE.

ASSISTING THE POLICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We should like to know if any of your readers can answer these questions:—(1) If a person is told by the police to stand in the road in the way of a car, who would be answerable for injuries? Would that person be obliged to obey, or be fined if he did not? (2) What punishment can be inflicted on any person warning the drivers of cars of a police trap? (3) Who would have to defray the cost of putting posts every quarter of a mile along the road so that drivers could check their speed? The answers to these questions will be interesting to a great many people, especially in Crawley, as this district is an affected area.—Yours faithfully,

W. W. BANNISTER AND CO.

HORSE-POWER OF MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your second notice of the recent Motor-car Exhibition at the Agricultural Hall I observe some particulars of various cars, and with great pleasure notice that you have inserted in many cases, in addition to the horse-power named by the makers, the actual bore and stroke of the cylinder and piston. One of the cars referred to is classed as a 10-h.p., having two cylinders, $4\frac{1}{2}$ -in. bore by $4\frac{1}{2}$ -in. stroke, with 800 revolutions per minute as a normal speed. I happened to be one of the visitors to the Show, and was much interested there in the design and engine of a nominal 10-h.p. car with three horizontal cylinders, $4\frac{1}{2}$ -in. diameter by $4\frac{1}{2}$ -in. stroke. The latter engine was rated at 10-h.p., with 750 revolutions per minute as normal speed, and my object in writing to you is to ascertain why the car you have described on page 92 of your last issue is classed as 10 h.p., and the other the same, when to all appearances, and with a very simple calculation, if one shows 10-h.p., the other ought to show at least 15, even with the fifty slower revolutions per minute. While at the Show I was pointed out a car with $6\frac{1}{2}$ -h.p. engine, the bore and stroke in this case being $3\frac{1}{2}$ in. by $4\frac{1}{2}$ in. On the basis of 800 revolutions per minute this engine should give barely 3-h.p., but I suppose the revolutions were calculated to be at least 1,500 normally. It seems to me that the advertised horse-power of engines is in a more or less chaotic state, and it would be an immense boon if the Automobile Club would issue to the motor papers a carefully-compiled list, giving actual b.h.p. of single and multiple-cylinder engines, say from 3 in. to 5 in., and taking, say, 800 or 1,000 revolutions per minute as a standard speed. At present one may buy a 10-h.p. car with an engine having double or half the cylinder capacity of another motor similarly rated! In counties like Cornwall it is really a most important matter that one should know the actual horse-power he is buying, for the prospect of touring in this county chiefly on bottom speed is not an inviting one for anybody who has invested in an over-rated but under-powered car.—Yours faithfully,

HARRY RICH.

MECHANICALLY-OPERATED INLET VALVE FOR $3\frac{1}{2}$ -H.P. BENZ CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—For the last three months I have been running my $3\frac{1}{2}$ -h.p. Benz with a mechanically-operated inlet valve, and have found the result satisfactory. As to the query raised by "A. G. J." in the *Journal*, I cannot see that there is any possibility of a back fire, as the mechanically-operated valve cannot open or close, except at the proper time.—Yours truly,

C. PETERSON WEEKS.

THE QUALITY OF PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We feel it our duty to put the motoring public on their guard so that they may test the quality of the petrol supplied to them. We have for some years mostly used Pratt's motor spirit, and up to within a few months ago it proved sufficiently satisfactory. The last few months we have had considerable trouble in getting our motors up to power on the test bench, and have also received many complaints from customers to the effect that they could not get their cars to go properly. We must confess that we could not understand where the trouble was coming from; it never occurred to us to try the petrol, other than to be sure that fresh stuff was being used, as, having practically had no complaints for years, we were lulled into security as to the quality of the spirit itself. Suddenly we ascertained the cause of the trouble, and on testing an entirely new consignment of Pratt's motor spirit on March 7th we found it to vary in specific gravity from .720 to .800! At last the representative of the Anglo-American Oil Company confessed that that was the kind of spirit we had been supplied with recently, and, moreover, the Oil Company wrote us: "We do not guarantee our brand of motor spirit as being of any specific gravity; owing to the great demand for this spirit, the refiners supply it as motor spirit only, no gravity being specified. The spirit supplied is in every way suitable for the purpose it is required."

In every way suitable, forsooth! Motors on the test bench with Pratt's motor-spirit only gave between 14 and 15 b.h.p., and we were

completely puzzled as to what was wrong. The substitution of another spirit, which was guaranteed in a letter as .680 to .685 specific gravity, enabled the same motors to develop 20 b.h.p. and over!—Yours truly,

CHARLES SANGSTER.

[With regard to the specific gravity, we would point out that no temperature is given in the foregoing letter; while we understand that the Anglo-American Oil Company have never given a guarantee as to the specific gravity of the spirit they supply.—Ed. M.C.J.]

MR. THOS. BROWNING, of 79, Marlborough Mansions, West Hampstead, writes:—"I have had a grease box left here which does not belong to me; it is marked, 'Louis Le Febvre Bte. S.G.D.C. No. 3.' Do you think you can find the owner? It was found on the Hendon road. I shall be pleased to hand it over with the finder's name if he will write me."

CLASSIFICATION OF MOTOR BICYCLES.

MR. E. H. ARNOTT has sent a letter to Mr. F. Straight, Assistant Secretary for motor-cycling to the A.C.G.B.I., re handicapping and classification for motor-bicycles, in which he says:—"At present the tendency seems to be, as in the case of the Reliability Trials, to classify by cylinder capacity. I think that if this standard is adopted for races a great mistake will be made, and that the standard should be fixed by weight, and this for many reasons.

"I believe that the objects of the racing rules will not be only ease of handicapping, but also the improvement of motor-cycles in general by competition, the abolition as far as possible of freaks, and the use of commercial engines, and the question is, how is this to be done? To my mind, the cylinder capacity standard absolutely fails in this, and is most unreliable as a means of handicapping, as the following points have in addition in each case to be taken into consideration when determining the horse-power: number of revolutions per minute; compression; size and weight of flywheels; size of valves, etc.

"The tendency of the cylinder capacity standard would thus be to encourage very high compression, and freakishly large and heavy flywheels, as these points would not be penalised in any way. As far as the handicapper is concerned, his lot would not be at all happy. In the case of two machines, apparently identically the same, being entered for a race (say $2\frac{1}{2}$ -h.p. with bore and stroke 76 by 76), it would not be possible for the handicapper to know that one of the engines had had a little turned off the top of the cylinder, and the compression increased—thus altering its power for better or for worse as the case might be—and it would be nearly impossible to check this. Handicapping, in the strict sense, must for motors, I think, be very much of a lottery, and I believe the simplest and best way to arrange these matters would be to work on the Continental lines, namely, *classes* confined to certain *weights*—no handicaps at all in the strict sense. The advantages of the weight system include ease of checking, only a weighing machine being required; the encouragement to manufacturers to reduce weight, this being equally as important as securing the greatest amount of power from a given cylinder capacity. The beneficial results from this system are very fully demonstrated by the enormous reduction in the weights of cars during the last two or three years, the strength apparently being in no way sacrificed. The same remark applies to continental motor-bicycles, and an example can be found in the Werner $2\frac{1}{2}$ -h.p. motor-bicycle, which is some 30 lbs. lighter, I believe, than any English motor-bicycle of the same power.

"One other feature, from a sporting point of view, is that owners of English bicycles would be able to compete in continental races, if the weight limits were fixed at the same standards. At the time of writing there is, I believe, not a single English motor-bicycle entered for the Paris-Madrid race, the reason for this being purely the question of weight, as there is not an English motor-bicycle of, say, even $2\frac{1}{2}$ -h.p. which weighs less than the 50 kilos (110 lbs.), without accumulators, specified by the French authorities.

"There is the possibility that before many years are gone England may wish to push the sale of motor-bicycles on the Continent, as has been done with ordinary cycles, but I am quite sure that unless the English motor-bicycles are run in the continental races, and run successfully, England's chance of a market will be hopeless, as the value of long distance racing tests is very fully recognised there. The classes on the Continent are:—

30 kilos (66 lbs.) and under,
50 kilos (110 lbs.) and under,
250 kilos (550 lbs.) and under,

in all cases without accumulators. I would suggest a further class of 70 kilos (154 lbs.), and under; this would include Excelsior, Riley, and other makes using M.M.C. engines, and also Humbers and others."

AN EXPENSIVE STABLE.

A MOTOR-CAR belonging to Mr. H. H. Raphael broke down, and was pushed by the driver into a stable yard in Great College Street, N.W. The manager protested, and said he would charge 25s. a week if it was left there. Judge Bacon has sanctioned this charge, which was contested on the ground of exorbitance.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Kingston	F. Athlerley, Haymarket, W.	25 m. p. h.	£3.
"	M. Borra, Leicester Sq., W.	25 m. p. h.	£2.
Steyning	F. Cooper	—	£5.
Worthing	S. Daver	—	£5, etc.
"	W. Simpson, Guildford	16½ m. p. h.	£1, etc.
Berkhamstead	C. Watney, Berkeley Sq., W.	20 m. p. h.	£5, etc.
"	J. H. Bowden, Greenwich	17 m. p. h.	£3, etc.
"	*J. P. Clark, Willesden	—	16s., etc.
Ryde	*K. T. Benzil, Cowes	18 m. p. h.	2s. 6d., and 21s. cost.
Brighton	R. Dawson (Coldstream Guards)	18 m. p. h.	40s., etc.
"	W. L. Duck, Brighton	—	£2, etc.
Grahamstown	P. Roberts, Grahamstown, S.A.	—	£1.
Kingston	G. A. Wingfield, Cheap-side, E.C.	—	40s. etc.
"	B. Latham, Highbate, N.	—	40s., etc.
Reading	A. E. Major, Reading	18 m. p. h.	£1.
"	E. Lee, Reading	—	£1.
Tonbridge	H. Foster, Sevenoaks	—	£1, etc.
"	T. Hickling, Bromley	—	£1, etc.
Brentwood	W. Lear, St. John's Wood, N.W.	20 m. p. h.	£3, etc.
Bromley (Kent)	H. W. Bradbury, Croydon	—	£3, etc.
Kingston	E. Davis, Piccadilly, W.	—	£3.
"	F. L. Wallace, Hanover Sq., W.	—	£3.
"	M. E. Laudet, Putney	—	£3.
"	Dorothy Levitt, New Burlington St., W.	—	£2.
"	A. Canliff, St. James's	—	£2.
Horsnam	G. Rich rdson, Peckham	22 m. p. h.	40s., etc.
"	T. Lapraik, London, W.	—	40s., etc.
Farnham	A. K. Bailey, Southsea	—	£3, etc.
Hove	T. B. Browne, Earl's Court	37 m. p. h.	£5, etc.
"	H. R. Anderson	30 m. p. h.	£5, etc.
"	A. Fletcher, Clapham	26 m. p. h.	£2, etc.
"	*H. Martin, Croydon	26 m. p. h.	£2, etc.
"	J. Green, Brondesbury	26 m. p. h.	£1, etc.
"	H. Smith, Stratford	23 m. p. h.	£1, etc.
"	E. de Wilton, London, W.	21 m. p. h.	£1, etc.
"	H. W. Barton, Lambeth	—	£2, etc.
"	F. W. Fleming	21 m. p. h.	£1, etc.
Guildford	Dr. Shaw, Elgin Avenue, N.W.	23 m. p. h.	£3.
"	H. Dearden, Eccleston Sq., N.W.	22 m. p. h.	£3.
"	J. Guer, Porchester Terrace, N.W.	24 m. p. h.	£3.

* Where no alleged speed is given it is understood to be above the legal limit.

* Motor Cycle Cases.

MOTORISTS in Grahamstown, South Africa, have their little worries and perplexities. Percy Roberts, of Messrs. Davies, Marsh and Co., engineers, has been fined for riding a motor-bicycle at a speed exceeding the rate allowed by municipal regulations. Despite the fact that evidence for the defendant showed the machine was geared down to a pace of 8½ miles per hour, the magistrate convicted, and since the case motor-bicyclists in the small town (which, by the way, has very little traffic) have been so keenly watched that it is almost advisable for them to walk beside their machines. The local regulations allow a speed of not more than ten miles an hour.

HIRING MOTOR-CARS.

IN Edinburgh Sheriff Court recently, Sheriff Henderson pronounced judgment in the action at the instance of John Buick, Edinburgh, against the New Rossleigh Cycle and Motor Company, Ltd. Plaintiff stated that he and seven others hired a motor-car and man for the sum of £2 2s. for the purpose of going to Peebles on August 10th, 1902. During the homeward journey the car was overturned, the whole of the occupants being thrown on to the road and injured. The Sheriff dismissed the action on the ground of incompetency and granted the defendants' expenses. As a reason the Sheriff said the action was raised only at the instance of one of the eight persons who suffered damage. The case was appealed to the Sheriff-Principal, but in the meantime the other seven gentlemen concerned had raised actions for damages against the defendants. In the circumstances Sheriff Rutherford has recalled the Sheriff-Substitute's interlocutor, repelled the defendants' first plea-in-law, remitted the case to the Sheriff-Substitute to be conjoined with the supplementary petition, and reserved

all questions of expenses to be disposed of along with the expenses on the merits.

POLICE TRAPS.

THERE is a telephone trap between the police station at Berkhamstead and Tring—a good stretch of five miles.

THE police are very active in the neighbourhood of Slough, especially on the stretch of road between Colnbrook and Slough. On Sunday week they were on the watch in the middle of High Street, Slough, with stop-watches and field glasses. Motorists should also be careful between Maidenhead Bridge and the town.

NO LIGHT.

A POINT of importance to motorists was before the Woking magistrates on Saturday, when the driver of one of the motor-cars used by Mr. J. A. Fyler, M.P., during the recent election in the Chertsey Division, was summoned for not showing a rear light. The bench inspected the car, and found that, although lamps were carried on both the near and off sides, the rear disc of neither could be seen from a point immediately behind the centre of the car at a distance of twenty yards. They therefore imposed a nominal fine of 5s., on the ground that there had been no intentional evasion of the law.

THE Penrith and District Road Carrying Company, Limited, has just been formed.

MR. CHARLES E. SHALDERS has opened a motor garage at 43, Northgate Street, Great Yarmouth.

KING EDWARD and King Carlos have been enjoying motor car trips along the Portuguese coast from Cascalo.

MR. N. LITTLEJOHN has opened a motor-car repairing establishment at the junction of Station Road and East Street, Farnham, Surrey.

THE Vulcan Motor Manufacturing and Engineering Co., Ltd., have now fully equipped their new works in Hawesside Street, Southport, where a large stock of sundries, oils and petrol will be kept on hand. Storage accommodation for about 100 cars is also available. The company is bringing out a new gear-driven car.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, APRIL 18, 1903.

[No. 215.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE first of a series of five monthly runs in connection with the Reading Automobile Club's challenge cup for reliability took place on Friday, the 10th inst., to Wantage. Leaving the Club premises in Reading at 10.30 a.m., the cars proceeded along the Oxford road as far as Streatley, and thence *via* Blewberry. Twenty-four members and friends sat down to luncheon at the Bear Hotel, Wantage, and, after a look round the historic town, returned to Reading via Wallingford. Those taking part in the run included Messrs. A. H. East (8-h.p. Corre), with the Club president (Dr. J. H. Walters) on board, C. H. Dodd (8-h.p. Renault), H. Callas (Mabley), Dr. A. C. Major (Baby Renault), Whitehead (8-h.p. M.M.C.), W. L. Creyke (30-h.p. Panhard), Dr. Claude Truman (4-h.p. Rochet), J. V. Moinet (Ixion motor-cycle), G. L. Brigham (Mabley), A. E. Major (16-h.p. Benz), A. Phillips (Royal Enfield motor-cycle), A. E. Pocock (7-h.p. Benz), F. R. C. Joyce (motor-cycle), E. J. Wickens (10-h.p. Panhard) driven by Mr. Parratt, A. C. Brewerton (8-h.p. M.M.C.), and Albert E. Newton, Hon. Sec. (De Dion tri-cycle).

The Late Count Zborowski.

ON Thursday of last week the remains of Count Zborowski were carried to their last resting-place at Burton Lazars, near Melton Mowbray. The principal mourners were the Countess Zborowski, the Count and Countess de Montsaunin, the Countess du Luart, Colonel and Mrs. Lionel L. Powell, Mr. Enthoven, Mr. Covenen, Mr. M. Darcy, Mr. H. G. Bateman, Mr. Knapp Fisher, and Mr. Fisher, jun. The first portion of the service was conducted at the parish church of Melton Mowbray by the Rev. R. Blakeney, vicar and rural dean. From there the procession was re-formed and proceeded to Burton Lazars. Conspicuous among the flowers on the coffin was a white cross from the Countess Zborowski, while among those who sent wreaths were the Automobile Clubs of France, Nice, Germany, and Great Britain and Ireland. The latter Club was represented by Messrs. Frank H. Butler and J. D. Siddeley.

Motor 'Buses at Bolton.

ALTHOUGH the County Palatine is being covered by a spidery network of tram-lines, there are Lancashire Corporations observant of the merits of the automobile, and it is satisfactory to hear that the electrical engineer of Bolton has been requested by his Town Council to ascertain the terms upon which motor-'buses could be obtained for a six-months' trial. We hardly understand why the electrical engineer should have been invited to do this, seeing that the matter comes within the province of the Committee concerned with locomotion. Still, the suggestion to see what can be done with motor-'buses is interesting, and the position of the town of Bolton gives it an importance that should encourage manufacturers to do their best to secure reliable vehicles for the Corporation.

A Change in Surrey.

NOT only are the police authorities becoming converts to automobilism, but the county magistrates are recognising the importance of the new movement. At the Easter sitting of the Surrey Quarter Sessions the Standing Joint Committee, representing both the County Council and the magisterial bench, recommended the erection of a garage near the county hall for the convenience of those having business at the sessions who are in the habit of travelling by automobile or bicycle. Is Surrey repentant? And are we to regard this innovation—worthy of imitation throughout the country—as the first fruits of a conversion which may have effect in more tolerance on the part of the police? It would be well if satisfactory answers could be obtained ere long, or the hotel keepers and others on the Surrey roads will suffer, as they did last year, from the loss of trade occasioned by motorists forsaking their pleasant roads in favour of paths where policemen do not lurk behind hedges nor regard the motorist as an insect to be exterminated, if possible.

A Motor Track.

WHILE interest in the Irish motor course is growing things are proceeding quietly with the arrangements for the provision of a motor track in England. This will soon become an accomplished fact, Purley being the site selected. We have heard little of late as to the suggested tracks at Lowestoft and Clacton, and it would appear that, with official sanction, the Purley course will be the one most favoured by motorists.

Water Wanted.

A FIRM that purchased one of the heavy vehicles shown at the Agricultural Hall Exhibition has experienced some difficulty in obtaining water. This is a matter that is becoming increasingly important in view of the development of this class of traffic, and local authorities in the suburban districts should provide facilities for the refilling of tanks at convenient places. Objection is taken to hose pipes being thrown into horse troughs—a procedure not to be commended—but the tanks must be refilled somewhere, and we shall be glad to hear of places in London and Middlesex where provision is made for this purpose. Seeing the cleanliness of the motor lorry as compared with horse-drawn vehicles, and the thinning of the street congestion which would be possible by the universal adoption of the automobile, we would urge upon local authorities the advisability of giving attention to the subject.

Fatal Accidents.

THE necessity for careful driving on the part of motorists is emphasized by two deaths recorded this week. An aged woman knocked down by the Marquis of Downshire's automobile has succumbed to her injuries, and early this week a man was killed on Woodhouse Moor, Leeds, by an automobile driven by Mr. W. E. Nicholson. Mr. Nicholson states that the deceased

had begun to move from the roadway in response to his horn and then stood still gazing upwards. In order to pass him the car was turned in, and at that moment the man, stepping back, was knocked down. There is no doubt that the nervousness of pedestrians and their uncertainty in crossing roadways is one of the harassing worries with which motorists are familiar.

To the Arctic Circle.

A MOTOR-CAR tour to within $2\frac{1}{2}$ degrees of the Arctic circle has been mapped out by Mr. Charles J. Glidden, of Boston, Mass., U.S.A., who last year made a 5,000-mile tour through southern Europe. Mr. Glidden expects to leave New York early in June, and will start on his car from London on the 20th of that month. He will tour through the Devonshire district and Wales to Holyhead, where he will cross to Dublin to witness the Gordon Bennett cup race. Afterwards he will make, for Belfast, where the steamer to Glasgow will be taken. Then by road to Edinburgh; by steamer to Christiansand, Norway; by road to Bergen, Trondhjem, and north to 64 north latitude, within $2\frac{1}{2}$ degrees of the Arctic circle; south to Christiania; east to Stockholm; and south-west to Gothenburg. At this port the steamer will be taken to Frederikhavn, Denmark, the tour being continued to Frederica, Strib, Nyborg, Korsor.



Ready for the Arctic Circle!

[Allgemeine Automobil Zeitung.]

Copenhagen, Kiel, Hamburg, Bremen, and Amsterdam and the Hook of Holland. At the latter place the steamer to Harwich will be taken, the tour being concluded by the journey by road to London. Altogether the tour will extend to 4,500 miles, and Mr. Glidden expects to cover the distance in about forty-five days.

An Inaugural Run.

THE inaugural meet of the Norfolk Automobile and Launch Club on Saturday did credit to the patron, the Prince of Wales, and to Lord Claud Hamilton, the president. About thirty automobiles assembled on the Marine Parade at Yarmouth, the company including Baron Baretto, on a 20-h.p. Wolseley; Mrs. Edge, who drove a 16-h.p. Napier; Messrs. F. F. Wellington and M. Brooke, on Brooke cars; Messrs. G. N. Mann and J. Griffin, on Gladiators; Messrs. H. L. Clark, H. W. Egerton, T. J. Goldie, and W. Spelman, on De Dions; and Mr. H. Watts, on a Daimler. Mr. A. H. King drove Mr. T. Bradley's Daimler, and the Mayor of Norwich was among the passengers from the cathedral city to the seaside town, where all had a spin to the Harbour's Mouth. The cars formed a pleasant procession along the Drive.

Luncheon at Yarmouth.

A GOODLY company gathered in the Assembly Rooms, where luncheon was served under the chairmanship of Mr. G. M. Chamberlin, the company including, in addition to those already named, the Mayor, Town Clerk, and Chief Constable of Yarmouth, and the Town Clerk of Norwich. After the loyal toasts had been honoured, Colonel Diver, the Mayor of Yarmouth, congratulated the Club on having a hundred members, and suggested that through the fertile brain of the Borough Surveyor means might be found to provide at no distant date a garage in the town. The Chairman replied, paying a hearty tribute to Messrs. Mann and Clark for what they had already done, and to Mr. J. W. Howlett, who had come forward to carry on the work of the former gentleman. After other pleasantries the company dispersed, the cars rapidly going their various ways to different places in Norfolk.

Motor Boat Racing.

IN the course of his speech Mr. H. L. Clark said he was very proud to be connected with the motor-launch section, because last year, before they had a Norfolk Automobile Club, when he wished the Yacht Club to take up motor-boat racing, he was laughed at. Gentlemen who sailed yachts wondered why anyone should want to race motor-boats on the rivers. This year he had succeeded in getting the Royal Norfolk and Suffolk Yacht Club to hold its first motor-boat race, which would take place at the regatta at Oulton Broad in August, and those yachting gentlemen, who wondered why one motor-boat should be wanted to go faster than another, had been convinced of the value of motor-boat racing. The competition for the Harmsworth Cup would settle the question of motor-boat racing in this country.

The Dangers of Sport.

COUNT ZBOROWSKI'S fatal accident has drawn attention to the dangers of sport—dangers which are apparently incidental to every pastime and which are perhaps minimised to a greater degree in automobilism than in any other form of sport. Football, cricket, hunting, steeplechasing, rowing, have all their risks, and a glance at the career of Mr. Thomas Pickernell, the famous gentleman jockey, who now lives in retirement near Birmingham, is a remarkable testimony to the seriousness of the disasters that may befall sportsmen. In one race Mr. Pickernell broke his thigh, and ever afterwards one leg was $2\frac{1}{2}$ in. shorter than the other. Subsequently he broke both his wrists, fractured one of his elbows, broke his collar-bone in two places, dislocated his shoulder, sprained his ankle, injured his back, was ten or a dozen times rendered unconscious, had his jaw broken in three places, lost the sight of one eye and injured that of the other. We merely recall this fact to indicate that automobilism is no more hazardous than other sporting pursuits.

Wolseley Developments.

IN our issue of February 14th we announced that Messrs. Vickers, Sons and Maxim, Limited, were about to commence the manufacture of motor-cars at their works at Crayford, Kent. We are now able to mention that this step will be taken without delay, and that under the supervision of Mr. H. Austin a two-seated voiturette on the familiar Wolseley lines will be introduced. This will have two speeds and a reverse, and will weigh about 8 cwt. So that the voiturette may be placed on the market at a reasonable price, a thousand vehicles have been put in hand and deliveries will be commenced about July. The Wolseley Company has just received an order for two 10-h.p. cars of the wagonette type for the Metropolitan police authorities. These will be used for official work in and around London.

The Police and the Car.

ONLY a fortnight ago we reported that the Chief Constable of Essex was conducting some investigations in his county, his progress from place to place being facilitated by the adoption of a motor-car. The news that the Metropolitan police authorities have now recognised the automobile and intend to employ it in the public service will be good tidings to Mr. Cathcart Wason, M.P., who has been attempting to incite the Home Office to establish a squad of police motor-cyclists. Developments are crowding thickly upon us, and now that the Prince of Wales pays ordinary calls in his car, and the Prime Minister does his round of social visits on the automobile, the universal adoption of the motor-car is only a question of time, and that not very far off.

Manufacturing in Quantities.

THE fact that the manufacture of motor-cars in large quantities—the numbers running beyond three figures—has been commenced on this side is evidence of the great advance for which the industry is preparing, and carriage builders in many provincial towns are now endeavouring to make up the position they have lost by ignoring the coming of the motor. Agencies are multiplying and garages rising in every locality. Verily the motor-car is entering upon the high road to Prosperity—with a capital P.

What next?

MOTOR fire engines, mail vans, ambulances, delivery carts, municipal vans and omnibuses are becoming the ordinary commonplaces of the streets. Official sanction has been given by the slow-moving War Office and the lethargic local authorities throughout the country. And now that the police are acknowledging the automobile we may expect to see a "motor Black Maria," thus popularising the automobile among a section of the population hitherto unreached by the new movement.

Motor-Cars on Show Grounds.

NOT often do we find Welshmen so unappreciative of the spirit of progress as are the members of the United Counties Hunters' Society, which has just decided that in connection with its show at Ystrad in August a charge of £2 will be made for the admission of motor-cars to the ground. It was said that at the last show of the society there were eleven motor-cars present and they were a nuisance. We should have thought that the presence of automobiles would have been welcomed, the occasion being made a fitting opportunity to accustom the horses to vehicles which will relieve certain classes of animals from much drudgery and many burdens.

Petrol Car Patents in the United States.

As an outcome of patent litigation there has just been formed in New York an association of leading American builders of petrol motor-cars, to be known as the Association of Licensed Automobile Manufacturers. All the members of the association have acquired licence under the Selden patent, and in addition all the patents owned by the various members will be pooled, and any member granted a licence under any one of these patents. The membership list, which at present comprises nineteen firms, is not yet closed, and it is intended to bring into the association all responsible and well-established manufacturers of petrol cars, as well as importers. The present members are the owners of about 400 patents on automobiles, which cover practically every part of hydrocarbon vehicles. The formation of the association is the outcome of the infringement suit brought by the Electric Vehicle Company in 1900 against the Winton Motor-Carriage Company and others for infringement of the patent granted

to Mr. George B. Selden, of Rochester, New York, in 1895, and for which application was made in 1878. The patent covers, broadly, the combination of a compression internal-combustion engine, of the liquid hydrocarbon type, running faster than the driven wheels, with a disconnecting device or means between the engine and the driven wheels, and the whole so disposed and arranged as to leave the upper part of the vehicle free for the conveyance of passengers or goods. The exclusive licence rights of the patent, purchased by the Electric Vehicle Company in 1899, are thus now controlled by the new Association of Licensed Automobile Manufacturers. In other words, it may be stated that the representative makers, after having seen a test case decided in favour of the validity of the patent, have agreed to recognise it, pay licence fees, and to pool their interests in order to compel all others to do the same.



Mr. H. A. Jones, of Sydney, N.S.W., and the Decauville Car which he has used in Great Britain and Australia.

Motor-Car Imports and Exports.

THE returns now available relating to the British imports and exports of motor-cars and cycles during March last show an increase as compared with the same months of last year, both as regards the imports and exports. To deal first with the imports, a new record has been established. no less than 571 cars and cycles being imported into this country last month, the value of the same being returned at £170,888. The value of the "parts thereof" is given as £35,408, so that we get a combined total of £206,296, as compared with £94,735 in February last and £70,513 (representing 255 cars) in March, 1902. Some of the imports were only of a temporary character, being reshipped to foreign destinations. Thus last month the reshipments comprised fifteen vehicles, amounting in value to £7,370, and £2,120 of parts, bringing down the net imports in March to £196,806, as against only £65,791 in the same month a year ago. For the first quarter of the year, the net imports of motor-cars, cycles, and parts stand at no less than £447,966, or almost treble those during the same period of 1902. As regards the exports of automobiles of home manufacture, the shipments during the past month amounted to 54 vehicles of a value of £15,303. Of parts the exports attained a value of £3,799,

making a combined total for March of £19,102, as compared with £26,229 in February last, and £5,576 (representing fifteen vehicles) in March, 1902.

New Motor-Car Works at Burton-on-Trent.

THE large new motor-car building works of the Ryknield Engine Co., Ltd., at Burton-on-Trent, were officially inaugurated on Thursday. The company was formed in February, 1902, with a capital of £30,000, of which about £20,000 has been called up. A speciality will be made of light delivery vans to carry from 1 ton to 30 cwt., while for pleasure purposes a 10 to 12-h.p. car driven by a vertical two-cylinder engine will be put on the market. This will follow the usual modern practice in general design though possessing several features of a distinctive nature. For next year it is intended to bring out a four-cylinder car of from 16 to 20-h.p. The works are located on an excellent site of about 6½ acres facing the main line of the Midland Railway, and about 200 yards from the station. They have been well designed to admit of easy enlargement at any time without interfering with the work in progress, and consist of seven bays having a total frontage of 120 feet and a depth of eighty feet. Needless to say the machine tools installed are all of the most modern type. The erecting shop is a lofty bay at the south end of the building, the extra height being provided to admit of a travelling crane, which will shortly be installed. There is also a roomy erecting pit running the whole length of the shop. Special attention will be paid to the system controlling the passage of work through the shops and the accurate recording of time and costs. This is an adaptation of the "card system" now so largely used in America, the object being to ensure an accurate record of the cost of every article manufactured with the least possible amount of clerical work. In this connection it may be mentioned that the time spent by each man on each piece of work will be recorded on a Calculograph, a machine of recent American invention which at the commencement of a job stamps on a card two dials, and on the card being again inserted at the end of the job, stamps an arrow on each dial, showing with great accuracy the hours and minutes elapsed. With a view to obtaining the best class of employees, and to encourage them in their work a mess-room has been provided at the east end of the power house, in which a liberal supply of technical papers and magazines will be placed for their use. At the west end of the ground, close to the entrance, is situated the Repairs Department, consisting of a well-equipped repair shop, a "running shed," capable of holding about twenty cars, with an inspection pit running the whole length of the building, and a petrol store, where a large stock of petrol and lubricating oils and greases will be carried. The work throughout is of a most substantial description and reflects great credit on the various contractors.

Easter and the Southern Roads.

BRIGHT sunshine at intervals, snow clouds with biting showers, roads in fine but dusty condition, and plagues of cyclists, seems to sum up generally the motorists' Easter holidays. Policemen, except in one locality, were conspicuous by their absence, the weather, no doubt, being too cold for hiding behind hedges. The country was looking its loveliest, and the crowds of motorists testified to the wonderful progress made with this form of travel. Recognition between friends was almost impossible, as eye-shields were indispensable, and as most people had new cars and there is a certain similarity in them all, the reason for non-recognition was apparent.

At St. Albans.

SEVERAL motor-bicycles were observed resting against the railings of the old Abbey Church at St. Albans, and outside the Pea Hen Hotel, at one time, there were half-a-dozen cars, their owners sheltering from the snow that gave almost a wintry aspect to the scene, despite the brilliance of the sun that peered

forth on motor and horse alike. Taking advantage of the cheery morning North London motorists went into Hertfordshire in dozens, and many cars were heard hustling through the villages in quite as merry a way as went the stage coaches in the olden times. A run into the country almost any day reveals the coming ascendancy of the automobile.

The Inflation of Balloons.

MR. J. N. MASKELYNE and the Rev. J. M. Bacon have been for some time past carrying out a series of experiments with regard to the inflation of balloons. The new method consists of inflation by means of hot air, the air being heated by the vaporisation of petroleum. The apparatus for generating the hot air is carried in the car of the balloon. A trial took place on Saturday at Cold Ash, near Newbury, and demonstrated the success of Mr. Maskelyne's invention. A balloon of nearly seventy thousand cubic feet capacity was inflated by patent burners in less than an hour, the burners vaporising only a few gallons of oil. The balloon was then tested for its lifting power, and the test proved very satisfactory.

The Gordon Bennett Race.

THE eliminating test for the American Gordon Bennett team was held on the Long Island track on Tuesday last, as a result of which Messrs. Alexander Winton and Percy Owen on Winton's, and Mr. L. P. Mooers on a Peerless, will represent the United States. The French team will consist of two Panhard cars, driven by Messrs. Rene de Knyff and Henri Farman, and a Mors piloted by M. Henri Fournier. It is stated that the two French firms propose to hire a special steamer to convey the cars to Dublin and serve as a floating hotel and storehouse of parts and accessories in case of need. It is reported that in anticipation of Germany carrying off the Cup a course has been already selected for next year's race! The Duke of Mecklenburg has consented to offer his estate, affording a course of over 300 kilometres. Baron von Hammerstein, Minister of the Interior, is also said to have been requested to grant permission to run the race from the limits of Berlin through the Mecklenburg estate.

PONTEFRAC is to be the rendezvous of the Yorkshire Automobile Club to-day (Saturday).

A MOTOR omnibus has been put upon the road by the Hastings and St. Leonards Omnibus Company.

THE Scottish Motor Manufacturers and Traders' Association was formed at a meeting in Edinburgh on Tuesday.

WEDNESDAY, the 22nd inst., is the last day for receiving entries for the quarterly 100 miles trial of the A.C.G.B.I., to be held on the 24th inst.

THE Hon. J. Scott-Montagu has become President of the Southampton County Motor Club, which had its opening run to Beaulieu on Good Friday.

ALFRED DUNHILL, LIMITED, has been registered with a capital of £40,000 to acquire the business carried on by Mr. Dunhill, at Euston Road, N.W.

AMONG social news of interest to motorists is the announcement that a marriage has been arranged between the Hon. Ernest Guinness, second son of Lord Iveagh, and Cloe, daughter of Lady Russell and the late Sir George Russell, of Swallowfield.

THROUGH the enterprise of the Earl of Leitrim, tourists in the north-west of Ireland this summer will be able to traverse with comfort and pleasure a picturesque district of Ireland which is badly served by railways. There are now under construction at the works of Stirling's Motor Carriages, Limited, three motor coaches to carry fourteen passengers and their luggage, and capable of easily climbing the mountain roads of the north-west. The route to be served is about thirty-eight miles long, beginning at the Strabane Railway Station, and terminating at Rosapenna, which is a fine golfing district and furnished with a commodious and well-appointed hotel.

THE IRISH FORTNIGHT.

MR. ROGER WALLACE and Mr. J. W. Orde have been in Ireland during Easter looking after the organisation in connection with the race, and the Hon. C. S. Rolls was at Kildare on Monday, having journeyed thither by car and water. On his 7 h.p. Panhard he went from London to Holyhead—a distance of 280 miles—in 13½ hours' running time.

AMONG the firms on or near the course from whom petrol can be obtained are Messrs. Duthie, Large and Company, Athy; Mr. C. Church, Curragh Camp; Mr. Dennis Donohoe, Naas; and Mr. M. T. Woods, Newbridge.

IN Belfast the Northern Motor Company undertake motor-car repairs and also stock petrol. Motor-car spirit can also be obtained from Messrs. J. and J. Haslett, North Street, Belfast. The next town en route to Dublin is Lisburn, and our correspondent informs us that Mr. Barbour, who owns a car, would doubtless help in the matter of petrol. At Lurgan, Mr. William Jeffers keeps a small stock of spirit and would help in a difficulty. Messrs. Hegan and Co., Portadown, are agents for Pratt's motor spirit, and keep a stock. Travelling via Hillsborough and

Messrs. Wheatley's cup, and a trophy valued at £50 by the Royal Ulster Yacht Club.

As it is estimated that the road repairs in connection with the Gordon Bennett race will cost at least £1,000, it has been decided to open a supplementary subscription list, and Mr. Paris E. Singer has headed this with the sum of £100. The committee of the A.C.G.B.I. will be obliged if motorists who have not yet assisted this praiseworthy movement will send contributions of 10s. or more to Mr. J. W. Orde, club secretary, as early as possible.

THE special map of the Gordon Bennett course which Mr. R. J. Meeredy has had in preparation for some time past has been adopted by the Automobile Club of Great Britain and Ireland as their official map for the International race. This will be published about the end of the present month.

A SMALL group of sightseers, about twenty cars, and two policemen standing outside Humphrey's place in the Buckingham Palace Road, S.W., on Good Friday, was all the excitement attendant upon the weighing of the leviathans entered for the Gordon Bennett race. Several well-known motorists were present in mufti, and the weighing operations were superintended by Mr. Worby Beaumont and Mr. Lyons Sampson,



The Ruins of the Ancient City of Timgad.



The Trajan Arc de Triomphe at Timgad.

[La Vie au Grand Air.]

MOTORING IN ALGERIA.

Dromore to Banbridge, no petrol is kept in any of these places, but repairs are done by the Banbridge Engineering Co., or Banbridge Foundry Co. The next town is Newry, where both repairs and a supply of spirit can be arranged for, Messrs. Connor being agents. Should anything be required in the neighbourhood of Castlewellan Mr. R. J. Hudson, who is a private owner of a car, will help, and any repairs can be undertaken by Mr. R. Stevenson. Both these gentlemen reside in Rathfriland.

THURSDAY, July 2nd, has been definitely fixed as the date of the Gordon Bennett race, and Lieut. Mansfield Cumming has been informed that his car has been placed first on the list of cars held in reserve. Arrangements are being made to secure an adequate supply of petrol being in the country, and the improvement of the roads is shortly to begin, Mr. James Gordon Bennett being among the latest contributors to the fund raised for the purpose by the A.C.G.B.I. Negotiations are now proceeding with local landowners for the provision of a club enclosure on the Athy-Kilcullen road, a quarter of a mile south of the Ballyshannon cross-roads.

AMONG the prizes offered in connection with the Irish Automobile Fortnight, in addition to those previously notified, are a 200 guinea challenge cup given by the Dunlop Company,

assisted by the Club engineer. The process of weighing was a slow one, the cars having to be first emptied of water, petrol, etc., and then to be filled up again on the weighbridge, so that they could be driven off. The only car absolutely stripped for racing was one of the Napiers, the other two cars of the same make being in their ordinary fittings. The Star, a most creditable vehicle, and one from which much is expected, had its seats upholstered and scaled about 30 lbs. under the thousand kilos. The Wolseley 50-h.p. was also present, and certainly looked like a greyhound, the workmanship being very generally admired, although a general opinion was expressed that if perchance a little doggie should get underneath the car, then off would come the carburettor, which seems very near the ground indeed. The car did not stop to be weighed, the owner, Mr. Mansfield Cumming, having apparently become tired of waiting. Girling, the mechanic, started the motor, let in the clutch, and the car simply jumped away and was out of sight in a moment. It was after two o'clock before the weighing was completed, and then the "giants," in comparatively silent procession, were driven to the Club garage, where they were afterwards officially sealed, etc. The Napier cars weighed 16cwt. 3qrs. 2lbs.; 18cwt. 1qr. 10lb., and 18 cwt. 1qr. respectively, and the Star car, 19 cwt. 1qr. 15lb.

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THE VEEDER SPEED INDICATOR.

THE Veeder Manufacturing Company, which is well known for its Veeder cyclometer, has lately introduced the novel device for indicating the speed of motor-cars illustrated herewith. The Tachometer, as it is called, comprises two principal parts, the pump, consisting of a casing enclosing a paddle wheel mounted on a shaft, and the indicator, embracing a glass indicator tube, a scale and a reservoir. The periphery of the pump is connected with the bottom of the glass indicator tube by suitable passages or tubing, and the bottom of the reservoir communicates with the centre of the pump. The Tachometer is filled with a suitable liquid, generally coloured alcohol, so that when at rest it stands on a level with the zero mark on the scale at the side of the indicator tube. The surface of the liquid in the reservoir will be slightly lower than in the tube on account of the capillary attraction of the latter. When the paddle wheel in the pump is revolved, the centrifugal force draws down the liquid in the reservoir and forces it up in the indicator tube. The vertical height between the two surfaces will be approximately proportionate to the square of the speed of revolution. The connecting tubes or piping may be of any desired length, provided there is at all points an upward inclination from the pump to the indicator.

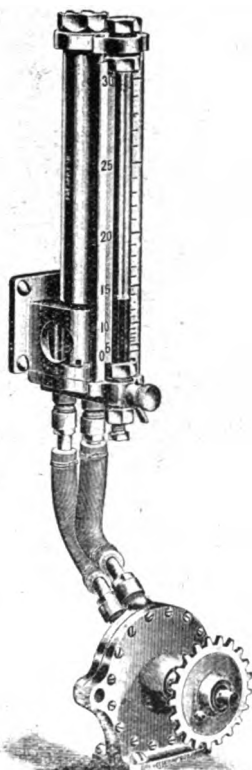


Fig. 1.—General View.

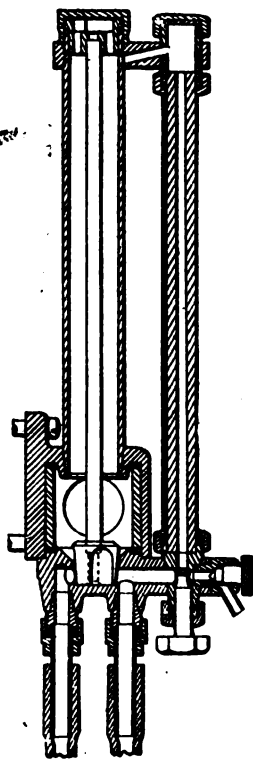


Fig. 2.—Sectional View of Indicator.

For convenience the reservoir is placed close to the indicator tube and communicates with the top of the latter, so that the instrument may be sealed to prevent evaporation, and if the liquid should be forced by excessive speed to overflow the top of the tube it will flow back into the reservoir. If the reservoir is placed in front or behind the indicator tube on a moving vehicle, then, when the speed of the latter changes, a change in level between the two surfaces of the liquid will take place on account of the inertia of the liquid and independently of the change due to the pump. A similar change will take place when the indicator is tipped to one side or inclined when the vehicle is going up or down a hill. These changes are, however, very slight, and in ordinary practice are negligible. They may be entirely overcome by making the axis of the reservoir concentric with the axis of the indicator tube. It will be seen that the instrument is extremely simple in construction, and can be made very durable, since the only wearing parts are the shaft and its bearings. To adjust the level of the

liquid to the zero mark on the scale the cap on top of the reservoir tube may be removed and the liquid poured in, or the liquid may be drawn off at the bottom by a suitable cock placed there for that purpose, as the case may require. The scales are graduated to show miles per hour and are of two lengths, 6 in. and 12 in. The shorter scales are used for maximum speeds of either twenty, thirty or forty miles per hour, and the longer scales of forty, fifty, sixty, or even higher speeds if desired. The scale shown in the illustration is a 6 in., and will indicate a maximum speed of thirty miles per hour. The pump is driven by suitable gearing either direct from one of the road wheels or from some shaft positively geared on the wheels. The ratio of the gears used depends on the size of the wheel and the scale desired. The indicator is intended to be placed on the dashboard.

HINTS ON DRIVING PETROL CARS.

A GREAT many people are about to receive or have just received petrol cars who are unfamiliar with their operation, and therefore, at the risk of repetition of much that has appeared in these columns, it may not be amiss to make some general remarks upon the handling of these vehicles. It is a part of the sport of operating a motor vehicle to do so in the most effective manner, for thus come into play the "head qualities" which impart to all forms of pastime the personal element, the cultivation and exercise of which add zest to the control of even purely insensate and mechanical creations. The man who drives a spirited pair gains his enjoyment partly from his sense of control over them, and partly from his exercise of skill in getting the work out of them most effectively and with the least wear and tear on the animals themselves. The man who sails a yacht enjoys the exercise of his skill in so handling matters as to take advantage of every condition of wind and sea, and thus covers the course with the utmost speed consistent with comfort and safety. In an exactly similar way the true automobilist gains as legitimate and genuine a satisfaction in so taking advantage of every peculiarity of the mechanism under his control and of every diversity of road surface and grade as to feel that the forces at his command are most efficiently applied with due regard to the endurance of the mechanism which is faithful to the motion of his hand, even to the point of its own destruction. This is the main pleasure of running a motor-car, apart from the change of scene enjoyed and the very elementary pleasure of motion.

Two men may take the same vehicle over the same course, in the same time, with all conditions identical, and one may use 50 per cent. more petrol than the other and at the same time boil the cooling water. The man who covers the course with a low petrol consumption and without overheating his motor will have the truer sport.

There are a few points which, while perfectly obvious to the practised *châuffeur*, are not necessarily self-evident. Perhaps the most important of all rules in the operation of petrol cars is this: Never allow your engine to run at a higher speed than necessary to do the desired work. This is the rule that, if carried out conscientiously, results in the saving of fuel, water, and the reduction of wear and tear to a minimum. The rule explicitly covers the handling of the engine controlling devices, and implicitly the handling of the gear changes. It seems very do-utiful, remarks Mr. A. L. Clough in the "Horseless Age," if any better arrangement could be devised than a foot-operated throttle, which is automatically closed to the position of minimum speed by a spring. In the use of the throttle it could be opened only just wide enough to give the gas necessary to do the work, and it is remarkable how much flexibility may be demonstrated to exist in a petrol machine by careful use of the throttle, if coupled with correct spark position.

In the control of the spark lies the opportunity for the exercise of much judgment, and there are very few who can regulate the ignition properly to secure the best economy by

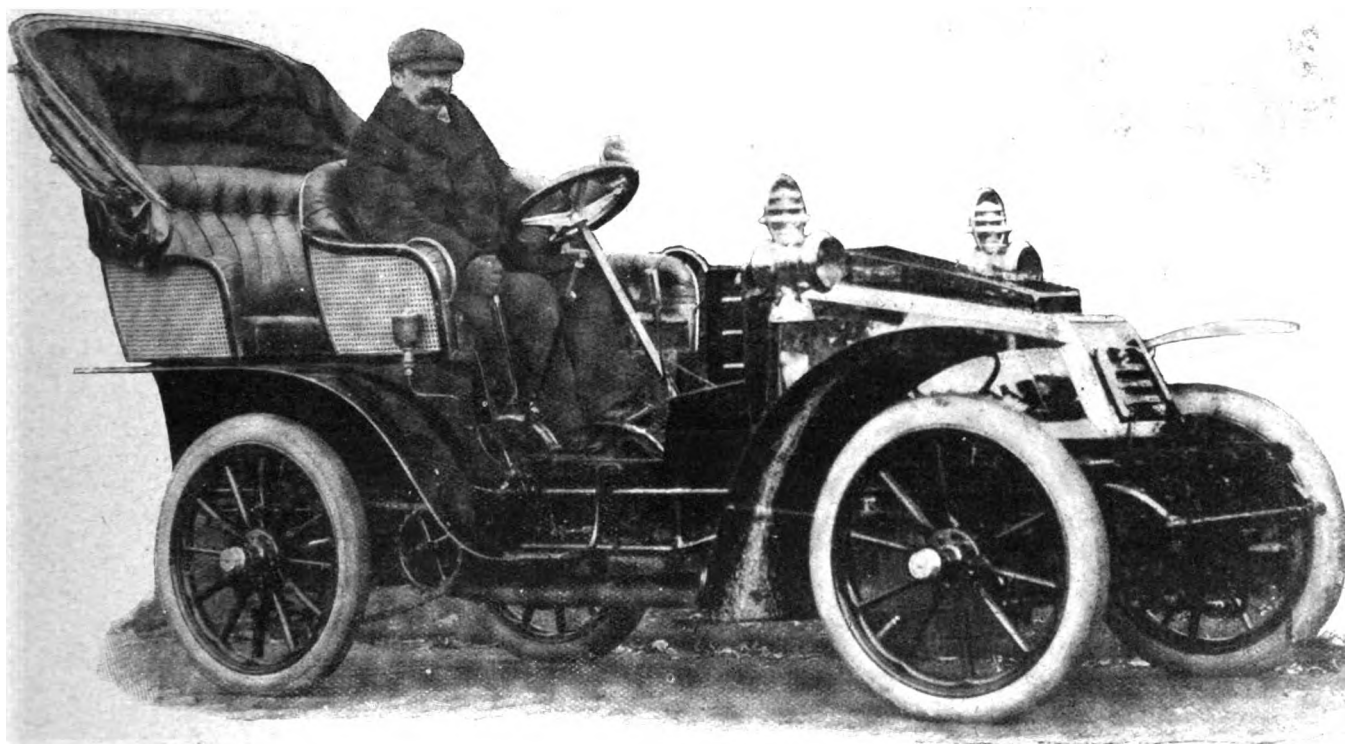
hand. An automatic device is very likely to become generally adopted in the near future to perform this function. Passable results can be obtained in ordinary practice by advancing the spark for a given throttle position as long as an increase of speed is obtained thereby, and nearly up to the point where the motor begins to show the results of an early spark in the sound or the "feel" of its operation. The sound of the exhaust is some indication of the correctness of the spark position, a very loud and prolonged exhaust being indicative of a late spark and a very light exhaust, coupled with a tendency to "pound," being a symptom of early ignition.

It should be obvious to every motorist that when the engine slows down under hard work on a hill, the ignition should be set at a later point than when the car is speeding freely on the level.

In the use of the change gear, the ordinarily accepted rule is to run as much as possible on the highest gear, in order that the engine and the gear train may make as few turns as possible in a given distance traversed, and thus a saving be effected in fuel, water, and wear and tear. Here should be mentioned what is probably the most important consideration in the running

the clutch is thrown in the motion of the vehicle is arrested with a severe and sudden jerk, which is hard for the mechanism of the machine and distressing to the passengers. Of course, if the engine begins to slow down unduly upon the second speed it will be necessary to resort to the third or lowest speed. What has been said in regard to the use of gears refers only to their use when the maximum of economy in fuel, water, and battery is sought after. If the greatest speed over a given course is the desideratum, the high gear should be relinquished when the engine has slowed down to such a point that the car is travelling at a speed no higher than it would run on the next lower speed, with the engine operating at full power. If one is trying to cover a hilly course in the minimum time there is opportunity for the display of considerable judgment in the throwing in of the different gears at the most advantageous moments. Everyone hopes that the time will come when there will be no changes of gear necessary in the use of a petrol vehicle, owing to the greatly improved flexibility of the engine and greatly increased "ability" of the vehicle which the future may afford.

In driving down hill there is opportunity for good judgment.



Sir Charles Forbes on his 30-h.p. Gobron-Brillie Car.

of a petrol motor-car—the taking advantage as fully as possible of the momentum of the vehicle. The rule might perhaps read: Never let your engine lose its speed when hard work is to be required of it, for if a motor is allowed to slow down too much when hard work is immediately ahead of it, it will only "pick up" with the utmost difficulty, if at all. A great many short though quite steep hills may be taken on the highest gear, if they are "charged" vigorously by running with full power over the level space at the bottom and thereby obtaining a powerful momentum. If the hill be so long or so steep that it cannot be taken on the high gear, a strong attack upon the grade with full power on may carry the vehicle well up toward the summit and require the use of a lower gear for only a short distance. One should stick to the highest gear until the motor slows well down and shows signs of commencing to "labour," and then the change should be made to the next lower gear as nearly instantaneously as possible, so as to lose as little of the momentum of the vehicle as may be.

One often sees motorists change from a high gear to a low gear without speeding the engine up, the result being that when

One should try both brakes very frequently in the course of a run to demonstrate that they are in working order. Neither should one forget that there is a third natural brake on every petrol carriage, namely, the motor. One can always reduce the speed of the vehicle to a low point by putting in the lowest gear and cutting off the gas from the engine by means of the throttle pedal or lever; the car will then hardly exceed a few miles an hour in speed under any conditions. If then the ignition current is cut off by means of a switch, the engine will act most powerfully as a brake and will take one safely down severe grades. If one comes to the crest of a long hill, down which an exhilarating coast is expected, it is a good opportunity to give the faithful motor a rest, and one may throw out the clutch, cut off the ignition current, and allow the motor to stop. This will save fuel and give the cool breezes an opportunity to play through the radiators, and perhaps keep the water from boiling. When the bottom of the hill is near at hand the current should be switched on and the clutch gradually applied, thus starting the motor. The only objection to this practice is that it is somewhat wearing on clutches.

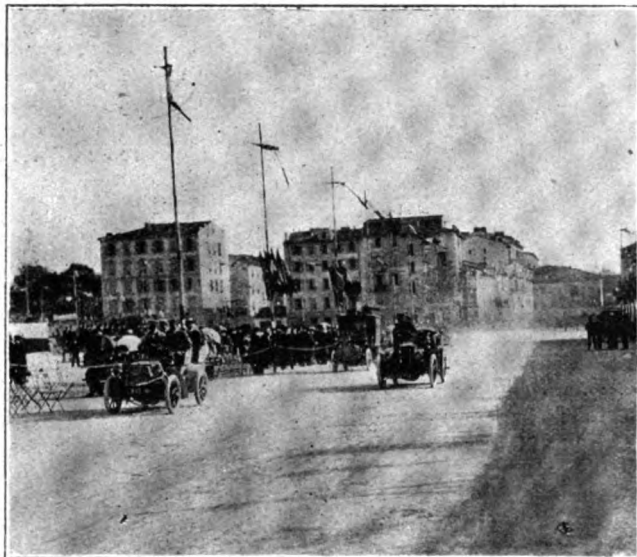
A handy little wrinkle to remember is that one can start a petrol car without having to turn the handle, if the vehicle has been left standing upon a hill of sufficient grade so that the car will start of its own accord when the brake is released. All one has to do is to turn on the petrol, switch on the spark, release the brake, and after the car has gained some headway throw in the clutch.

Every action connected with the control of a motor vehicle should be capable of being carried out without the intervention of the higher or reasoning faculties of the brain. In any

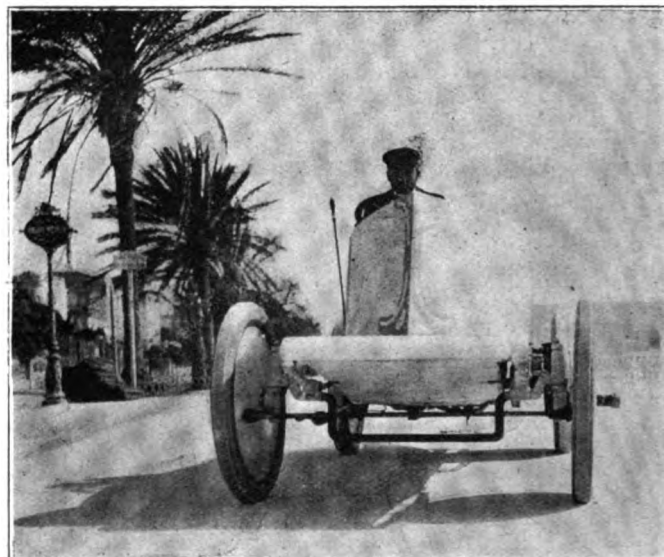
CONTINENTAL NOTES.

By "AUTOMAN."

THE Nice fortnight is over and has fizzled out ignominiously. Nothing could have been more unfortunate or in worse judgment than the proceedings of those in high authority. After having lost their heads completely and put a veto on the mile and kilometre races on the asphalt path of the Promenade des Anglais, at Nice, and allowing a good many of the competitors to withdraw and turn towards home, they added ridicule to



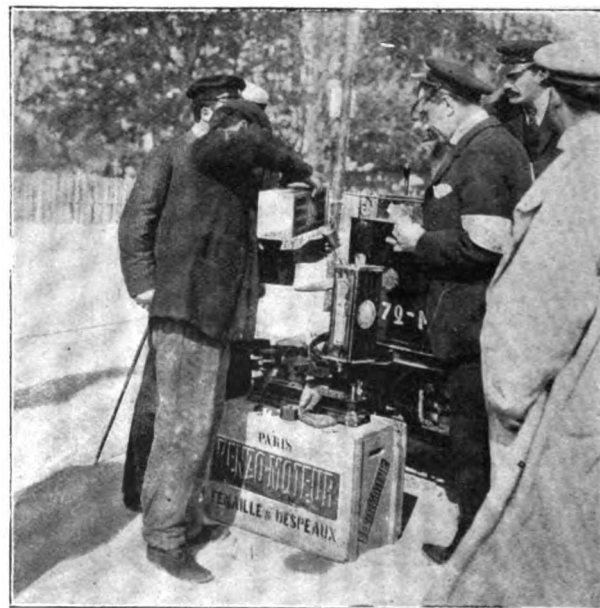
The "Concours au Bidon" (see last issue.)



M. Leon Serpollet on his new Racer.



The New Corniche Road from Cannes to St. Raphael.



The "Concours au Bidon"—Measuring the Petrol.

SNAPSHOTS AT NICE.

given emergency the response of the nerves and muscles which are to perform the act that is called for must be as certain and inevitable as the act of winking when a motion is made before the face. An operator who thoroughly understands his car in theory and practice, and who is conversant with the mode of operation of a petrol motor, if he has naturally a cool head and enough of the sporting instinct to make him take pride in the results achieved, will, when he has had an adequate amount of practice, be likely to become a good and safe driver of a motor-car.

their already unwise decision by going back on it and authorising the competition at the last minute under the condition that it should be run between five o'clock and half-past seven in the morning, and that there should not be a living soul on the road. I am at a loss to understand by what reasoning these two decisions were arrived at, and the results were amusing in the highest degree. At 4.30 a.m. the Promenade des Anglais was guarded by 300 soldiers with fixed bayonets and about as many police. Georges Prade and Hunziker, the timekeeper who replaced

Tampier, ran great risk of being arrested, and had to take refuge in the timekeepers' tent; whilst two ladies, who had the temerity to land on the shore from a boat, were bundled back into their barque at the bayonet's point—no doubt to prove to them that the sea, with all its dangers, was a fool to an automobile mile race on an asphalt track. If the cars had been infernal machines, no greater precautions could have been taken.

HERE, however, comes in the absurdity of the whole thing; for no sooner had the racing begun than all precautions fell to the ground, and with one common consent everybody invaded the Promenade des Anglais and crowded round, just as they do in every race. The Prefet himself was one of the worst offenders, and all question of law and order was absolutely forgotten and neglected. The officials seemed quite surprised that the cars could not go faster than they did.

SERPOLLET was the hero of the day, and won for the third and last time the Rothschild Cup, which is a challenge for the flying kilometre for two-seated cars, weighing from 650 to 1,000 kilos. Serpollet's time was 29.19 sec., as against his last year's time of 29.80 sec., and his speed was 123 kilometres 300 metres per hour (about 76½ miles). It is said that he was running carefully on account of the many warnings that he had received; but I should think for my own part that, if he was running carefully, it was to make sure of being able to keep the challenge cup and not have a breakdown, which would have put it out of his reach. M. Serpollet has run his last race, at least so it is said. I have heard him say several times that he would run no more after Nice, but there is no knowing what temptation he may have in the future. The steam cars had certainly the best of the flying kilometre. Le Blon was second on a Gardner-Serpollet, and then came a Mercedes, and after that Mors and Mercedes followed each other in almost regular order.

THE second Rothschild Cup for internal combustion motors was a victory for the Mercedes, Hieronymus, who drove the new 60-h.p. car belonging to Mr. G. Higginbotham, being the winner in 31.76 sec. He was followed by Werner, Braun, and Degrais; but none of the times were equal to Serpollet's in the first cup tests.

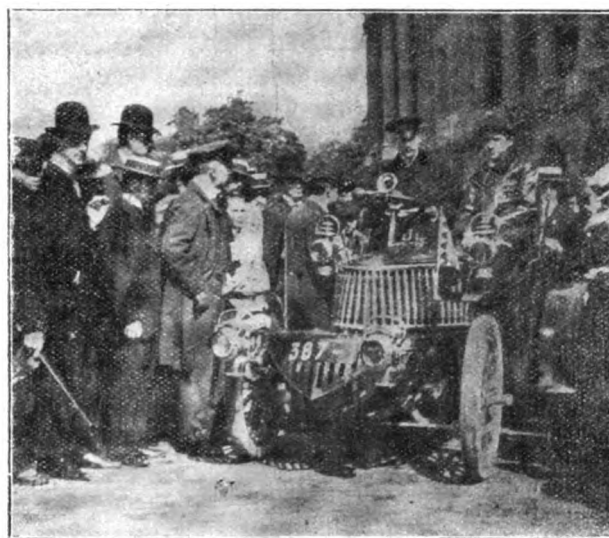
IN the mile race with the standing start the Mercedes were again successful, beating not only the Mors but also Serpollet. In the light car section, Baras had his own way on a Darracq, and had no competitors. In the motor-cycles, a Griffon, ridden by Genty, broke the record, attaining a speed equal to 101 kilometres 695 metres per hour. After the competitions were over, some trial records took place, and Braun, on a Mercedes, managed to do the flying kilometre in 30.79 sec., thus beating all the times as far as regards the petrol cars.

LAST Saturday was a great day on the Littoral. It was the inauguration of the new Corniche Road from Cannes to St. Raphael. This road has been built through the efforts of M. Abel Baillif, the President of the Touring Club of France, and it fringes the edge of the Mediterranean on those lovely shores, where the blood-red rocks make such a handsome contrast with the blue sky and sea. The Touring Club of France subscribed very large sums towards the building of this road, and it has been marked from one end to the other by signals denoting the dangers. Seats have also been placed at every point of vantage commanding the best views. The inauguration took place in the presence of M. Maruejous, Minister of Public Works, who was accompanied by the Deputy for the Department, the Prefets of the Var and the Alpes Maritimes, and also representatives of the Minister of the Interior. The whole party, with hundreds of interested spectators, formed a procession in motor-cars to open the road, which is certainly one of the most picturesque that can be conceived.

THE preparations for the Paris-Madrid race are going on steadily. It was feared at one time that the Turbie accident would, perhaps, put an end to all racing, but better counsels have prevailed, and although all sorts of people are supposed to have

prophesied the suppression of the great international race, every day brings forth a new official denial from someone or other.

FLOODS of ink are flowing on the subject of the unfortunate accident, and the most curious and extraordinary errors, blunders, and stories are appearing in the press and going the rounds of automobile circles. One of the leading automobile manufacturers, who has been trying to get a cheap advertisement for his own cars out of the sad event, informs the public that had Count Zborowski's car had a foot accelerator, the accident would not have happened. He blames the well-known Mercedes device on the steering wheel, by which the gas is shut off or opened. But here he drops into an egregious blunder, for he says that if you turn the steering wheel round, you turn the gas off or on as the case may be. This, of course, is not the case, as the regulation of the throttle valve is accomplished by changing the position of the hand lever on the steering wheel in relation to the steering wheel itself. This is accomplished by an internal screw inside the steering pillar, and as the lever is moved to the right or to the left, this screw raises or depresses the connecting link which works the slide in the carburettor. The turning of the hand wheel does not affect this in any way.



A Gillet-Forest Car outside the A.C.F., Paris.

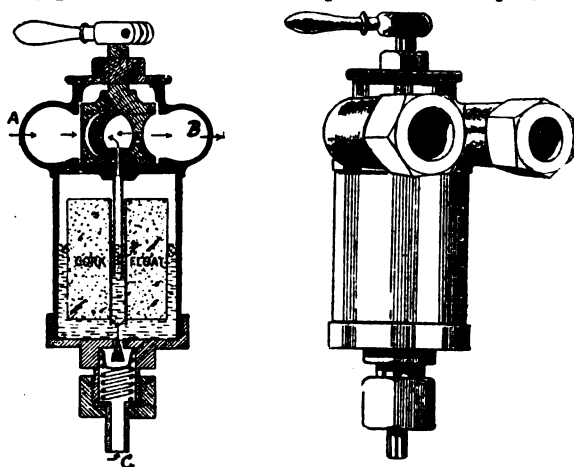
IN connection with the Circuit National which is being organised by the Belgian Automobile Club, the following programme has been arranged: May 9th, leave Brussels for Antwerp; May 10th, Antwerp-Liege; May 11th, Liege-Arlon; May 12th, Arlon-Namur; May 13th, hill-climbing and speed trials at Namur; May 14th, Namur-Brussels.

THE entry lists for the Circuit des Ardennes, to be held on the 20th and 21st June next, under the auspices of the A.C.B. and A.C.N.L., are now open. There is to be a special train leaving the northern station, Brussels, on the 19th June at 6 p.m. for Arlon, where the start of the first day's racing will take place. It will leave Arlon on the evening of the 20th at 6 o'clock for Bastogne, and will return to Brussels on the evening of the 21st after the races. Meals will be served in the train, and those who wish to have places reserved should apply to the A.C.B. without delay.

I SAW Mr. Gray Dinsmore's 60-h.p. Mercedes at the A.C.F. the other day. There is not very much difference from last year's model. The new clutch has evidently been abandoned and replaced by the old one, and the same seems to be the case with the speed-changing lever, which has the old lateral motion. There is, however, a thumb spring at the top of the lever which opens or closes the path into the reverse motion, so that instead of having to use both hands, as in the 1902 model, the thumb of the right hand replaces the left hand for reversing. The throttle valve is on the wing principle instead of the slide system.

MOTOR-CYCLING NEWS.

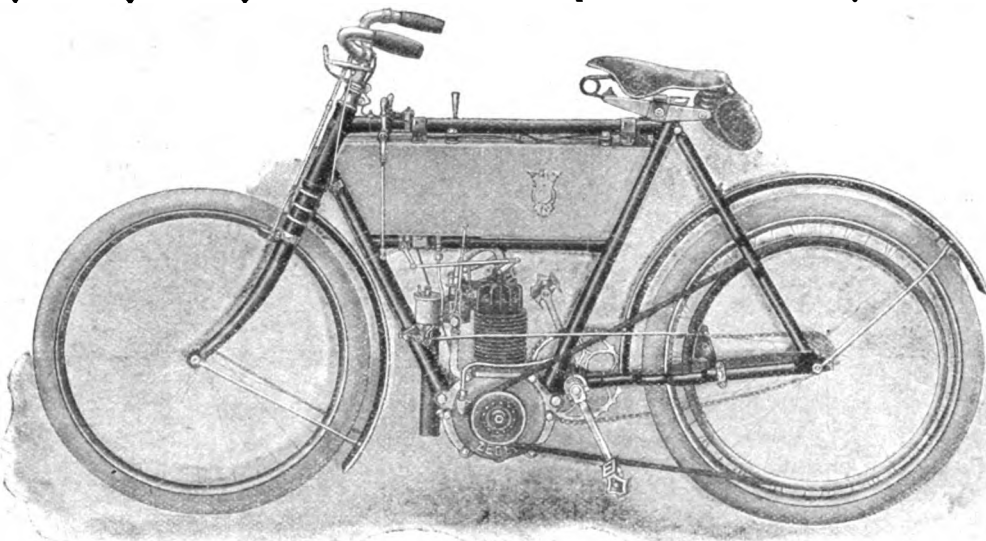
A COMPACT form of float-feed spray carburettor is used in conjunction with the new bicycle motor recently introduced by Messrs. De Dion, Bouton and Company. It will be seen that the float chamber contains a cylindrical cork float having a round hole pierced through its centre. At the lower end of this hole hangs, by means of a loose wire loop, a conical stop, so that as the float rises on the petrol the conical stop closes the orifice through which petrol enters from below. A spring observed just below this cone holds in position a wire gauze screen for the exclusion of impurities that might otherwise enter with the petrol along the pipe C. A tube fixed to the top of the chamber projects down-



wards about halfway into the hole in the centre of the float, its upper end terminating in a small hole in the upper chamber in the centre of the mixture valve actuated by an external lever. The operation is as follows:—The suction of the motor draws upwards from the float chamber a charge of petrol which is sprayed through the fine hole and mingles with the air drawn in at A into the upper chamber, the two combining to form the explosive mixture which is drawn through the induction pipe to the engine. The carburettor is made in brass, and is provided with a throttle valve to regulate the supply of gas. The lower portion of the casting unscrews, enabling the cork float to be removed, if necessary.

THIS week we select for illustration the new belt-driven motor bicycle known as the Star Griffon, which the Star Cycle Company, Limited, have lately introduced into this country. The air-cooled engine develops 2-h.p., and is built into the frame in a vertical position, just forward of the bottom bracket. An exhaust valve lifter is fitted, while the mixture is furnished by a Longuemare carburettor. The machine, which is of French manufacture, has a specially strong frame, and is equipped with rim brakes to both wheels. A large tank is fitted into the frame, affording large petrol and lubricating capacity.

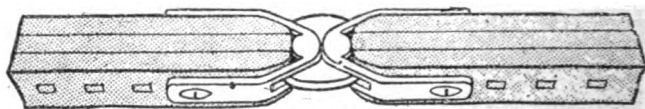
THE General Steam Navigation Company will convey the motor-bicycles of members of the A.C.G.B.I. free of charge, when accompanied by the owners, to Bordeaux, Ostend, Amsterdam, Hamburg, Rotterdam, Havre, and Edinburgh.



The "Star-Griffon" Motor-Bicycle.

ON Thursday last week, on the Canning Town cycle track, the motor-cycle match between H. Martin and F. W. Chase postponed from the previous Saturday owing to the wet, was concluded in favour of Martin, who won three events to his opponent's one. The Saturday event was a one mile standing start race, and Martin won by three lengths in 1 min. 34 2-5 sec. On Thursday, the 9th inst., Chase started well by taking the one mile flying start by a wheel's length, in 1 min. 20 sec., but the two races over five miles from standing and flying starts respectively were each won by Martin, who rode the first in 6 min. 55 4-5 sec., and the second in 6 min. 32 1-5 sec.

HEREWITH we illustrate the "Simplex" belt fastener which has lately been put on the market by Messrs. R. Herwin and Company, of Plumstead. It is specially designed for use with



Lincona and other wedged-shape motor-cycle belts, and, as will be seen, it consists of two steel clips bridged by a steel pivoted link. The clips attach to the ends of the belt by bolts.

THE Motor Cycle Advisory Committee of the A.C.G.B.I. has suggested a scheme for a new body to control motor cycling. This would be known as the Auto-Cycle Club, and would work under the control of the parent organisation, the committee being formed of ten members of the Automobile Club and eight representatives of the private members. For the latter the annual subscription is to be a guinea; for members of the A.C.G.B.I. five shillings. The objects of the new body will be the general advance of motor cycling and to obtain legal advice for the members through the Motor Union.

MOTOR-CYCLE races were included in the Easter Monday sports meetings on the Putney and Canning Town tracks. The Putney event was a five miles scratch race for machines up to 3-h.p., and for which Mr. Mark Mayhew had presented a silver cup. The race was won by T. E. Newman, who took the lead soon after the start, winning easily by three laps; F. E. Baker was second, being about two laps in front of H. Wingfield (third).

At Canning Town there were two motor-cycle events—a ten-mile scratch race and a five-mile handicap. H. Martin, on a 2½-h.p. Excelsior, won the former in 12 min. 56 4-5 sec. The five mile handicap resulted as follows:—H. Martin (10 sec. start) 1; T. H. Tessier (25

sec.), 2; H. Collier (25 sec.), 3. Time, 6 min. 33 1-5 sec.

A SPECIAL feature of motor-cycle races is to be made by the Midland Cycling and Athletic Club at its sports meeting on May 9th at Villa Park, Aston Lower Grounds, Birmingham. The programme includes a five mile handicap; a mile time trial for machines not exceeding 3-h.p.; and a three miles handicap for machines not exceeding 2-h.p.

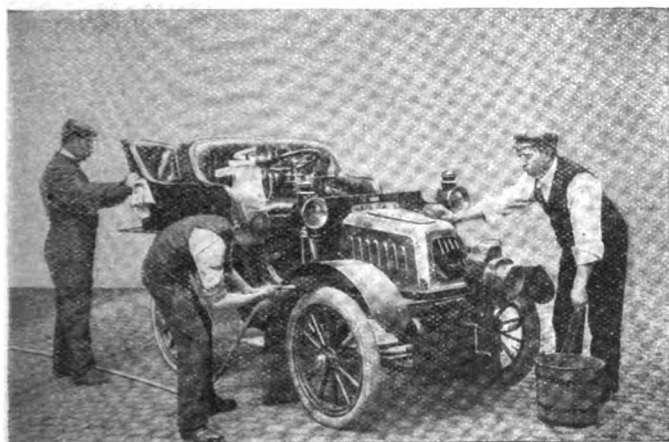
HERE AND THERE.

THE Manchester Automobile Club is holding a run to Chester to-day (Saturday).

MESSRS. MITCHELL, TOMS AND CO., of Chard, are adopting a motor vehicle for the conveyance of goods.

MESSRS. W. J. TRIMBLE AND SONS, Church Street, Dungannon, Ireland, are stocking petrol and becoming agents for motor-cars.

CLEANING requisites are an essential feature of the equipment of any well-ordered motor house. Mr. A. Dunhill makes a



A Necessary Operation.

feature of their supply, his outfit including everything down to the minutest detail.

THE bursting of the tyres of a car belonging to Mr. J. Plunkett, D.L., while touring in Co. Donegal, has caused the smashing of the vehicle and serious injury to the occupants.

A GARAGE and repairing establishment has just been opened in Cavendish Street, Birkenhead, by Mr. J. W. Fairbrother, who will keep a stock of petrol and spare parts.

THE Prime Minister has been the guest of Mr. Percy Wyndham at Clouds, near Salisbury, during Easter. He proceeded thither from town by motor-car.

THE Duke of Ratibor, president of the German Automobile Union, has issued a public warning to German automobilists cautioning them against fast and furious driving.

THE Automobile Club of Florence is organising a hill-climbing competition from Pontassieve to Consuma, in the Apennines, for the 11th June.

IT is announced from Paris that Messrs. Panhard and Levassor have served notice of action against the agents of the Mercedes cars for infringement of carburettor and differential brake patents.

AMONG the wild statements made at a meeting of London cabmen on Peckham Rye on Sunday was one to the effect that an American firm is about to place 3,000 motor cabs on the streets of the metropolis.

THE Lebaudy navigable balloon made two ascents at Moisson on Saturday, with excellent results. In the first attempt a journey of 19 kilometres at a height of 200 metres was made in 30 minutes.

WHILE visiting, on Bank Holiday, the George Hotel, Crawley—one of the most comfortable inns on the Southern roads—we saw a new 12-h.p. Darracq in the garage. This, we learnt, belonged to Mr. Ivan Caryll, and had been purchased at the late Agricultural Hall Motor Show.

THE annual meeting of the Automobile Club of Denmark was held on the 1st inst. The Club, which has now ninety-three

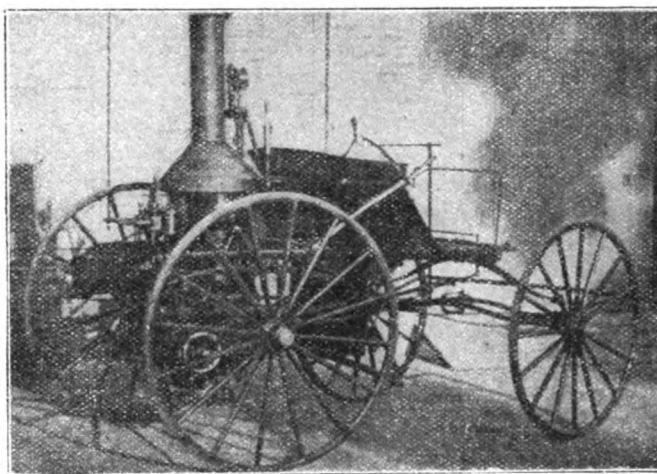
members, is organising a tour from Copenhagen to Stockholm in connection with the exhibition to be held in the latter city next month. In July or August an automobile tour of Denmark is to be held.

SPEAKING at the annual meeting of the Newcastle branch of the Lord's Day Observance Society, Alderman Sir W. H. Stephenson, the Mayor of Newcastle-on-Tyne, said that he recently spent a Sunday in a small Yorkshire town. Looking from the window of the hotel where he was staying, he counted no fewer than 12 motor-cars, all ranged in file in front of the main entrance to the hotel.

A MOTOR-CAR accident, in which several persons had marvellous escapes, has occurred on Pokesdown Hill, near Bournemouth. A motor-car was conveying some eight passengers from Bournemouth to Christchurch, and when descending Pokesdown Hill at a good pace one of the front wheels suddenly collapsed, the car swerved into a bank, and, turning over on its side, threw the passengers out with some force. The driver had the worst fall, the passengers escaping with only a severe fright and a shaking. The motor-car immediately caught fire and was much damaged. Members of the ambulance brigade were passing at the time, but fortunately none of the passengers required assistance.

DAYTONA, a popular seaside resort in Florida, has, as one of its attractions, a stretch of flat sandy beach several miles long, on which a three days' "Automobile Tournament" was held on March 26th, 27th, and 28th. On the first day Mr. Alexander Winton, on his "Bullet," covered a mile in fifty-six seconds; Mr. H. T. Thomas, on an Oldsmobile, in 1 min. 8 4-5 sec., and Mr. Oscar Hedstrom, on an "Indian" motor-bicycle, in 1 min. 15 2-5 sec. On the third day Winton covered the mile in 52 1-5 sec., and 10 miles in 10 min. 26 sec. Thomas' best time was 1 min. 6 3-5 sec., and Hedstrom's 1 min. 3 1-5 sec. The Oldsmobile used in the trials was a curious-looking vehicle, consisting merely of the chassis with a single seat projecting behind the rear axle, the steering wheel being almost vertical.

PARTICULARS of early motor-cars continue to reach us from all parts of the world. The accompanying illustration shows a steam car built by a doctor at Racine, Wis., U.S.A., in 1872. As



An Early American Steam Car.

the "Horseless Age" remarks, pneumatic tyres were then unknown; nor was oil available as a fuel to produce power, coal having to be employed. A steam car was also built in 1880 by Mr. William Siefker, of Seymour, Ind. It ran on 30-inch cast-iron wheels, had a 14-inch fire-tube boiler, 36 inches high, with twenty-one 1 1/2-inch flues and two separate engines, one for each wheel. Coal was used as fuel, and a speed of ten to twelve miles an hour was attained on good roads.

At the Red Hill Farm, Edgware, Mr. J. J. Walker has accommodation for a score of motor-cars.

On Saturday next, the 25th inst., the Western and Eastern Sections of the Scottish Automobile Club will hold a run to Callander.

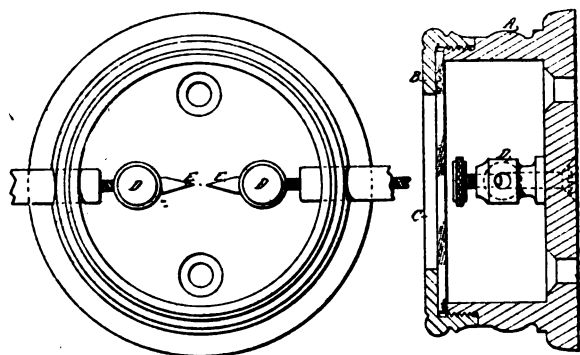
THE ALGERIAN AUTOMOBILE CLUB, which held a series of kilometre tests recently at Ain-Taya, is organising a 100 kilometre road race for the 1st May.

MANY private owners of motor-cars lent their vehicles to the Dutch Government for temporary service during the recent railway strike in that country.

THE exports of automobiles and parts from the United States during February last showed a marked increase, the figures being £12,644 as against £6,900 in February, 1902.

THE Paris municipal authorities have invited designs for a motor dust-cart, and will, it is reported, place an order for thirty vehicles with the firm whose design is selected.

THE sparking plug "discovery" is now attracting attention in the United States, and several devices providing an external gap in the high-tension circuit have already made their appearance, one of them being shown in the accompanying illustration. As will be seen, it is intended to be fixed on the dashboard, and consists of a cylindrical wooden box A with a wood cover B, provided with a glass window C. Within the box are arranged



two binding screws D, to one of which a wire from the coil is attached; while from the other runs a wire to the plug. Copper tips E, with sharp points, are soldered to the ends of the wires which project through the binding screws. The distance between the points of these tips can be adjusted, as will be apparent from the drawings. The device is made by Mr. Chas. D. Shain, of 70, Murray Street, New York.

THE Cantor Lectures, commencing on the 27th inst. at the Society of Arts, will deal with mechanical road carriages. Mr. W. W. Beaumont is the lecturer.

CATCHING sight of a motor-car at Aden, a camel uttered a piercing cry and went mad on the spot. "Just like a Surrey policeman," observed the motorist, cynically (if the *Globe* is to be believed), as he eyed the gesticulating animal.

AN electric motor-car, capable of attaining a speed of eighteen miles an hour, with a full complement of ladders for salvage purposes, has this week come into use experimentally in connection with the Vienna fire brigade.

MR. W. G. ROBINSON has just opened a garage and engineering works immediately behind the Imperial Hotel, Claremont Park, Blackpool, a seaside resort which is not too well supplied with establishments of the kind.

THE Paris Municipal Council has accepted the design for a motor watering cart sent in by a well-known firm of automobile builders. The vehicle is expected to be ready to commence operations this summer.

MULLINER'S, LIMITED, has been registered with a capital of £50,000 to acquire the business of coach-builders, engineers, etc.,

lately carried on in Birmingham by the Mulliner-Wigley Company, Limited, and to develop the same.

AN automobile tour from Chicago to Mammoth Cave, Ky., has been arranged by the Chicago Automobile Club. Forty cars have already been entered. The start will be made on June 25 and the return on July 7. The round trip will be about 1,500 miles in length.

THE word "automobile" appeared for the first time in the United States Post Office Appropriation Bill adopted at the last session of Congress. It was a Senate interpolation into the section providing for "horse hire (or automobiles) allowance 750,000 dollars (£150,000) in the city free delivery service."

MESSRS. JOSEPH COCKSHOOT AND COMPANY, LIMITED, the agents for the Stanley steam cars and Northern petrol vehicles, have opened large new premises at Great Northern Arches, Deansgate, Manchester. They include a show-room, repair shops, and an extensive garage.

A GLANCE at some of the catalogues issued by firms supplying motorists with equipment is interesting. Messrs. Gamage's catalogue, for example, gives illustrations of ear guards, with springs for securely fixing around the head, a simple little device illustrative of the care with which they seek to make their motor department comprehensive even of the minutest detail.

CONCERNING our recent note on the subject of little refinements, we are reminded that two of the items we referred to already receive attention on the Duryea cars, for a screw is fitted in the bottom of the carburettor which can be taken out in a few seconds by the fingers and the float-chamber emptied. The strainer to the petrol tank serves also as a gauge, and the exact amount of petrol in the tank can be seen at a glance.

MESSRS. JOHN CHILD MEREDITH, LIMITED, have sent us a sample of a spark intensifier they have just brought out. It is used as a terminal on the end of the high tension wire, making a very secure end. To attach the device the insulation is cut away about $\frac{1}{4}$ inch from end of wire. The wire is then inserted on the terminal so that the end of the cable comes within $\frac{1}{8}$ inch of the adjustment screw, when the latter is screwed down to its full extent. The length of the jump can then be adjusted by the adjustment screw.

MR. G. H. OLLIVER'S notes on the management of the Serpollet Steam Car, published by Messrs. Hiffe and Sons, Limited, have now reached a second edition. Seeing that it is little more than a year ago when the first edition was issued, the popularity of the work is already assured. It deals with the various features of the car, and also gives some accurate diagrams of the various connections, which should be much appreciated by the novice. Miscellaneous hints, and a series of questions which are likely to occur in the management of the steam car, conclude a very useful book.

A DETACHABLE roller chain for motor cars is the latest production of the Whitney Manufacturing Company, of Hartford, Conn. The chain is detachable at any point and can be taken apart quickly and without difficulty when it is necessary to repair or shorten it. Only the outer plates on one side of the chain are riveted over. The side plates on the other side are simply placed on the rivets. They cannot, however, turn on the latter, because of the irregular shape of the holes, while they are held in position by thin plates of spring steel in which is a slit to allow them to be forced on the rivets.

FROM Messrs. Charles Letts and Company we have received a copy of the Autocar Log Book, with patent self-opening memo tablet and a £500 accident insurance policy. It also contains a list of towns in Great Britain, with leading hotels, motor-car repairers, petrol agents, etc.; a handy distance tablet, showing the number of miles of the principal suburban and other places from London; some selected routes; hills, with their approximate gradients, and a number of pages for notes of engagements, cost of maintenance, registration of mileage, etc. A page of first-aid hints in emergencies is not the least useful one in the little volume, which is neatly and strongly bound, and of a convenient size for the pocket.

The Motor-Car Exhibition at the Agricultural Hall.

(CONCLUDING NOTICE.)

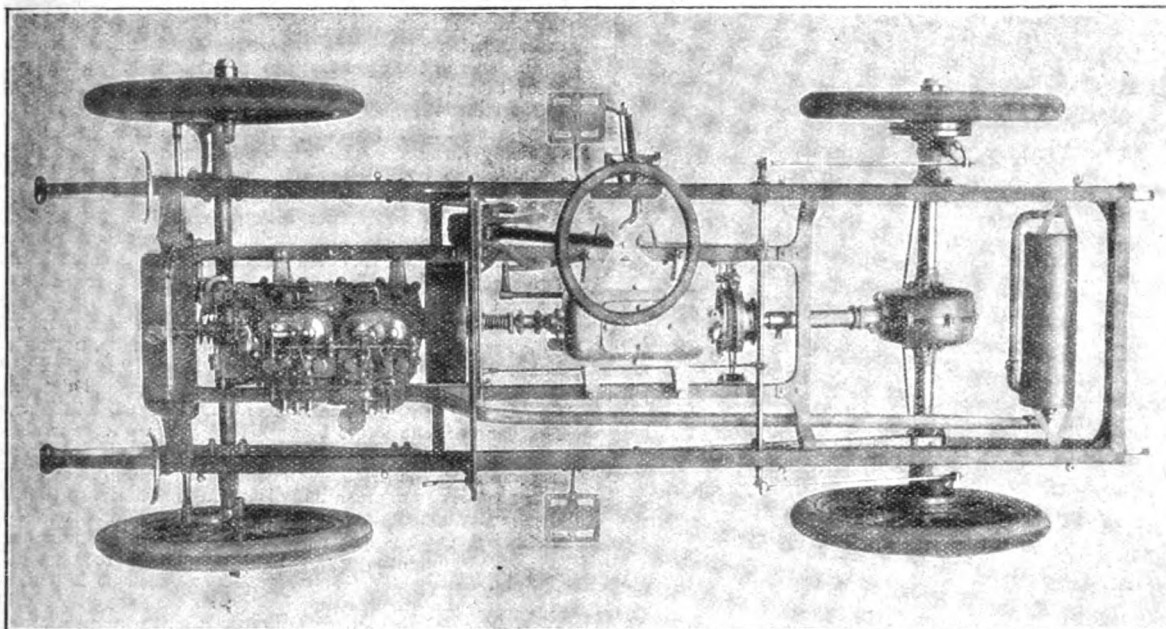


Fig. 62.—Chassis of the Clement Car.

With the present issue we conclude our review of the recent Motor-Car Exhibition at the Agricultural Hall, London, an event to which the trade had been looking forward as the Business Show of the year. Such it undoubtedly proved, and even within the last few days orders have been received by several firms as the culmination of inquiries first made at the Exhibition.

The BRITISH AUTOMOBILE COMMERCIAL SYNDICATE, as will be seen from the general views we have published, had a most elaborately-decorated stand, which caught the eye in whatever part of the Large Hall one might be. Not only were the decorations of the stand attractive, but the cars

jackets are all cast in one piece with the cylinders, so that there are no water joints. The crank case is of aluminium and the bottom part is removable by six nuts; on this being detached the whole of the crank shaft, together with the piston, can be taken out. There is an opening for each pair of cylinders, which can be removed by undoing two nuts, permitting inspection inside the crank case. The engine (Fig. 65) is fitted with a centrifugal governor running in oil. The governor throttles the admission at 750 revolutions by actuating on three different points—it closes the

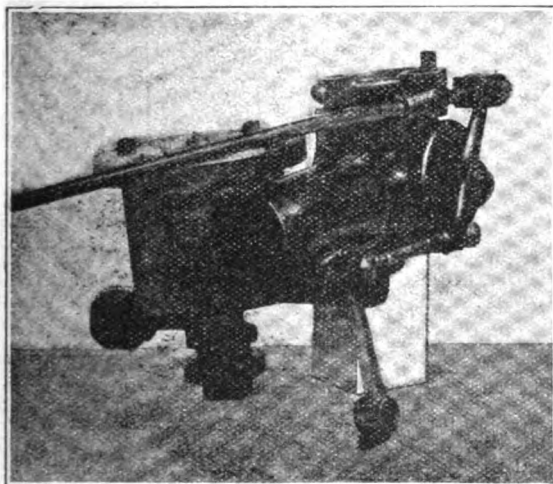


Fig. 63.—The Clement Carburettor.

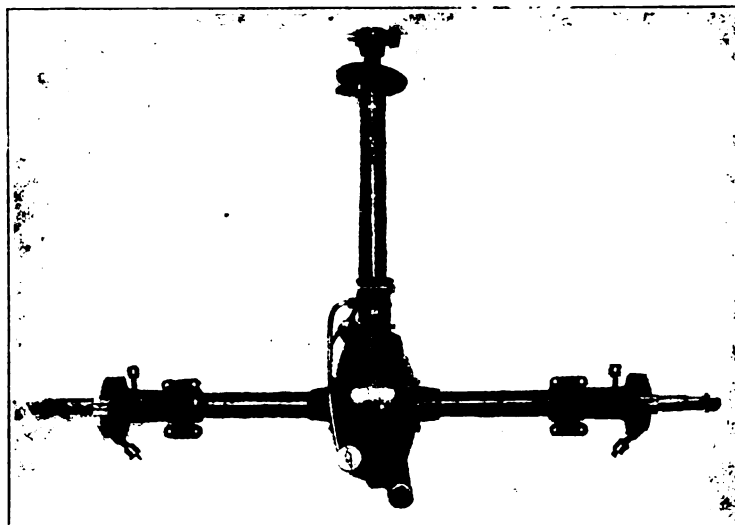


Fig. 64.—The Clement Cardan Shaft and Live Axle.

exhibited thereon were finished in a most sumptuous style. Only two makes of vehicles were shown—the Clement and Panhard. For the 1903 season the Clement cars are made in the following sizes:—9-h.p., two-cylinder; 12-h.p., four-cylinder; and 18-h.p., four-cylinder. The dimensions of the cylinders are: 9-h.p., 85 by 120 mm., developing 11-h.p.; 12-h.p., 75 by 120 mm.; and 18-h.p., 85 by 120 mm., the latter giving 24-h.p. The cranks are forged in one piece and are supported on two outer bearings and one centre bearing. To obtain access to the pistons, the cylinders are removable in pairs by undoing six nuts. The water

inlet to the engine, the air port to the carburettor, and also the carburettor jet. The admission valves are mechanically operated off the same cam shaft as the exhaust valves. To remove the valves all that is necessary is to remove a large nut placed on top of the cylinder. The ignition is by magneto, driven from the engine by spur gearing. The shaft carrying the contact breakers runs horizontally over the top of the cylinders, and is worked by a vertical shaft placed directly in front of the engine, and actuated through worm gearing. The carburettor (Fig. 63) is of the float-fed type; it is automatically regulated by the governor, and in accordance

with the speed of the engine, the jet, the inlet, and the air port are automatically opened or closed. The four-cylinder cars are fitted with a combined water-tank and cooler of the honeycomb type, with fan. The pump is driven direct from the motor by spur gearing. Forced lubrication is adopted, this being effected by water pressure, the lubrication immediately ceasing when the engine is stopped. In the two-cylinder car there are

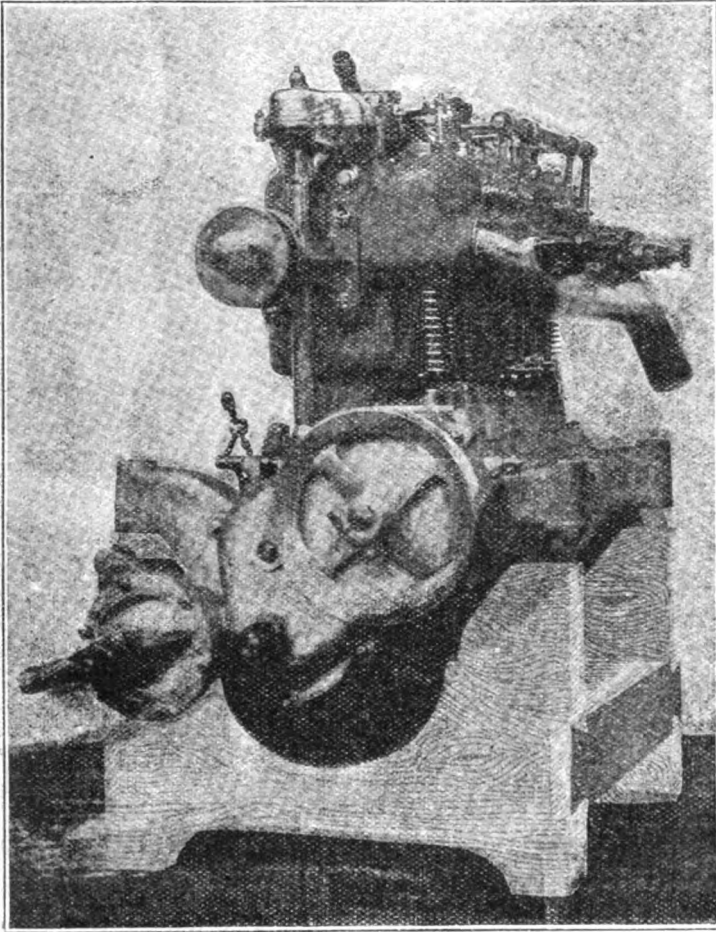


Fig. 65. —The Clement Four-Cylinder Motor.

three speeds forward and reverse, while the four-cylinder car has four speeds forward and reverse. The change-speed gear on its first three speed is actuated on the ordinary Daimler sliding system. On the top speed the motor drives direct on to the back axle. The transmission from the change-speed gear to the back axle is by a longitudinal shaft and bevel wheel, the shaft being contained the whole of its length in a phosphor bronze bearing. Instead of having a universal joint at each end, it has only at one end, near the change speed box, a large single ball joint. A pedal controls a specially-constructed metallic band-brake on the main shaft, carrying contact shoes. The brakes actuated by the side lever are of the expanding type, working inside drums on the back wheels. The rear axle is contained in a hollow sleeve, and is held on four anti-friction bearings. Having now briefly dealt with the leading mechanical features, reference may be made to the special bodies fitted to some of the cars exhibited. We first inspected an 18-h.p., fitted with a double phaeton body and canopy, of a type which is to be known as the "Roi d'Angleterre." The principal feature is the novel way of entering to the rear seats. The left front seat is so connected by sliding joints to the front half of the lower panel, which acts as a door to the rear seats, that by pulling open the latter the front seat is swung round. Another 18-h.p. Clement was fitted with a "Vanderbilt" limousine body to seat four inside, all the windows being arranged to let down. An ingeniously-arranged collapsible and sliding front seat for a mechanic is provided in case the owner should desire to drive himself. Passing now to the Panhard cars, of these several 10-h.p. and 15-h.p. vehicles were shown, one of the latter fitted with a Roi d'Espagne phaeton body, being particularly noticeable. Altogether the bodies shown on this stand, not only as regards the wood and aluminium parts, but also the upholstery and painting, were of the highest class, and reflect much credit on Messrs. Rothschild and Fils, the designers and builders. A specimen wheel, fitted with Corbet's side-slip preventer, was also shown on this stand. This takes the form of a steel disc or washer, the perimeter of which is the size of the motor tyre; it is fixed flat to the side of the rear wheels, and is secured by springs hooked to a ring permanently fixed to the spokes. The perimeter of the disc is fitted with a series of hard steel

segments, one of which bears on the road at a time. Should the wheel show any tendency to skid, the steel segments take a grip on the road, preventing the car from slewing round. We understand that the device has been tested on greasy asphalt and wood paving road with marked success. Mr. G. BRAULIK, who has taken up the English agency for the "Protos" motors and cars, exhibited a tonneau of this make fitted with a 8½-h.p. single-cylinder motor. The engine is fixed in the front part of the car on springs connected to the frame, and the power is transmitted through a clutch to the gear box and thence to the hind axle by means of a single centrally-located chain. Two speeds forward and a reverse are available, the arrangement of the change-speed gear being the same as that illustrated in connection with our report of the 1902 Exhibition at the Agricultural Hall. One of the chief features of the car is the arrangement of the hind axle; this is attached to springs connected to a frame which is in turn connected to the main frame-work at one point by a universal joint. This arrangement affords ample protection from breakages, due to heavy strains suddenly thrown on the rear axle by rough roads or impediments. Mr. Braulik also exhibited specimens of the "Protos" 3½-h.p. and 6-h.p. single-cylinder motors and 12-h.p. double-cylinder engine, the latter being equipped with a governor acting on the gas admission. A new three-wheeled light two-seated car, which is shortly to be placed on the market, was also shown on this stand in an incomplete condition. This will have two speeds and be driven by a 3½-h.p. engine placed in a vertical position under the seat.

The INTERNATIONAL MOTOR CAR COMPANY, LIMITED, had an exhibit which was the best this concern has so far made, not only as regards size, but in the quality of car displayed, the new "Portland" vehicles being a decided advance on the "Charette." In general design they follow the now usually accepted lines. The 6-h.p. car has a tubular steel frame with Aster motor, the latter being fitted with a governor acting on the inlet, and a gear-driven pump. Three speeds forward and reverse are controlled by one lever, the drive on the top speed being direct to a live axle. The rear part of the tonneau body is made separately, so that it can be quickly detached when desired. The 12-h.p. "Portland" car is built on similar lines, but is equipped with an Aster 12-h.p. double-cylinder governed engine. The 24-h.p. car of the same make is recommended to those who desire a vehicle that is speedy and an excellent hill-climber. Space will not allow of a detailed description; suffice to say that it is fitted with an Aster four-cylinder motor, four speeds forward and reverse, gear and chain drive, angle steel frame, electric ignition, latest pattern radiators, and a tonneau body with bucket seats in front. As to the speed qualities of the 24-h.p. car, we may mention that it is being sold with a guarantee as to its capability of attaining a rate of fifty miles per hour. The International Company, which has been fortunate enough to secure a number of 10-h.p. Panhard cars for early delivery, had also one of these vehicles on their stand.

In addition to their capital display in the Arcade, Messrs. GAMAGE staged their voiturette on a stand in the Main Hall. This is a two-seated car, with a 6-h.p. De Dion engine located in front, being placed somewhat low down on a secondary tubular frame, which is carried by the main

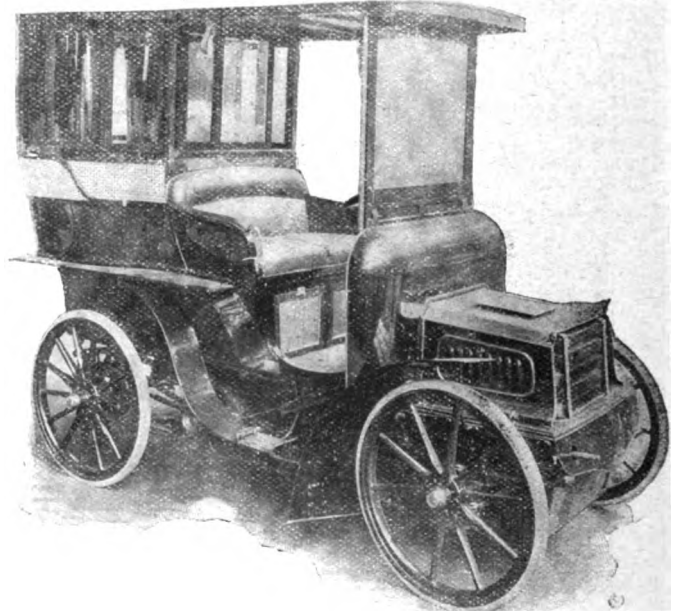


Fig. 66. —The Benz 10-h.p. Limousine. (See issue April 4th, page 91.)

frame, also tubular. A pedal-operated friction clutch connects the engine to the gear box. There are three speeds forward and reverse, operated by a side lever, the drive on the top speed being direct by shaft to a live axle of large dimensions. The wheel base is notably longer than usual. There are ample brakes, and in general outline the Gamage voiturette as a pleasing appearance.

An interesting display of the latest types of Mors and Renault cars was made by the ROADWAY AUTOCAR COMPANY, LIMITED. Of the 18-h.p. Mors vehicle a chassis was staged, but as we published an illustrated description of this so recently as our issue of the 21st ult., no further reference is necessary. Another Mors car exhibited was a 15-h.p. double tonneau with special Boulogne body. Passing to the Renault cars, we first

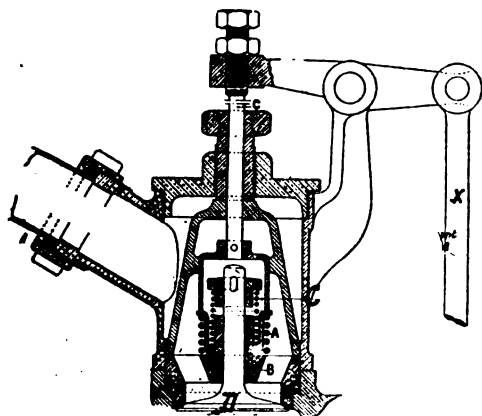


Fig. 67.—Section of Inlet Valve 10-h.p. Renault Car.

inspected the chassis of the latest 10-h.p. car. This has a tubular steel frame, in the fore part of which is located a two-cylinder motor of Messrs. Renault's own construction. The cylinders are 100 mm. diameter by 120 mm. stroke. The engine runs normally at 1,200 revolutions per minute, but can be retarded to 300, or accelerated to 1,400. The governor is adapted to act on the gas admission, while a new departure is the fitting of a device, actuated by a small hand lever, by means of which the lift of the suction

The valve stem moves in a guide carried by bridge pieces from the ring forming the valve seating. The lower end of the valve spring, instead of bearing on the shoulder on the guide, is supported by the inturned lip of the inverted cup referred to above. In the position shown in Fig. 67, the valve is acting normally; by depressing the outer end of the rocking lever the inverted cup is caused to rise in the guides formed for it in the bell-shaped chamber, carrying the lower coil of the valve spring with it, thus compressing the spring. The suction of the piston not being able to

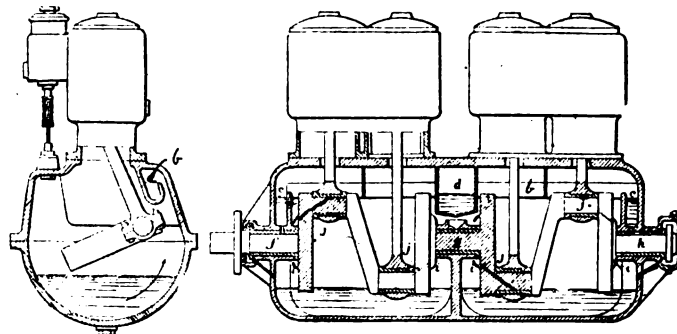


Fig. 68.—Section of Renault Four-Cylinder Motor, showing Lubricating Arrangements.

open the valve to the normal owing to the stiffer spring, the incoming charge is, consequently, reduced in volume, the explosion is weakened, and the speed of the engine reduced proportionately to the movement of the rocking lever. Three speeds forward and a reverse are provided, the change-speed gear being so arranged that, on the top speed, the power is transmitted direct, the countershaft being entirely out of action. The cardan system of transmission is of course still retained, but we noticed that a new type of expanding brake has been adopted. We noticed, too, that the rear

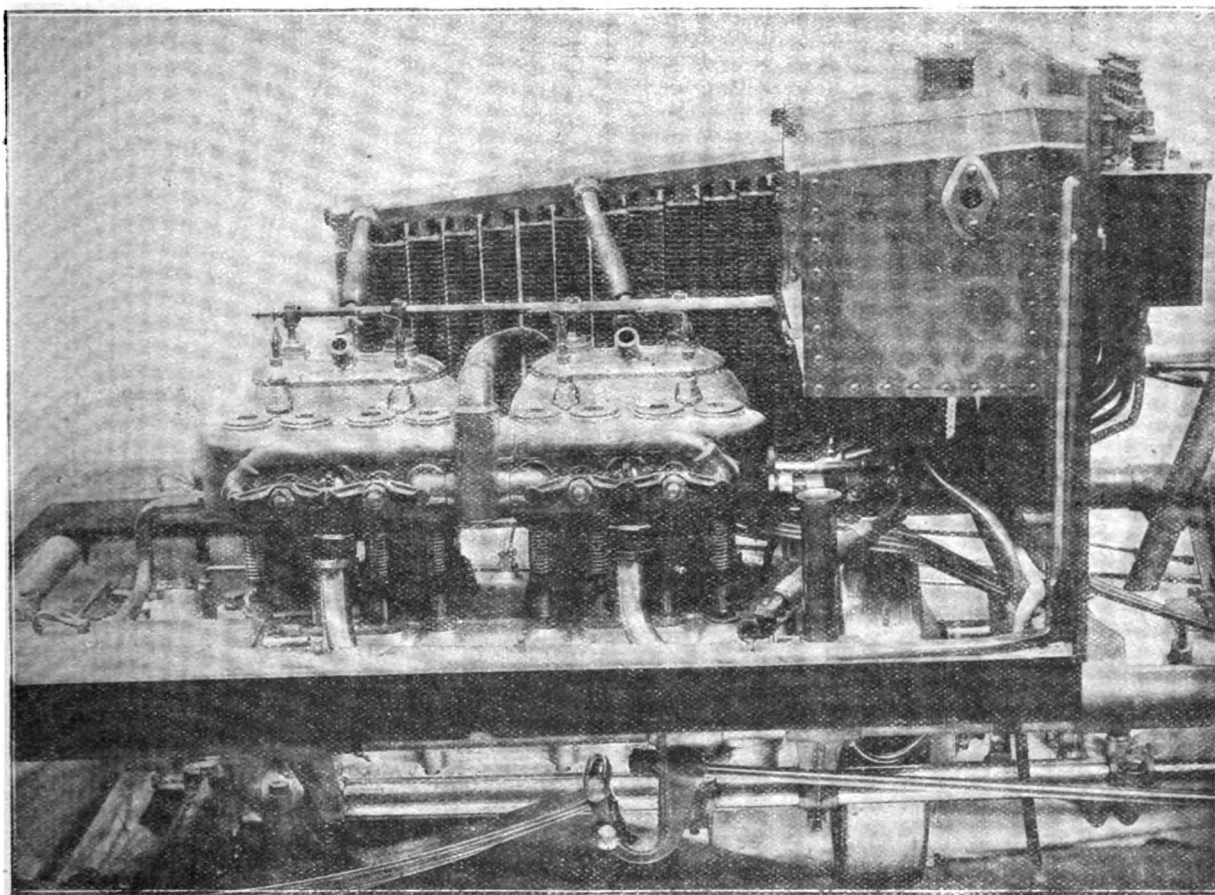


Fig. 69.—View of Motor of Renault 14-h.p. Car.

[La France Automobile.]

inlet valve can be varied and the speed of the engine, consequently, regulated as desired. A section of the arrangement is shown in Fig. 67, from which it will be seen that the inlet valve is enclosed in a bell-shaped chamber within the valve box, the bell enclosing in its turn an inverted cup attached as to its upper end to a lifting rod connected to one end of a rocking lever.

springs are not rigidly attached to the axle, but are attached to clips free to move round the latter, distance rods connected to the top and bottom of the differential case being provided, to keep the axle in position. Coming now to the Renault 14-h.p. car (Fig. 69), the feature of this is that the four-cylinder motor has mechanically-operated inlet valves located

on the same side as the exhaust valves, all being actuated by one cam shaft. As regards the gear and transmission, this is on the same lines as those adopted in the 10-h.p. car. Particular attention has been devoted to the question of the lubrication of the motor, the arrangement shown in Fig. 68 having been adopted. The oil is delivered from a Dubrule lubricator through a copper tube to the oil wells *c* formed in the upper part of the crank chamber. Thence it feeds by gravity to the crankshaft bearings in the ends of the chamber *h f*, from which a portion of it runs into circular catch fillets *i* formed on the outer and inner faces of the crank discs. Centrifugal force causes the oil to flow from these fillets through passages *j* to the crank pin bearings. The surplus oil drops from these and the crankshaft bearings into the crank chamber, and is thence directed on to the pistons and walls of the cylinders by the splashing from the connecting rod heads, which also throw the oil into the wells *b* (Fig. 68). Thence the lubricant attains the central oil well *d*, from which it drops into the cap serving the central bearing of the crankshaft *g*. In this way both gravity and centrifugal force play their part in the lubrication of the motor.

There are a number of special features in the Crouan cars which formed the exhibit of Messrs. C. ISLER AND COMPANY. The frame is of the steel tube type, strongly braced, and carrying in the forepart a double-cylinder horizontal motor (Fig. 71), the cylinders being placed opposite to each other with a central crank chamber, thereby greatly minimising vibration. The engine, nominally rated as developing 6-h.p., works up to $7\frac{1}{2}$ h.p.; the diameter of the cylinders being 96 mm. by 98 mm. stroke. A novel feature of the motor is that it is fitted with a self-governing ignition gear. The wiper of the commutator is self-governed by a spring, which allows it, when running fast, to rise, or when running slow to fall, and so come in contact with different segments of the contact-making surface. The mixture is

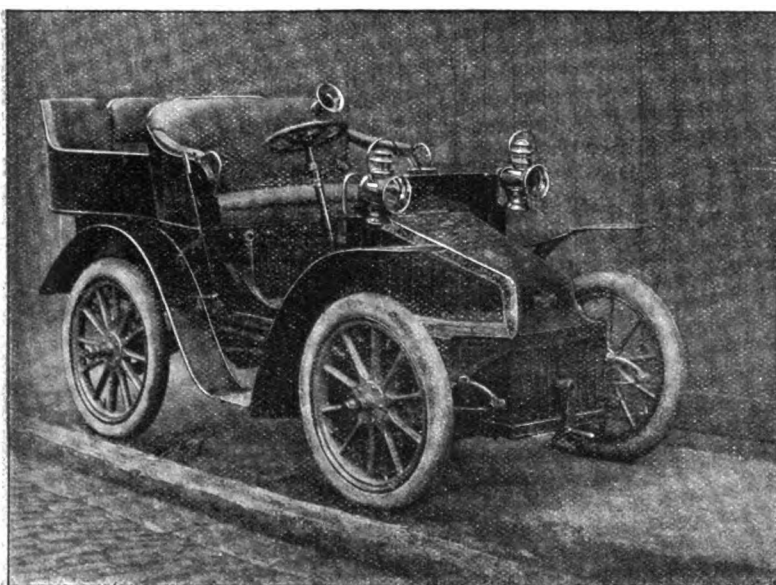


Fig. 70.—The Crouan Car.

supplied by a special carburettor patented in 1898, claimed to be similar in effect to the Krebs carburettor now being used on the Panhard car. In this the quality of the mixture is automatically adjusted to the speed of the engine. The water circulation for the cooling of the motor is on the thermo-siphon system. Coming now to the transmission, five speeds forward and a reverse are provided, these being all actuated by a single lever on the steering pillar, which also, by a vertical movement, controls the admission of gas, thereby regulating the motor from 150 to 900 revolutions per minute. The engine is connected to the gear box through a cone clutch, the power then being conveyed to the rear live axle by a universally-jointed shaft and bevel gear. Inclined wheel steering, hand and foot double-acting brakes, automatic lubrication to all parts from dashboard, are other features of the Crouan car, which is fitted with a tonneau body, built of sheet metal, on a wooden frame.

The BRITISH GERMAIN MOTOR-CAR COMPANY, LIMITED, made a big display of the well-known Germain cars, the exhibit comprising examples of the $7\frac{1}{2}$ -h.p. and 15-h.p. types. The small size is provided with two-cylinder engines, 95 mm. diameter by 130 mm. stroke, the normal speed being 800 revolutions per minute. Four speeds forward and reverse are provided, the countershaft being connected to the rear road wheels by side chains. Of the $7\frac{1}{2}$ -h.p. cars, a tonneau and a coupé (Fig. 73) were displayed. The two larger cars have four-cylinder engines governed on the inlet and covered by the latest type of square bonnet with the radiator in the front opening. One of the new features in the 15-h.p. Germain cars is the carburettor (Fig. 72) or rather an addition to the carburettor by means of which the quality of the mixture is automatically varied according to the speed of the motor. Referring to the sectional view of the apparatus (Fig. 72) it will be seen that it comprises a cylindrical body *B* covered by the screw-down cap *A*.

Within the cylinder *B*, and made an easy sliding fit therein, is a piston or plunger *C*, held up in the upper part of the cylinder by the coiled spring *D*. The suction stroke of the motor piston reduces the pressure within the cylinder *B* below that of the surrounding atmosphere, and the latter then takes effect upon the upper surface of the plunger *C* by means of the orifice *a*

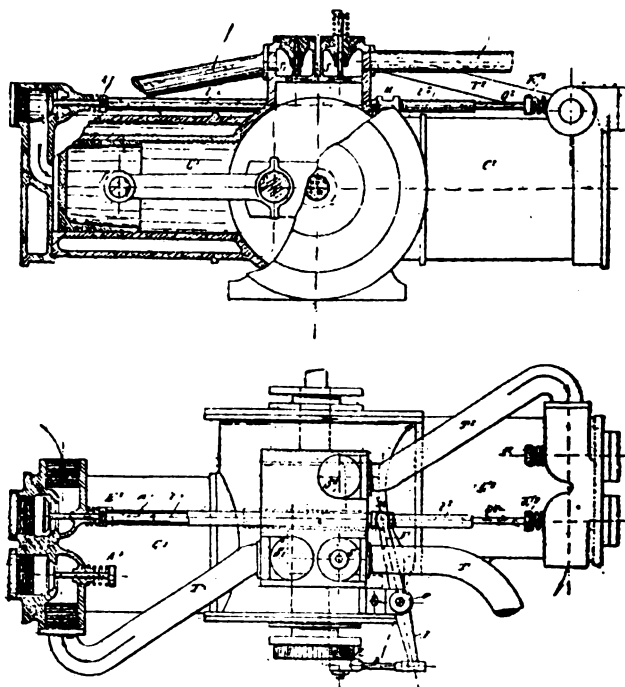


Fig. 71.—Part Sectional, Elevation and Plan of Crouan Motor.

in the cap *A*. If the pressure of the air on the top of the plunger *C* is sufficient to compress the spring *D*, the piston is thereby lowered until the triangular orifice *E* in its wall more or less coincides with the square orifice *F* formed in the side of the cylinder *B*, allowing more or less pure air to

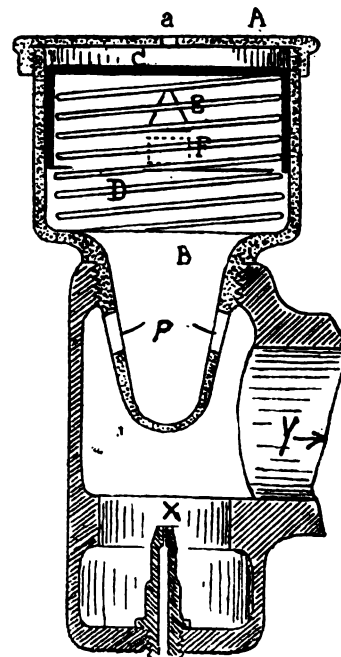


Fig. 72.—Section of Germain Automatic Carburettor.

enter *B* in proportion to the increased speed of the engine. The number, form, and dimensions of these orifices, as well as the strength of the spring, are determined by experiment, and regulated once for all so that at low speed no portion of the orifices coincide, and the carburation of the air is controlled and varied only by the size of the petrol jet and the usual hand-controlled air admission. On the other hand, when the engine is running at high speed the plunger *C* descends more or less, admitting air through the apertures *E* and *F*, coinciding in quantities calculated to give

the best possible mixture at every speed. It will be easily understood that this apparatus will give the best results with motors which are governed either on the exhaust or by throttled induction. By means of a thread cut on the cylindrical body B, the present apparatus can be attached to existing carburettors on Germain cars, it taking the place of the usual mushroom pulveriser. The four cylinders are cast in pairs, and the inlet

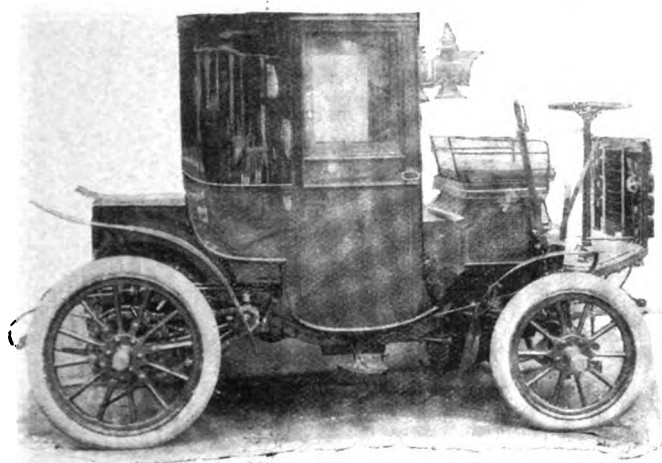


Fig. 73.—The Germain 7 1/2 h.p. Petrol Coupe.

valves are so arranged that they may be operated either mechanically or automatically by suction in the usual way. The cam shaft, which is outside the crank chamber, is fitted with additional cams, actuating two rocking levers set on a short shaft, one of which is connected by a tension rod to a lever set across the top of the inlet valve dome. This lever bears upon the spiral spring and the upper end of the inlet valve stem, which is carried through to accommodate it. When it is desired to run the motor with the inlet valve working automatically, the valve depressing levers are pushed down, and the tension rods slipped off their ends. The dimensions of the cylinders of the 15-h.p. motor are the same as those given above for the 7 1/2-h.p. They are fitted with both tube and electric ignition, but the Eisemann magneto system can be applied if desired. To meet the demand for a "popular" light car, the Germain Company have secured the agency for a little French vehicle to which they have given the name "Staughton." The engine is of the single-cylinder, vertical type, developing 8-h.p. Three forward speeds and reverse are provided, the transmission being by means of an universally-jointed shaft and bevel gear to the rear live axle. Another noticeable exhibit of this firm was the 15-h.p. heavy transport lorry. It weighs about 2 1/2 tons, and is capable of carrying a load of over 5 tons. It is fitted with four-cylinder motor, four speeds forward and reverse, and is chain driven. Still another exhibit of interest on the Germain stand

contact breaker by worm gear. We noticed also that the governor was entirely enclosed. Altogether the British Germain Company's exhibit was of a most interesting character.

The "Holcar" is the name of a new petrol car designed by Mr. Holroyd Smith, the chassis of which was shown in the Gallery on the stand of the UNITED KINGDOM INVENTIONS SYNDICATE, LIMITED. To begin with the frame, this is of channel steel, in the fore part of which is set the engine. The latter comprises four independent cylinders placed diagonally at right angles to each other, two on each side of the car, and all four driving on to one common crank-shaft. The dimensions are 4 1/2 in. bore by 5 in. stroke. Both the induction and the exhaust valves are mechanically operated. The cooling water can automatically circulate, but is assisted by a special direct-driven pump, so coupled that the water is distributed equally to all four cylinders, instead of to each in succession. Electric ignition is employed, a Bowden wire being employed for advancing and retarding. The sparking plugs, commutator, carburettor, pump, and the valves are all easily accessible, while ample provision is made for lubrication. The speed of the motor is controlled by a special automatic governing device acting on the admission, subject to variation between 200 and 1,500 revolutions per minute (the normal speed being 900 revolutions) at the will of the driver, by means of Bowden wire. A pulverising carburettor is fitted, the air mixture of which may be regulated by the controlling lever by means of a Bowden wire. The power of the engine is conveyed to the gear-box through a friction clutch, which acts in two directions: in the forward position it drives the gear-box, whilst in the rearward position it acts as a brake, independent of the engine, the intermediate position giving a free engine. Two speeds, forward and a reverse, controlled by one lever, are provided, the gear vessels being always in mesh, the requisite pair being brought into action by means of clutches. From the gear-box

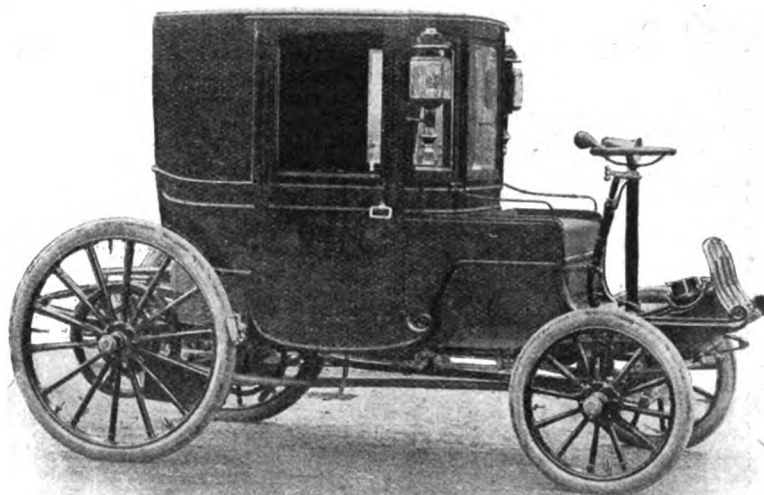


Fig. 74a.—The Scheele Electrical Convertible Brougham. (See issue Mar 28 page 73)

the power is conveyed to the rear live axle by cardan shaft and bevel gear. Special band-brakes are fitted to drums on the rear wheels, the inside of the drums being provided with ratchets. In engagement with each is a lifting pawl operated by Bowden wire mechanism, and which acts as a sprag, preventing the car running backwards, except when the pawl is lifted out of engagement with the ratchets. Another feature is an adjustable steering pillar, the column carrying the steering hand-wheel being pivotally mounted in such a way that its inclination to the rider may be adjusted by means of a thumb screw, and the hand wheel even pushed right forward to enable the driver to mount on either side of the vehicle. The handles for setting the ignition, adjusting the carburettor and regulating the speed of the engine are mounted on the steering column. Reference should also be made to the use of three silencers—an intermediate one for each pair of cylinders, and a large one at the rear from which the exhaust gases emerge through a row of nipped outlets. In order to ensure effective cooling of the cylinders Mr. Holroyd Smith holds the opinion that not only must a large surface be exposed to the air, but this surface must also be exposed to a large or wide current of air. This is obtained by a large number of small and thin gauge copper tubes which run entirely around the bonnet and in an arch over the dashboard. As will be seen, the "Holcar" comprises a number of new features, and we look forward to see it in the forthcoming trials. On the same stand was shown a rotary steam-motor of extremely compact form, instantaneously reversible, specially suitable for launches, yachts, etc., and the U.K.I. dry cell for ignition purposes.

In the Gallery the Steam Car Industries Company showed a 12-h.p. magnet car, a Boyer "Universal" car, on familiar lines, and a Stirling dogcart, fitted with a 5-h.p. Panhard engine. These vehicles attracted considerable attention throughout the week of the Exhibition.

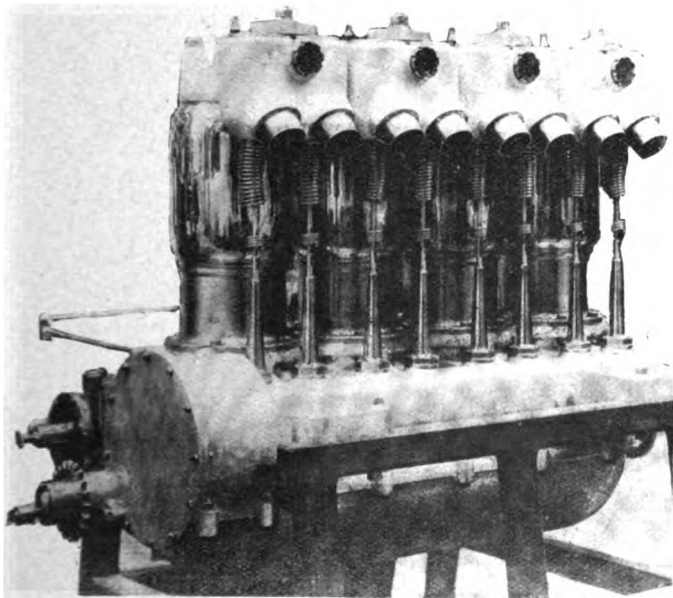


Fig. 74.—The Germain 40-h.p. Motor.

was a 40-h.p. engine (Fig. 74) intended for a racer at present being built for the Paris-Madrid contest. The four cylinders are separate, being made of steel, with brass water jackets. The cylinder diameter is 140 mm. by 160 mm. stroke, the engine being capable of developing 57-h.p. The inlet valves are mechanically operated, they being on the same side as the exhaust valves, all being actuated off one cam shaft, which also drives the

Mr. D. CITROEN, who has hitherto only been identified with the Minerva motors, specimens of which were shown on his stand, has now taken up motor-cars, which, however, he intends to supply solely through the trade. No less than three types of cars new to the English market were shown on his stand. The first of these—the Tony Huber—was briefly referred to in our report of the Paris Salon. We first inspected a 12-h.p. chassis, the frame constructed of wood with steel fitch plates, being a fine piece of work. This is fitted with a four-cylinder motor; the cylinders, which are built separately and 112 mm. diameter by 140 mm. stroke, are constructed of steel. The inlet valves are mechanically-operated, and located

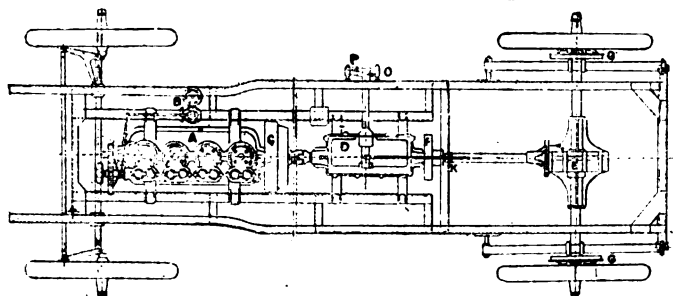


Fig. 75.—Chassis of Tony Huber 12-h.p. Car.

- | | |
|-------------------------|----------------------------------|
| A. Motor. | F. Pedal brake drum. |
| B. Carburettor. | G.G. Lever-actuated brake drums. |
| C. Flywheel and clutch. | K. Universal joint. |
| D. Gear box. | O. Speed change lever. |
| E. Differential. | P. Brake lever. |

on the same side of the engine as the exhaust valves. There is thus only one half-speed countershaft, driven by outside spur gearing. Cylindrical water jackets of brass are fitted in such a way that they can be removed and replaced in a few minutes for cleaning purposes. All the bearings are fitted with phosphor bronze liners. The engine speed, which is normally 1,000 revolutions per minute, is regulated by a centrifugal governor acting upon a piston valve which automatically regulates the quality of the mixture, by admitting more air to the cylinder at high speed. The ignition is by induced high tension spark; but magneto ignition may be substituted if desired. The valves are readily accessible. In this car the power is conveyed to the rear axle by a longitudinal shaft and bevel gearing. Four speeds and one reverse are available. A direct drive on the high speed is obtained by throwing the usual gear carrier K (which slides on the square portion H of the central shaft) (Fig. 76) into mesh with a short shaft R, which takes the drive of the motor and which drives the countershaft by means of a pinion D. The object of this reversal of the usual arrangement is to obtain special rigidity for the rear end of the central shaft which is subjected to the strain of the brake pulley W, and which supports the driving block A of the propeller shaft. The latter runs in two long phosphor bronze bearings, and the differential shaft runs on substantial bearings of the same material six inches long. On the rear axle the usual stay rods supporting the differential box are dispensed with, their place being taken by a tubular extension of this box round the propeller shaft, which transmits the radial effort set up by the driving bevel pinion to the end of the propeller shaft. Sight-feed lubrication to all the bearings is provided. A second type of Tony Huber chassis is fitted with chain drive and a four-cylinder motor with the cylinders (98 mm. by 140 mm.) cast in pairs. The engine runs at a normal speed of 800 revolutions per minute; a feature of the water jackets is the fitting of detachable plugs, which can be likened to nothing else than stoppers of lager beer bottles. In this engine the inlet valves are of the ordinary suction type. The change gear is similar to the one referred to above, an independent differential countershaft being fitted. This is designed to be attached to the main frame, and is connected by a universal joint to the gear box. In all other

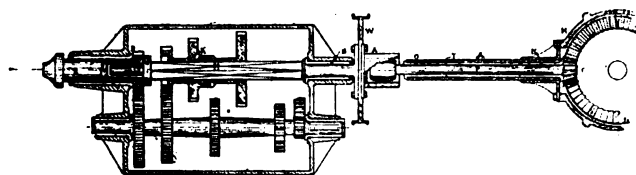


Fig. 76.—Section of Tony Huber Change-Speed Gear and Cardan Shaft.

respects the 16-h.p. car is similar to the 12-h.p. type. We now come to the Henriod motors and cars, which for the English market are to be known as the "Pandora." Of these, a 7-h.p. chassis was shown, this comprising a single-cylinder engine (100 mm. by 120 mm.). The main feature of the chassis consists of the grouping of three forward speed gears, reverse gear, differential, live axle, three brakes, and hubs, into one simple mechanism to be attached by springs to the rear portion of the main frame, one longitudinal shaft transmitting the power from the clutch to the rear axle. Specimens of the Pandora 12-h.p. (100 mm. by 130 mm.) and 18-h.p. (120 mm. and 130 mm.) double-cylinder motors were also displayed, these having

suction inlet valves and a governor acting on a throttle on the admission. Still another new car to the English market is the "Vesta." This is fitted with a vertical engine developing 7-h.p., the cylinder, which is 100 mm. diameter by 120 mm. stroke, having mechanical-operated inlet valves. This is a chain-driven car, two speeds and a reverse being provided. Altogether, Mr. Citroen has now a well-chosen selection of cars to offer.

Messrs. PETO AND RADFORD's reputation in connection with ignition work was well sustained. A new accumulator was shown in which the electrolyte is a paste of sulphate of lead, which enables the cells to give off a current of increased voltage, while the splashing associated with diluted acid is, of course, obviated. The Bergmann magneto ignition was also demonstrated, and a condenser exhibited for fitting to the outside of the coil through which the high tension current is passed before reaching the sparking plug, and by which it is immediately intensified. It is claimed that its action is similar to that of a Leyden jar. Messrs. Peto and Radford had on view a new terminal clip, designed for attaching to wires without the necessity for soldering or brazing. The ebonite sleeve which secures the wire, by making the metal terminal grip it, forms both a support and an insulator—a most important point on high tension wires, where it is advisable to expose as little bare metal as possible. Vulcan auto-tremblers, for converting non-trembling coils into high-speed trembling coils, dynamos, sparking plugs, and other electrical accessories, completed a most interesting display.

Seddon's motor-tyre was shown by the BRITISH MOTOR TYRE SYNDICATE, Limited. This special form of tyre constitutes a combined tyre and tube; a reserve tube being, however, inserted for inflation in case of accident.

Clincher-Michelin tyres were shown by the NORTH BRITISH RUBBER COMPANY, Limited, and also by the Maison Talbot, samples of various sizes, as well as a goodly selection of repairing requisites being displayed.

An interesting display was made by the BEGBIE MANUFACTURING COMPANY, whose exhibit comprised components of considerable interest. A

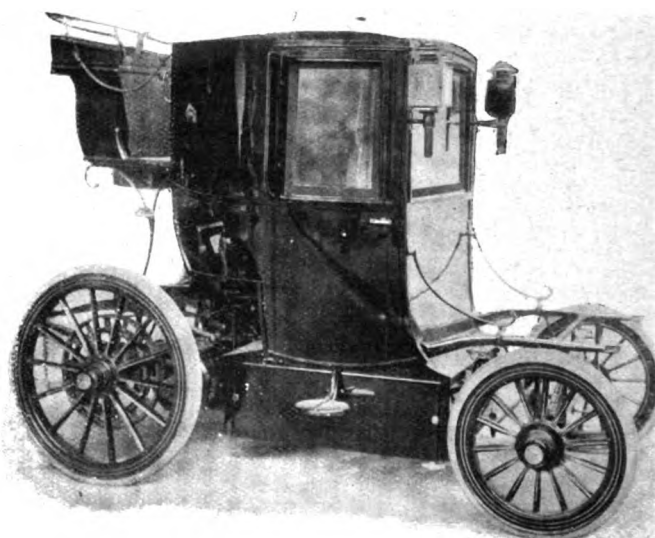


Fig. 77.—The Anglo-American Co.'s Electrical Brougham. (See Issue April 4th, p. 98.)

large show of Aster engines was made, including the new 16-h.p. four-cylinder type, running at 950 revolutions. This is fitted with a wipe contact breaker, comprising a spring-controlled roller, which rolls against the inner periphery of the outer case. It is insulated, and has phosphor bronze introduced at various points of its circumference to correspond with the number of cylinders employed. The Aster three-speed gear (recently illustrated in the *Journal*) and reverse, with differential and clutch, was shown in the 6½-h.p. and 12-h.p. sizes. Other exhibits included new patterns of Begbie-Audin radiator, electric lighting sets, tanks, bonnets, etc.

Messrs. STEINER AND Co. had a bold show of lamps and horns in which some good ideas had been introduced. This firm is favourably known in the trade. Several ingenious devices were shown, the workmanship and finish being equally good.

Messrs. VAN RADEN AND Co. showed a good selection of their standard articles, including induction coils, testing appliances, and charging dynamos.

M. LOUIS GIANOLI showed the well-known G. L. induction coils with, also without, the Charpentier trembler. Voltmeters, amperemeters, switch handles, etc., were also on exhibition at this stand.

The EAST LONDON RUBBER COMPANY made a good display, and, in addition to the "Kerry" motor-bicycle, to which reference has previously been made in the *Journal*, had some trailers and a fore-carriage on view. The latter is of good design and finish, and should be found acceptable to motor-cyclists. The company also had a general assortment of motor-car fittings and accessories, such as castings, carburettors, radiators, gears, sparking plugs, and lamps.

A good show of electrical vehicles was made by Messrs. SHIPPEY BROS., including a "doctor's car," built with high wheels, for hard wear, as suggested by Mr. Rudyard Kipling. The "Toledo" steam runabout

was also shown, the display being completed by a thoroughly representative collection of Diamond tyres in all sizes, as well as good specimens of British-made artillery wheels fitted with Diamond tyres, and a set of non-skidding herring-bone pneumatic tyres.

Mr. JULIUS MATTON, representing the Cologne Accumulator Works, showed some accumulators for ignition purposes, in which the plates are isolated by means of perforated and undulated ebonite sheets. The ebonite covers of the boxes have soft rubber borders, which, although not pitched, do not allow the acid to spill.

Messrs. LACOSTE showed a new rotary contact breaker, and some good types of trembler coils for multiple cylinder engines. Stop-watches, voltmeters, motor horns, flexible tubes, accumulators, etc., were also shown.

All motorists interested in steam cars must have been impressed with the exhibit made by the CREMORNE MOTOR MANUFACTURING COMPANY, formerly known as the Creek Street Engineering Company. These included the "Johnston" liquid fuel burner, which is capable of burning paraffin, having a flash point of from 74 deg. to 150 deg. On the stand was shown a Locomobile fitted with this burner. In such a case an evaporative efficiency of 15.6 lbs. of water per lb. of paraffin oil has been obtained with the burner, which can be easily and quickly started, and in connection with which there is no back-firing.

In a recent issue we gave an illustration of the new belt chain for motor cycles, introduced by the COVENTRY CHAIN COMPANY, who showed this speciality on their stand, as well as a good selection of their automobile chains.

Lubricating oils for all kinds of cars were shown by PRICE'S PATENT CANDLE COMPANY, LIMITED, whose "Belmoline" solidified oil, Motorine, and Rangraphine have long been known to motorists. They have just brought out an "Oleogene" in two kinds, a "D." for De Dion engines, and a "P." variety for Panhard cars. This firm's motor lubricants are free

this name is that the inflated portion is entirely outside the rim, thus ensuring flexibility, resilience, and, consequently, speed. The Goodyear endless solid tyre is securely fastened in several places to the rim by cross bolts, thus obviating creeping.

Messrs. J. C. STATTER AND Co. showed a sparking plug *de luxe*, which combines a sparking plug and spark intensifier in one piece. The sparking plug proper is of a familiar type. To that part remote from the engine cylinder is fitted an air-tight metal case containing the sparking cap. The spark passes between the two metal points inside this case, which are visible through glass provided for this purpose. While the plug is in use the distance between the points can be adjusted by means of an insulated metal-headed screw. A good type of acetylene lamp was also shown by this firm, who drew special attention to their jack *de luxe*, which closes down to such short length that it will be found useful in connection with voiturettes, while when opened out fully it is useful for large cars. These advantages are secured by two concentric steel screws, one working within the other, and although only weighing 4½ lbs., this jack will lift 30 cwt. Its height when closed is 9 in., and when opened 1 ft. 8 in.

A new exhibitor at the Show was Mr. A. H. SHARPE, of Lincoln, who drew attention to his patent belt fastener, a very secure way of fastening any belts. An automatic grease-discharging belt was also shown, these two novelties attracting considerable attention from practical visitors.

Among the new tyres shown were the PETER'S PATENT UNION TYRE, which, although made of solid rubber, is claimed to possess almost as much resilience as pneumatic tyres. It is moulded in one solid piece, with endless wire bands at the foot of the rubber. The special method of fixing consists in a rim, one side of which is removable by means of a rod and lifting screw. When unscrewed a few times, this allows the movable part of the rim to come off. The tyre can then be easily put on from the side, the rim replaced, and the whole fixed in position by tightening the screw



Fig. 78.—The Motor Vehicle and Engineering Co.'s 10-h.p. Grand Car. (See issue March 28th, page 72.)

from oxidising or gumming tendency, while their Rangoon Jelly is an effective medium for the protection of plated parts, and bright metal generally, from the corrosive action of wet and the atmosphere.

THE DOWSING RADIANT HEAT COMPANY, LIMITED, had an effective collection of their radiators for warming motor cars as well as private apartments. These can be worked from any electrical supply main, provided that the heat lamps are fitted for the correct voltage, and the connecting wires are of sufficient size to carry the current. With four such lamps one of these radiators is calculated to consume one unit of electricity per hour, such being found of sufficient capacity for warming a room 12 ft. square, and of the ordinary height.

Messrs. MOEBIUS AND SON had a very effective show of oils, including motor oil for air-cooled engines, motor grease for gear cases, and burning oils for motor lamps. Several good lubricants were shown by Messrs. STERN BROS., whose high flash point oils for Serpollet and other steam cars are well known. Among their specialities is "Austosternol," with a flash point of over 400° F. for light cars. This is a pure hydrocarbon non-corrosive free from vegetable and animal matters, and is specially intended for air-cooled motors. The "Evertrusty" dust-proof lubricator was shown with the anti-vibration safety cap recently introduced. It has the advantage of being unable to come off, even at the highest speeds. These are supplied in two types, one for screw compression and the other for spring pressure. Mr. P. LAWRENCE had a stand whereon was displayed a large selection of lubricating oils, greases, belting, etc., for automobiles.

The DUNLOP COMPANY had representation with a selection of their tyres, including the set on which the Hon. C. S. Rolls made his great record at Welbeck. Good styles of clothing were also to be seen on their stand.

Goodyear motor tyres were shown by the GOODYEAR TYRE AND RUBBER COMPANY. The principle of the double tube pneumatic tyre of

already mentioned. The creeping of the tyre is thus effectually prevented, and the fact that replacement can be so easily made should warrant motorists giving attention to this special tyre. Considerable interest was evinced in the BUCKINGHAM PATENT STEEL-FACED RUBBER tyre. This was recently referred to in our columns, and is a formation of rubber and steel, securing durability as well as resilience. Side slips, it is claimed, are prevented by this tyre, whilst the engine is saved a great deal of the unnecessary jolting and vibration. The tyre is made in sizes to take felloes from 2 in. to 4½ in. in width.

On the stand of the CLARENDON MOTOR CAR AND BICYCLE COMPANY was shown an example of the Clarendon motor-bicycle, of which an illustrated notice was published in our issue of the 13th December last. The engine is carried in a special frame vertically mid-way between the two wheels. The engine crank-shaft has an outer bearing running on balls outside the driving pulley, this preventing any cross strain on the engine crank-shaft. The whole machine appears to be a very good example of British motor-bicycle design. This company are about to bring out a machine on similar lines but fitted with a 3-h.p. engine with mechanical inlet valve.

The "Pebok" motor-cycle was shown by the PEBOK MOTOR-CYCLE COMPANY. The engine is placed in a vertical position in a loop frame forward of the bottom bracket. It can be easily detached by unscrewing two bolts. A float-feed carburettor is fitted, the ignition being by coil and accumulator. The transmission is effected by a three-ply V section belt. The length of wiring is notably short, thus avoiding the risks of short circuiting. Longuemare carburettors, Basse-Michel coils, voltmeters, contact breakers, lubricators, etc., were also comprised in the display of the Pebok Company.

A selection of seamless patent steel and copper engineers' oil feeders, oil filters, etc., was shown by T. F. BRAIME and Co., Limited.

Among the carriage-building firms who are now devoting much attention to motor-cars is Messrs. LAURIE AND MARNER, who had a large and varied display. First we noticed a 15-h.p. Mors, with a handsomely finished six-seated tonneau body and canopy. The Cudell cars were represented by a 12-h.p. tonneau (Fig. 79). This follows the standard lines of gear-driven cars, the power being supplied by a two-cylinder vertical engine, with a governor acting on the inlet. The cylinders are 110 mm. diameter by 110 mm. stroke, the speed varying from 300 to 1,400 revolutions

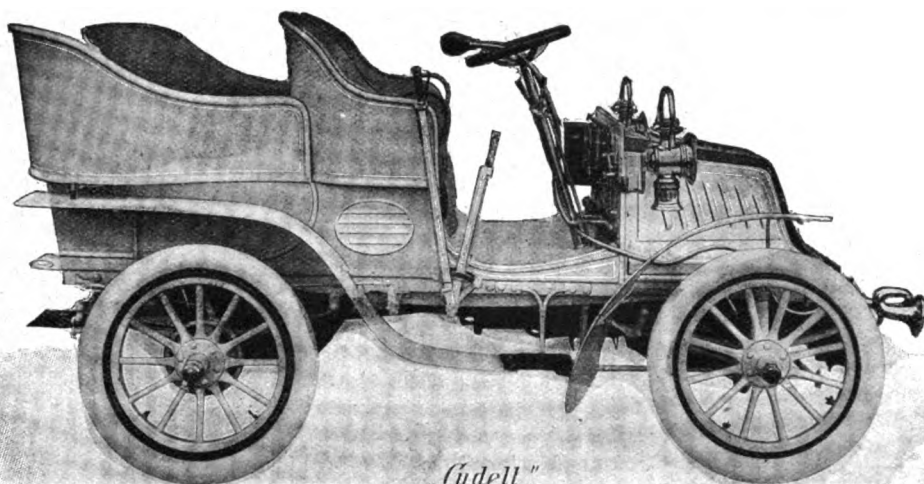


Fig. 79.—The Cudell 12-h.p. Car.

per minute. The engine transmits its power through a friction clutch to the speed gear, which gives four speeds forward and one reverse motion. On the highest speed the power is transmitted direct, none of the pinions in the gear box being in motion. Still another make of petrol car to be found on this stand was the Vincke-Halcrow. These are built in accordance with the generally-adopted practice of gear-driven cars, being fitted with a 9-h.p. single-cylinder engine, three speeds and reverse, the latter being controlled by a lever on the steering column. An 8-h.p. Linon car and a 9-h.p. Mathieu tonneau also found places on this stand, while finally we may refer to the display of Pegamoid cloths and paints as well as to the tourist maps mounted on Pegamoid.

Motor-cycles constituted an attractive display made by Messrs. BAYLISS, THOMAS AND CO. Their Excelsior machines are well known, the framework being of special strength and design. Massive front forks are provided, these being carried right up to the top ball race. The drive is by means of a Lincona belt. Surface or Longuemare spray carburetors are fitted. Lubrication is effected by sight feed pump supplied from the tank placed in the angle between the diagonal tube and back forks. The 2-h.p. machine is specially intended for use in districts where the hills are of ordinary contour, while the 2½-h.p. motor-bicycle can be ridden practically anywhere and will be found very serviceable in connection with a trailer—a capital specimen of which was on view.

Bevel, differential and driving gears, as well as a large selection of patterns for castings, etc., formed the main features of a good display by the MOTOGEAR ENGINEERING CO., whose workmanship revealed a good finish. The collection of exhibits included machines cut spur, bevel, mitre, and spiral wheels, special raw hide and fibre pinions for noiseless power transmission, etc.

A good assortment of motors for car or launch work was exhibited by Mr. E. A. McLAUCHLAN, a special feature of his display being a double-cylinder slow speed oil engine of 10-h.p. This is fitted with electrical ignition. The exhaust gases are led through a chamber which forms the vaporizer and silencer combined. After the engine has run about ten minutes this chamber becomes sufficiently warm to vaporise paraffin oil. A set of 6-h.p. compound condensing steam engines was also on view, as well as Dickenson's Morette already described in our columns. This has a 1½-h.p. motor, and on a level road can attain a speed equivalent to the legal limit.

The COLLIER TWIN TYRE COMPANY, Limited, had a bold display of their well-known tyres shown on large-size artillery wheels, ranging from

40 in. to 28 in. in diameter. Inner tubes were also conspicuous on the stand, including the set which went successfully through the recent 4,000 miles tyre tests. There were also shown a set of tyres which had travelled 14,000 miles on a car weighing two tons when loaded, without having to be removed from the rim.

Stamped steel barrels were conspicuous on the stand of Messrs. J. F. PEASE AND CO., LIMITED. These are specially designed for conveying and storing oil, etc., saving loss by leakage, evaporation, or absorption. The Telo tyre and wheel was also on their stand, this being a combination of an unpuncturable tyre and rim of novel form and a wheel stamped out of steel. It is claimed to have the resiliency of the pneumatic tyre and all the advantages of a solid tyre. Should the inner tube burst the carriage can be run to its destination on the solid or outer tyre.

The ANDERSON MOTOR TYRE COMPANY, LIMITED, attracted attention to their system of repairing motor tires. They have a vulcanising plant in London and base their charges for repair work on the amount of new rubber introduced.

MESSRS. FRANK F. WELLINGTON, Limited, who have secured the sole agency for the "Brooke" cars, exhibited two of the standard 14-h.p. vehicles with tonneau bodies (Fig. 80), the details of which have already been described in the *Journal*. The engine is of the three-cylinder type, fitted with Estcourt induction valves and natural circulation cooler. Transmission is on the "Brooke" system, the change-speed gear being operated by chains. All the wheels are of equal diameter, and shod with 870 by 90 mm. pneumatic tyres. Interest in Messrs. Wellington's stand was chiefly

centred in the new "Brooke" light car, which was shown for the first time at any Exhibition. The motor is of very interesting design, comprising three vertical cylinders, the actual h.p. being 15. It is fitted with mechanically-actuated induction valves, the whole of the valves being in one line and worked from a single cam shaft. The governor acts on the throttle, but is actuated by the suction created by the motor, it being claimed for this arrangement that it obviates all objectionable sharp cutting-out action. The cylinders are 3½ in. diameter by 4½ in. stroke, the normal speed being 900 revolutions per minute. The water-cooling is effected by pump circulation and induced draught created by fan blades formed in the fly-wheel on the Mercedes principle. The engine is set in the reverse way to that adopted in the standard "Brooke" car, the transmission arrangement being similar to that adopted in the Panhard type, i.e., through a friction clutch, gear-box, differential shaft, and side chains.

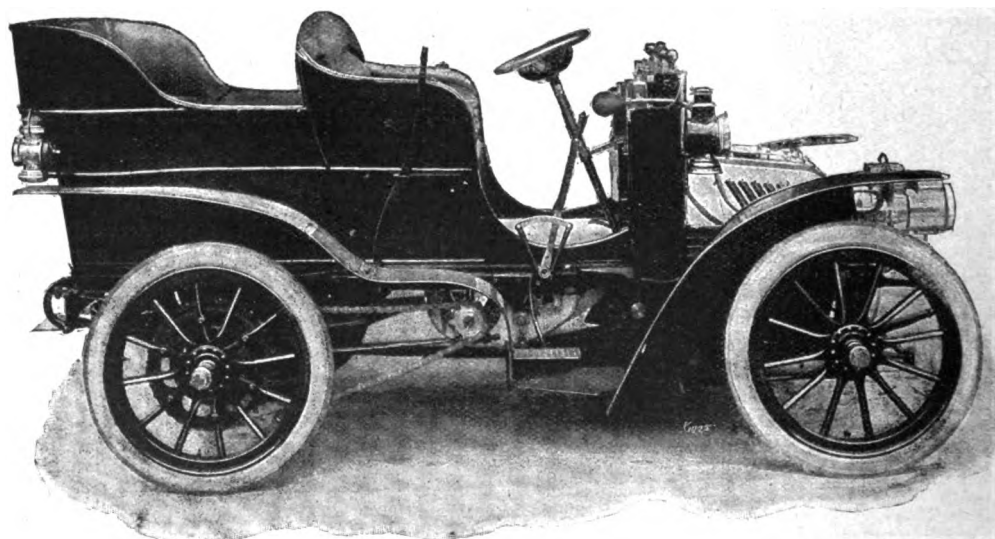


Fig. 80.—The Brooke 14-h.p. Standard Car.

Three speeds forward and a reverse are provided, the change gear being of the sliding-pinon type, with a direct drive to the bevel wheel driving the differential countershaft on the top speed. The clutch and brake pedals are mounted so that they are operated by being pushed forward by the foot, while the levers controlling the change-speed gear and side-brakes are fitted so as to be drawn towards the driver. The car, which has a wheel base of 7 ft. 3 in., and, with two-seated racing body, weighs 13 cwt., has every appearance of being a flier.

Outwardly the little electrical car (Fig. 81) exhibited by Messrs. PRITCHETT AND GOLD, Ltd., closely resembles a petrol-driven vehicle. The car, which has accommodation for two passengers, has been designed to meet the demands of owners of country houses who have an electric lighting plant. The frame is constructed of steel tubing. The motor is a four-pole series wound, specially designed for running for long periods without attention, it being self-lubricating; it is rated at 4-h.p., and is mounted at about the centre of the frame, driving the rear axle through bevel gearing. The controller is arranged to give four speeds forward, ranging from 5 to 18 miles per hour, and two speeds backward. The battery cells are divided, one portion being carried in the front of the car under a bonnet, the other being under the seat; this arrangement gives equal distribution of weight over the chassis. The battery consists of forty cells of Messrs. Pritchett and Gold's traction type, and is of 120 ampere-hour capacity, this being sufficient to give a run of forty miles on a single charge, over roads of good and level surface. The controller is of the usual drum type, giving a series-parallel control, and is operated by a hand lever placed at the side of the seat.

Among the journals represented at the show was *Le Chauffeur*, the oldest technical journal in France, MADAME LOCKERT presiding over its fortunes with characteristic energy and tactfulness.

The PNEUMATIC ENDURANCE WHEEL was shown, and its special points attracted considerable attention. This is adaptable to any form of motor vehicle. It consists of an outer tyre or wheel tread of plain steel, or channel with or without rubber tread, in sizes adapted to the service required, and two inner steel rims, one overlaying the pneumatic tube and rigidly connected with the tyre or tread and central hub, the other supporting the pneumatic tube and connected by spokes with the two segments of the outer hub. The upper steel rim is a part of the central or rigid wheel; the inner and supporting rim is an integral part of the suspended or movable wheel. There is a pneumatic tube in the wheel, the outer tyre or wheel tread being rigidly connected with the overlying steel rim and the central hub section. The notion is already familiar enough in the United States, where it has already been adopted by a number of motorists.

A neat display of the little 4½-h.p. and 5½-h.p. two-seated Swift cars was to be seen on the stand of the SWIFT MOTOR COMPANY, as also a specimen of the ingenious combined change-speed and driving gear employed. A full description of the general arrangement adopted was given in our report of the 1902 Agricultural Hall Exhibition; a few slight modifications and improvements have been introduced, the main one being the provision of a reverse motion. No differential gear of the usual type is fitted, ratchet

controlling each pair. Special attention has been paid to the lubrication of the main bearings and in the new car artillery type wood wheels have been adopted.

M. HENRI CORMERY exhibited on the stand of Madame Lockert an interesting two-cycle bicycle motor, the arrangement being such that the mixture is drawn from the carburettor into the crank chamber, and thence forced by the movement of the piston in its downward stroke into the

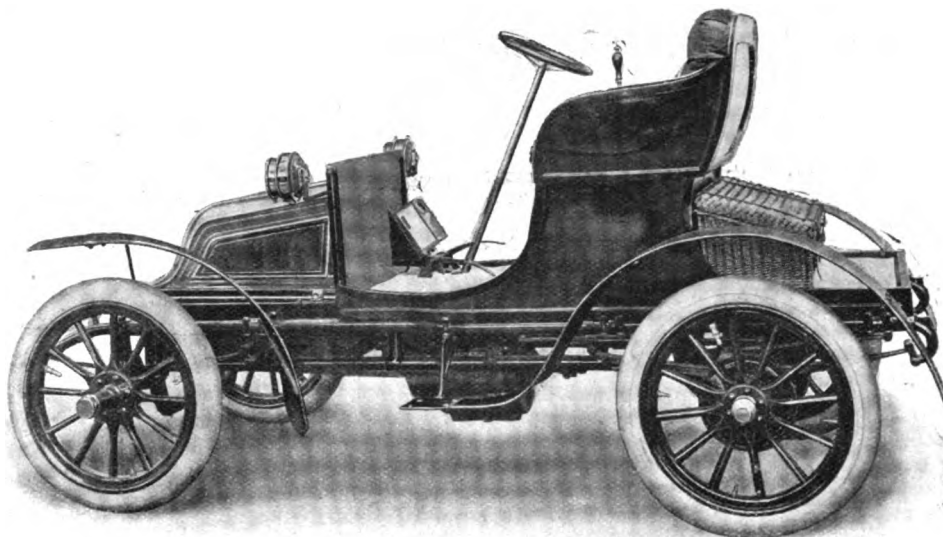


Fig. 81.—The Pritchett and Gold Electrical Car.

combustion chamber above. An illustrated description of the Cormery motor was given in the *Journal* of February 23rd, 1901.

The HYDE PARK MOTOR COMPANY had a large and varied show, including a new spark intensifier for motors, oils, greases, horns, etc. They also found a place for the Wilkinson patent non-slipping tyre covers for motor-cars. These are made of strong backing, with an outside covering of thick rubber and insertion cloth perforated so as to admit rows of rubber through the perforations through the body of the thick rubber, thus knitting together the rubber above and below the insertion. In this way the cleavage is prevented, the cloth separating the wires, which are pricked through the covers from back to front in the form of staples, finishing flush with the face of the tread.

At the stand of the CARLTON MOTOR COMPANY the great novelty was a patent combined carburettor and inlet valve, which will give equal results with petrol, paraffin, and alcohol. It secures a positive measured feed, and is an atomiser and vaporiser at the point of admission. The company also exhibited their new 2½-h.p. and 3-h.p. vertical engines for motor-bicycles, in which the large and long bearings are a conspicuous feature. New exhaust lifters, and a new method of fixing the engines in the frame were also shown. The Carlton motor-bicycle is controlled by one thumb lever; there is automatic oiling throughout, and it is fitted up for the use of petrol or paraffin. A large display of engine castings, accessories, stampings, forgings, etc., completed a useful display.

A new electrical car to the English market is the "Gallia," of which one having a highly-finished landaulette body was shown on the stand of the BUCKINGHAM PALACE GARAGE COMPANY.

The New Orleans cars have always been a very popular type in this country, and, judging from the latest models, they should continue to stand high in public favour. The NEW ORLEANS MOTOR COMPANY only showed two cars—a 9-h.p. double-cylinder vehicle with tonneau body and three speeds and reverse, and a 15-h.p. four-cylinder car having four speeds forward in addition to one backward motion. One of the chief improvements in this vehicle is in the change-speed gear, the change from one speed to another being made without having to pass through the other two speeds. It also gives a direct drive on the top speed with the countershaft entirely disengaged.

The back live axle is of an entirely new design, the wheels revolving on a stationary axle similar to that in a chain-driven car. The radiator is of the new honeycomb type, reducing the amount of water carried by 50 per cent. The frame is similar to that of the 1902 four-cylinder car, but has been lengthened to allow an increase of 10 ins. in the wheel base.

The Coventry Eagle motor-bicycle, attracted attention on the stand of the COVENTRY EAGLE CYCLE COMPANY, Limited, whose trailers and fore-carriages are of equally good repute.

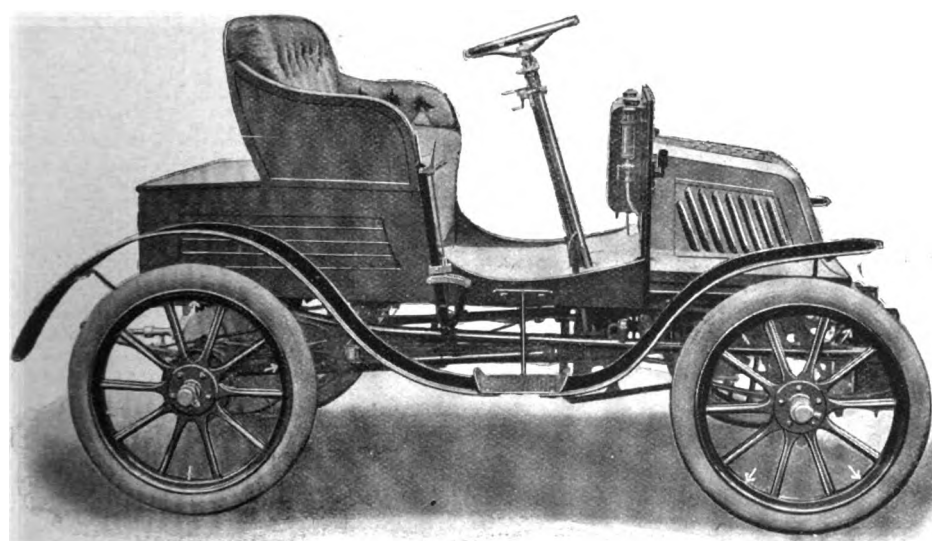


Fig. 82.—The Swift 6-h.p. Car.

clutches being provided fitted to each driving wheel on the ends of the live axle to allow either wheel to over-run the other in turning corners. The novelty on the stand was the chassis of the latest Swift voiturette (Fig. 82). This has the same gear as the 5½-h.p. car, but is fitted with a 6-h.p. De Dion engine. The tubular frame is of special construction, being suspended on full elliptic springs over the rear axle as well as above the front axle; tubular distance rods connect the back axle with the frame. The hubs of the rear wheels are provided with two hand brakes each, separate pedals

CORRESPONDENCE.

THE SPARKING PLUG "DISCOVERY."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Allow me to thank Mr. Estcourt for his correction. I must admit that I had not experimented with petrol vapour myself, but was given to understand by one whom I considered an authority, that the vapour was lighter than air, hence my suggestion. My mistake, however, has probably been productive of good in that it has drawn from Mr. Estcourt a very lucid demonstration of an experiment verifying his statement, which may be useful to others besides myself. Petrol being a comparatively new substance, no mention of it is to be found in scientific books. Any information, therefore, on the subject which may be imparted in your valuable columns cannot but be welcomed by all who have to use it, many of whom may not have time or opportunity of experimenting themselves.—Yours truly,

W. W. HARDWICKE.

[Pressure on our space has prevented the publication of several interesting letters. These will appear next week.—ED. M. C. J.]

GLASGOW TO LONDON TRIAL.

FOR the Glasgow to London trial, to be held on May 13th and 14th, under the auspices of the Western Section of the Scottish Automobile Club, the following entries have been received:—

Entrant.	Description.	B.H.P.	Approximate Weight Unladen. Cwts.	Tyres.
Delahaye Chief Depot	Delahaye	12	16	Michelin
Captain H. H. P. Deasy	Rochet & Schneider	22	20	Pneumatic
Henry B. Hemmons	Argyll	9	12	Ditto
Hozier Engineering Co., Ltd.	Ditto	10	13	Ditto
Ditto	12-h.p. Argyll	16	17	Ditto
C. Jarrott	24-h.p. De Dietrich	30	19½	Ditto
Wm. H. Kingsbury	Elswick	14	17	Dunlop
Lanchester Engine Co., Ltd.	10-h.p. Lanchester	18	19	Michelin
Ditto	Ditto	18	19	Ditto
Miss Dorothy E. Levitt	Gladiator	12	15½	Dunlop
Mann and Overton's, Ltd.	12-h.p. Georges Richard.	13	13	Pneumatic
Ditto	24-h.p. ditto	26	16½	Ditto
John Marston, Ltd.	Sunbeam	10-12	16	Ditto
Ditto	Ditto	10-12	16	Ditto
Middleton and Townsend	Steam	*12	32	Falconnet Compounds
Mo-Car Syndicate, Ltd.	Arrol-Johnston Dogcart.	12	24	Solid
Ditto	6-seated Arrol-Johnston Carriage.	12	26	Ditto
Rennie and Prosser, Ltd.	10-h.p. Wolseley	10	19	Continental
J. R. Richardson and Co. (Lincoln), Ltd.	—	14	14	Pneumatics
Thomas Shaw	10-h.p. Wolseley	11	18½	Continental
J. W. Stocks	De Dion-Bouton	10	15	Pneumatic
Frank F. Wellington, Ltd.	Brooke	14	20	Ditto
Weston Motor Syndicate	14-h.p. Chenard and Walcker.	17	17½	Ditto
Glasgow Motor-Car Co.	Peugeot	6½	6½	Continental
Farman Automobile Co., Ltd.	F.A.C. tonneau	24	20	Pneumatics

* Nominal.

CLAIMS FOR DAMAGES.

BEFORE Mr. Justice Grantham, in the King's Bench Division, a case was tried on April 6th, W. J. Shelly, a market gardener, suing Fuller, Smith and Co., Ltd., to recover damages for injuries sustained by two ponies belonging to him, owing to the alleged negligence of the defendants' servants while driving a motor-van. Mr. Justice Grantham, in giving judgment, said it was well known that people owned motor-vehicles which were often driven by contract. The contracts varied in form, and it was very important to see what the particular contract in each case provided. In the present case Messrs. Thornycroft and Co. built the defendants' van, and the latter, knowing the nature of this traffic, made a special contract with them, under which Messrs. Thornycroft took the whole responsibility of driving the van, for which the defendants agreed to pay them the sum of 45s. a week, of which sum 35s. were paid by Messrs. Thornycroft to the driver. In these circumstances it seemed to him that the driver was not the servant of the defendants, and his judgment must be for them. A stay of execution was granted.

At the Marylebone County Court Mrs. Clark has brought an action against Mr. Arthur Wilson, of Hull, and of Grosvenor Place, London, to recover £50, the value of a horse and the cost of damage done to a cab by the defendant's motor-car, which collided with it on December 19th last. After retiring for half an hour the jury could not agree, and counsel agreed to accept a verdict of the majority, which resulted in the plaintiff being awarded £40 damages.

THE STORAGE OF PETROL.

THE NOTTINGHAM AUTO-CAR COMPANY have been sued at Nottingham Summons Court for an offence under the Petroleum Act. The matter, as explained by Mr. H. W. Day (of the Town Clerk's Department), was a technical one, and the prosecution was brought as a warning to users of petroleum spirit and petrol, as to what were the regulations with which they had to comply. A person was entitled to keep three gallons, providing it was in separate one-pint vessels. If he wished to keep a larger quantity the user must apply for a licence, and an inspector would call to inspect the premises whereon the stuff would be stored. Under the regulations a person might store sixty gallons, but the petrol must only be in use for the purpose specified in the regulations, and must not be resold. The defendant company were charged with selling two gallons of petrol. The maximum penalty was £20 per day. A nominal penalty was asked for. The offence was admitted, and a fine of 10s., including costs, inflicted.

POLICE TRAPS.

POLICE-CONSTABLE WAGHORN is winning renown on the East Sussex roads as having a keen eye for motorists.

SOME of the Metropolitan police amused themselves on Bank Holiday by capturing motorists in the West End of London. At the Queen's Gate, Hyde Park, a measured fifth of a mile proved a good trap, the victims including Mr. O. Stanton.

FURIOUS DRIVING CASES.

COUNT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Odiham (Hants).	W. Hobbs (driver to Mr. Lionel Phillips) Rotherwick	35 m. p. h.	50s., etc.
"	J. E. Thornycroft, Chiswick	23 m. p. h.	£2, etc.
Epsom	Dr. R. McMahon, Hammer-smith	21 m. p. h.	£1, etc.
"	H. Guillon, London, N.E.	25 m. p. h.	£1, etc.
"	J. Price, Chelsea, S.W.	19 m. p. h.	£1, etc.
Shoreham	S. Daver	32 m. p. h.	£10, etc.
"	S. Girling	34 m. p. h.	£5, etc.
"	H. E. Dennis	24 m. p. h.	£5, etc.
Kirkcaldy	C. Gaulard, Wemyss Castle	20 m. p. h.	£5, etc.

Where no alleged speed is given it is understood to be above the legal limit.

IN the case at Shoreham Mr. H. E. Dennis declared he was only travelling 15 miles an hour, and that he had a Surrey magistrate with him in the car who thought it was absurd for the police to stop him.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, APRIL 25, 1903.

[No. 216.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE opening meeting of the Lincolnshire Club was a notable function, the occasion being taken to propitiate the local surveyors off the Fens at a cheery luncheon at the Saracen's Head Hotel, Lincoln. Mr. W. Garfit, M.P., presided, and said he was in favour of doing away with the speed limit, but would greatly punish those who drove to the annoyance and danger of the public. When the House of Commons consented to the Gordon Bennett race being held in Ireland it gave the case away as to speed. Sir H. B. Bacon, Bart., also spoke, and declared in favour of numbering.

Our Roads.

CAPTAIN J. S. RUSTON, J.P., proposed the toast of the day, the "Road Surveyors," asking them to remove foreign matter from the roads, and do something to mitigate the dust nuisance. In response Mr. E. P. Hooley, the County Surveyor of Notts, said he thought Lincolnshire roads had improved wonderfully. Referring to the dust problem he said he had tried for ten years to secure a road material that would defy the weather, the greatest enemy. He found that furnace slag could be made into a splendid material that would wear well, but not absorb moisture and throw it off in the way of mud as granite would. He found that by getting the slag about eighteen hours old, the temperature was right, but he could not get manual labour to mix it, so he devised a machine that turned out tarred macadam properly saturated. The absorption tests were: granite 2.8 gallons per ton in twenty-four hours, slag 3.745, and the new material 0.278 only. He had had some down four years and it had not been touched. It was cheaper than other material, and wore longer. A trial was being made on one of the worst roads in Notts.

Official Views.

MR. W. EMBLETON FOX, J.P., responded to the toast of "The County Authorities," proposed by Captain J. A. Cole, J.P. He said that a radical alteration in the present regulations was necessary. The County Councils' Association was agreed as to the necessity of removing all limitations as to pace of motors, but there must be some means of identification, and there must be greater punishments for repeated offences. He dealt with the objections to numbering, and thought motorists would grow accustomed to their numbers. It was not worth objecting to numbers on the grounds of their appearance. As for the risk of persecution, the only persons to be feared would be the police; but what could they do with no legal limit? It would be difficult to prove common danger. Therefore the fear of persecution might be dropped. His impression was that the solution to the whole difficulty was the abolition of the speed limit, identification, the use for motorists of the ordinary law, and increase of punishment for repeated offences.

The Hotel Problem.

MR. W. REES JEFFREYS, the new Administrative Secretary to the A.C.G.B.I., proposed the toast of the Lincolnshire Club, commending it on its work and position, as well as its standing with the police. He found that police traps increased fast driving, for even considerate drivers knew it was useless to drive slowly. As a rule it was the surveyors who had brought about improvements, and he thought it good for all if the dignity of the county and district surveyors was enhanced. Some hotels could be improved as regards their attitude to automobilists. In France, automobilists were treated well, and supplies for motors were stocked. Dr. E. Cragg (Billingborough), the enthusiastic hon. sec., responded for the Club. Subsequently many of the party motored to Sleaford, where twenty cars rested while their drivers and passengers took tea at the White Hart Hotel.

Villages and the Car.

WITH the Earl of Camperdown as its moving spirit, a company has been formed for a motor-car service between Stratford-on-Avon and Brailes, a village four miles beyond Shipston-on-Stour, a distance altogether of about fourteen miles. Some months ago Lord Camperdown called a meeting at Shipston to agitate for the re-opening of a disused tramway belonging to the Great Western Railway, but the railway authorities have shown no intention of moving in the matter. Each car will hold about sixteen people, and the experiment should convince railway companies that the automobile is likely to play an important part in the traffic arrangements of the country. In some of the districts where railway enterprise is practically dormant the motor-car will revolutionise social conditions and bring prosperity to many a decaying locality.

Motors at the Meet.

AT a recent meeting of the Warwickshire Hunt the vexed question of motor-cars as a means of conveyance to the meets of the hounds was discussed, and a vote taken. It was moved by Lord Willoughby de Broke, and seconded by Lord Southampton, that the practice was undesirable; and ultimately a motion respectfully requesting ladies and gentlemen to abstain from travelling to meets of the Warwickshire Hounds on motor-cars was carried unanimously. Great diversity of opinion prevails concerning the propriety or otherwise of motor-cars being brought into the hunting field in and on the borders of the Shires, but we believe that, in the end, the automobile will be welcomed rather than tabooed.

Roads in the Monmouth District.

THE Easter tour of the Midland Club to Hereford revealed as great an improvement in the roads of that district as Mr. Hooley has observed in Lincolnshire. Mr. T. C. Aveling, the hon. sec. of the Club, testifies to the improvement of the highways in the Forest of Dean, the Wye Valley, and the Swansea area as compared with what they were four or five years ago. In fact they will compare favourably with the roads of any other

locality. About twenty-five members of the Club participated in the run, which was successful from every point of view.

"We
are
Seven."

LAST week we recorded the initial run of the Norfolk Automobile Club, which has started well and promises to do great things in the eastern counties. Below we give a photograph of the "Brooke" contingent to the meet. Mr.

and Mrs. Maudslay Brooke are on the car to the right of the picture, Mr. E. Estcourt will be recognised in the centre, and Mr. F. F. Wellington to the left. Mr. W. Chamberlin and Mr. R. Lawrence are other well-known motorists depicted in the scene.

New Motor
Works.

ON Thursday week, about twenty gentlemen sat down to a luncheon in connection with the formal opening of the Ryknield Engine Company's works at Burton-on-Trent. These are of spacious extent, replete with most modern tools,

and under the management of Mr. Bagguley, late works manager to the Locomotive Works at Stafford. The brewery interests were worthily represented by Mr. Clay, chairman of the

Numbers for All.

WHILST we have heard little of late with regard to the numbering of motor-cars, a suggestion has just been placed before the Chief Commissioner of Police for the Metropolis, who is said to be giving it his careful consideration, to place *all* trade vehicles under the obligation of displaying a descriptive number corresponding to an entry in an official register. This obligation is at present only imposed upon cabs, trams, and omnibuses, and most constables acknowledge that they get ready obedience to commands to stop or otherwise from the drivers of such vehicles, but those in charge of other vans or cars are wont to defy or argue against their authority, and thus lead to some confusion in the road. The regulations providing that cars used by way of trade shall be inscribed with the names and addresses of their owners has been regarded as ineffective in securing that obedience to authority which is so essential in the crowded streets of London. Hence the proposal to number all trade vans of whatever kind. This should prove the last straw on the back of the numbering campaign, and altogether dispel the hope of some motorists that they may be allowed to go about the country numbered as though they were some particular "lot" just delivered from the auction room.



The Contingent of Brooke Cars at the Inaugural Meet of the Norfolk Automobile Club.

board and vice-chairman of Bass's, Lord Burton, and Mr. Worthington—all enthusiastic motorists. In his speech Mr. Clay stated they were building a car with two cylinders, a steel stamped frame, a new carburettor, magneto ignition, etc. The question of expansion was mentioned, and all arrangements for this had been made, the various speakers stating that further capital would be forthcoming as required.

Amateur Repairers.

BOTH Mr. Worthington and Mr. Bagguley are fond of working the various tools, and for some time before the above works were completed, a repair shop was maintained by the company. One

midday, after the workmen had left for dinner, a broken down 3½-h.p. Benz was brought in for repair, and was wanted by the travellers for use after they had finished their lunch, so what did these two gentlemen do? They simply set about the repairs, and within one and a half hours had completed them to their own and the motorists' satisfaction. Four shilling was charged, and the amateur mechanics were very proud of their two shillings each, money earned by the sweat of their brows. The sequel is told when Mr. Worthington at a Hunt Ball afterwards met the motorist, and mutual recognition ensued.

A Scottish
Motorist's Views.

MR. H. E. MOSS, who has been entertaining the members of the Scottish Automobile Club at Middleton, Gorebridge, on the occasion of the Club's first run for the season, has strong views with regard to automobilism. He does not think the limit system can endure. Nobody can tell exactly what the rate of speed is. "I saw," he has been saying to a Press representative, "that a policeman, in the witness-box, said the other day that a car was going at the rate of '17 miles an hour.' Now, how was it possible for him to ascertain that? I quite grant you that there are scorchers who bring discredit on the pastime—some reckless fellows who have no regard for road circumstances. With a clear road there is no harm in going at a reasonable speed, but on meeting untrained or restive horses it is most desirable that every motorist should exercise the utmost caution, or even stop and lend assistance in guiding the animals past. Every horse owner in his own interest should have his horses trained to motors. It is easily done. By and by I have no doubt the etiquette of the road will become better understood, and have something of the force of law. I am altogether against placarding cars with numbers, which, instead of leading to identification, might easily lead to

hardship and expense by causing errors. Many cases of this kind have occurred in France."

The Scottish Club.

To visit Mr. Moss the members of the Scottish Automobile Club (Eastern Section) assembled in Charlotte Square, Edinburgh, and proceeded via Princes Street and Clerk Street, the long line of cars being the object of considerable attention. Among those who took part in the run were: Messrs. John Macdonald, chairman, George Macmillan, Norman D. Macdonald, chairman of the General Council, Andrew Melvin, J. M. Inglis, R. Elliot Cranston, T. D. Rhind, J. Cruickshank, Thomas Sanderson, Charles Moss, W. L. Sleight, Councillor W. W. Macfarlane, John Lamb, Stevenson, A. Ure Barr, T. F. Ross, Hugh Clelland, and John Love. At Middleton Hall the party, which also included Mrs. James Moss, senior; Mr. and Mrs. James Moss, jun.; Miss Moss, and Mr. L. Moss; Treasurer Cranston and Mrs. Cranston; Mr. and Mrs. R. Crawford, Leith; and Mrs. R. Elliot Cranston, were entertained by Mr. H. E. Moss and his family. The afternoon was most pleasantly spent, and the Club arrived back in Edinburgh about seven o'clock.

The Red Flag Again.

THE Rev. James Boulton, of Wrangthorne Vicarage, Leeds, is seriously exercised in his peaceful seclusion at the busy scene to be witnessed on some of the outskirts of Leeds, where motorists pass along. He suggests that police should be placed at certain points of the Headingley and on the Leeds side of the main roads, carrying a red flag as in the case of railways, and we quote from the reverend gentleman's gentle epistle, "Let woe be to the man who ventures to pass that flag except at a very reduced pace." He suggests that fines should be totally abolished and a few months' residence in one of His Majesty's prisons be substituted for all motorists who have the temerity to go at a speed which he cannot appreciate and possibly does not understand. We had thought that the days of the red flag in connection with automobile matters had entirely passed away, and we do not think the suggestion is one to commend itself to the average policeman of the Southern Counties, who find the protection of some high hedge far more congenial than exposure on the public road, waving a red flag for the amusement of passers-by.

The Southampton Club.

THE Southampton County Motor Club is now in full swing, with a membership of twenty-four and an energetic hon. sec. in Mr. P. G. Headland, of Netherlands, Anglesea Road, Southampton, who will be pleased to hear from local motorcyclists. Starting from the Waterloo Road, Southampton, a run was taken to Winchester on Wednesday, and to-day (Saturday) the run will be via Hythe, Beaulieu, Lymington, Lyndhurst, and Totton. Wednesday and Saturday runs are contemplated, the destinations next week being Romsey and Salisbury respectively.

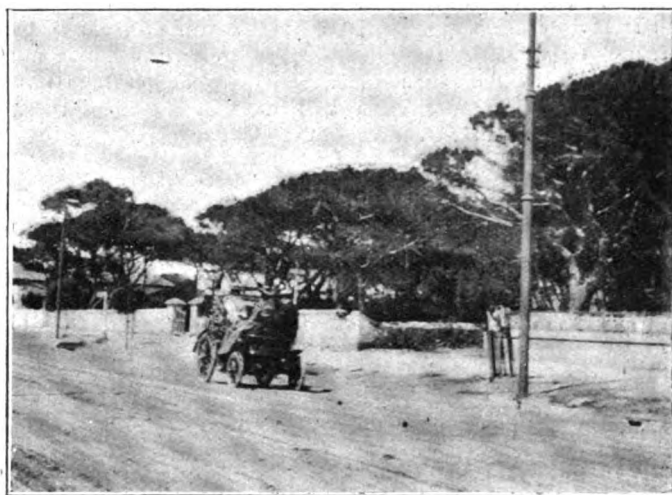
Lively Times Ahead.

THOSE motorists who journeyed to Brighton on Saturday and Sunday last, either by the Croydon or Reigate roads, seem to have had an exciting time, and the police, it is rumoured, secured the names and addresses of no fewer than fifty law-abiding motorists. Some of these victims were travelling so slowly that in sheer astonishment they pulled up even before the policemen were reached, wondering what was wrong. Then, to their amazement, when the third policeman appeared, they learnt that their car had been travelling anywhere between twenty-five and forty miles an hour. One of the traps was just beyond the end of the tram-lines, leaving Croydon, and notwithstanding, as one of the unfortunates informed us, he had, for the last few miles, been dodging on and off the lines to allow impetuous trams to pass him at thirty miles an hour, he was stopped for going at less than half that speed.

Other traps were between Reigate and the Horley corner, on a clear stretch of road without a house or pedestrian in sight, and here twelve smug-faced policemen valiantly arrested the paths of those pioneers who, while seeking health for themselves, are infusing the old life into our highways and byeways.

Ambulance Service.

THE Paddington Borough Council have addressed a communication to the London County Council urging the latter to consider the question of establishing an efficient service, either of horse or motor ambulances, throughout the Metropolis, and suggesting that the Metropolitan Fire Brigade stations might be conveniently utilised for the purpose of housing such ambulances. This is a step in the right direction, especially if the authorities interested in the movement recognise the most rapid and the most efficient method of locomotion in the provision of ambulances throughout the Metropolis.



A Snapshot at Sea Point, near Cape Town.

New Hope for Ireland.

ALTHOUGH the racing which is to take place in Ireland this year is perhaps the most popular aspect of things automobile at the present time, there is little doubt that we are on the eve of great developments in the Emerald Isle with regard to transit and transport generally. The forthcoming race will mean thousands of pounds to the people from the influx of visitors, but simultaneously with this there is going on a quiet and unostentatious movement which is likely to be of permanent value to the country. Some time ago we were able to announce that the Department of Agricultural and Technical Instruction for Ireland, of which the Right Hon. Horace Plunkett is the head, were quite willing to give every facility to projects for promoting motor-car services in the congested districts, but the exigencies of legislation have prevented them from going far in the matter, and at the present time the most hopeful scheme is that of which Lord Iveagh and Mr. J. W. Pirrie, of Belfast, are the moving spirits. These two gentlemen have formed an association for assisting Irish farmers in marketing their produce, and although the initial steps will be largely promoted by means of horse-drawn vehicles, the adoption of motor-cars will take place ere long. In several Kentish districts the conveyance of fruit by motor-vehicles to the London markets has been done with economy and expedition, whilst last season many of the fruit-growers of Worcestershire found the motor-vehicle very convenient, and practically the only means of getting their fruit to the market while fresh. So that there is already some experience on which to ground hopes of success.

The Suggested Scheme.

THE objects in view will be accomplished by means of—(1) Motor van services as and when required; (2) up-to-date canal boats; (3) existing railways, where they can be utilised; and (4) steamship services from the principal ports to London, Liverpool, Glasgow, Dublin, or Belfast, as the case may be. The motor-vans and other means of inland conveyance will carry the produce and goods to extensive depots, where the work of assortment, packing, and despatch will be conducted. There will be, according to the *Cork Constitution*, a general manager at a large central office in Dublin, a gentleman of great organising capacity and thoroughly conversant with the carrying trade. He will have entire control of the motor-van and other services, and will arrange that as far as possible there shall be no waste of mileage or journeys. At each of four large central depots there will be a superintendent responsible to the general manager, and a staff, including automobile experts, responsible for motor-car efficiency and for the handling of goods, to the superintendent. Farmers will be charged a reasonable rate for the conveyance of their produce, for which they will receive cash payments. The motor-van and car services will also be available for the products of corn mills, flax mills, timber mills, and other industries, such as the cottage manufacture of woollen goods now carried great distances to such centres as Carrick and Glenties, in County Donegal.

Sound the Horn.

Now that the touring season is commencing, and the roads are in a fit state to travel on, it behoves us once more to warn all and sundry of the necessity, when approaching cross roads and corners, to give audible warning of approach. If all users of the road do this there will be little fear of accident, but if the present reckless method indulged in by cyclists of swinging wide at a rapid pace round turnings is continued, then fearsome will be the results—not necessarily from cars, but from other cyclists. On Sunday last, at Worcester Park, Surrey, two cyclists thus collided, one being much cut about the head and face, and the other apparently injured internally, the cycles themselves seemingly smashed to pieces. A number of cyclists were present, and a good Samaritan in the shape of a clergyman, opposite whose Rectory the accident occurred, was in attendance, and so our car proceeded on its way.

Cycles and Motor Trailers.

THE motor-cycle seems to have brought into prominence the trailer, and the charm of the fact that a man is enabled to take his wife or sister with him when he goes touring is one that should appeal to all. But there is a black side to the picture, and that is the risk to the passenger in the trailer by the incautious travelling of the leader, who is liable to forget the attachment at the rear, and is apt to turn corners rapidly and capsize his passenger. Such an instance happened at Mitcham on Sunday, and both the lady and some of the spectators gave the cyclist a piece of their minds. As motorists we notice that the "combination" has a habit of keeping to the crown of the road, preventing other vehicles passing, and the reason of this, we imagine, is owing to the selfishness of the cyclist refusing to slow down with a view of moving to the side of the road. Such conduct should be avoided, and it should be remembered the road is for the use and enjoyment of the whole community.

Councillors Inciting the Police.

ACCORDING to Mr. George Clinch, the historian of Kent in Methuen's series of guides, many of the interesting features of Beckenham have perished in the process of expansion that has been going on there these last fifty years. But some archaic views prevail, and these have just been exhibited at a meeting of the local Urban District Council, where a councillor has declared motorists to be guilty of too speedy travel. The main arteries of the place were becoming as dangerous as level

crossings. Although the speed of motor-cars was essentially a police matter, it devolved upon them as public servants to see that something was done, and he (the councillor) ventured to move that the clerk be directed to communicate with the police, drawing their attention to the fact that they were dissatisfied with the condition of things and urging them to take more stringent practices to moderate the evil complained of. One having thus ventured, another councillor was emboldened to second the resolution, which found approval. Now that the police watch motorists and the councillors watch the police, the time is coming for motorists to watch the councillors—and so complete the circuit.

The Manchester Club.

THE second run this season of the Manchester Automobile Club was to Chester on Saturday last, and was attended by fifteen cars. The weather was everything that could be wished for, and there were no mishaps of any kind to mar the enjoyment of those partaking in the run. Dinner was served at the Grosvenor Hotel, some members returning the same night, others remaining over the week-end. Those present included Messrs. J. Arrowsmith, C. G. Borthwick, J. Bennett, C. Frost, T. W. Grace, A. E. Jones, W. Lloyd Jones, Livesey, W. McNeill, J. A. Morris, F. Smith, J. Hoyle Smith, hon. sec., L. G. Schwabe, and J. Stephenson, the cars represented being—Horbick, Cottreau, Progress, Belsize, Wolseley, Clement, De Dion, Daimler, and Panhard.

The Way to Bath.

Now that the electric tramway is being laid at Bath the road within two miles of the city on the London side is really unsafe for motorists. The surface is so loose in parts that car wheels sink four inches deep. To avoid this motorists can go through Bathampton to the left about two miles before reaching Bath. There, however, we believe, a toll of 3d. has to be paid.

The 60-h.p. Mercedes.

THE first of the 60-h.p. Mercedes arrived at Folkestone the end of last week. It was driven up to town by Mr. G. Higginbotham, the owner, and was stabled at the Regent Street Garage. The "sixty" differs somewhat from the "forty." The engines look magnificent, but to get the car within the 1,000 kilos weight many slight alterations have been made. Holes have had to be driven in the frame and many parts lightened until the car was a few pounds within the weight. A short run on the car convinced us it has all the charm of the forty, and, as the owner of one of the vehicles entered for the eliminating trials to-day, we felt thankful the "sixty" was not a competitor.

It has been decided to start the eliminating races from the inside of the Clipstone gates with a standing start.

THE General Purposes Committee of the Bermondsey Borough Council are considering the advisability of employing motor vehicles.

THE Prince of Wales has ordered an electric brougham from the City and Suburban Electric Carriage Co., Limited. This is His Royal Highness's third motor carriage.

ON the Canning Town track, on Wednesday, H. Martin beat the previous times for motor-cycles by riding eleven miles in 14min. 36.15sec., and twelve miles in 15min. 58sec., from a standing start.

THE Armourer Mills of the Lanchester Engine Co., Limited, Birmingham, owing to the greatly increasing demand for their cars, having proved insufficient, the company have taken another large factory in a central position.

THE following gentlemen have been elected as judges in the Reliability Trials of the present year:—Professor Vernon Boys, Professor Hole-Shaw, Lieut.-Col. Holden, Col. Crompton, Major Lloyd, the Hon. J. Scott Montagu, M.P., Messrs. Worby Beaumont, Lyons Sampson, Dugald Clerk, and E. H. Cozens-Hardy.

A NOVEL ELECTRIC CARRIAGE.



IN the novel electrical motor-car illustrated herewith the ideas aimed at are long wheel base, low centre of gravity, elegant appearance, and low cost of attendance. Of these the first two are attained and the third is a matter of taste upon which our readers can form their own opinions. The idea underlying the fourth was drawn from the inventor's experience of horse-drawn vehicles, in which the chief item of running cost was that of cleaning after use and the consequent wear and tear of paint and varnish, necessitating the frequent renewal of these. While engineers devote much time and thought to means for protecting their machinery from dirt and grit, the ordinary carriage builder seems to revel in exposing the most beautifully finished surfaces to all the mud and sand that can be thrown at them by rapidly revolving wheels and flying hoofs. Moreover, the construction is such that much of this foreign matter is lodged in intricate parts from which it is difficult and troublesome to dislodge it. An ordinary carriage and pair, for instance, is taken out in wet weather for an hour, during which four wheels and

wheel, and even the maximum does no harm except by offending the eye, an offence not committed when the wheels are almost hidden from view.

Under the conditions of construction described it was obviously necessary to have small wheels. Partly on this account, and partly as an experiment, a form of spring spoke wheel was designed—that is, a wheel in which the spokes are replaced by spiral springs having hooks at each end for attachment to rim and hub. To give stability these spring spokes are crossed in radial planes, or, in other words, those hooked to one side of the hub (which was wide and of a specially designed form to suit) have their other ends hooked to ears on the opposite side of the rim. The rims are of angle iron with solid tyres.

The motive power is electricity, the battery, consisting of forty-two cells of the Fulmen type, having a capacity of 120 ampere-hours, being carried in a box hung under the middle of the car, and the motor is of $4\frac{1}{2}$ horse-power normal, capable of working up to 7 horse-power for a short time. It is placed under the back seat, and drives by sprocket wheels and chains, the countershaft being geared direct to the main



Mr. J. Brown, of Belfast, on his Novel Car.

eight hoofs plaster it and its horses and harness with mud, taking a man two hours or more to clean off.

In the mechanically-propelled vehicle not only are the hoofs abolished, but there is an excellent chance of abrogating the evil of wheel splashing as well. In the car under consideration this is accomplished by enclosing the wheels under the body, each driver in a casing of its own, and the front steerers in a single forward compartment. The result is that the vehicle may be driven for any length of time over the muddiest roads and will remain as clean to all appearance as when it started, barring splashes caused by horses connected with other vehicles. Such splashes fall, however, not on intricate and involved constructions, but on plain surfaces, from which they can be removed in little more than as many minutes as the ordinary carriage takes hours to clean.

When we say "to all appearance clean" it is not forgotten that the wheels themselves get very dirty. So does every other carriage wheel in time. The chief difference is that in the present case the maximum amount of dirtiness is reached in a shorter time. More than the maximum mud cannot be stuck on any

driving axle, this being made possible by the spring wheels, which permit the axle to run in fixed bearings. The gearing includes two speeds, controlled by magnetic clutches, and these are increased to four by connecting the battery in series or parallel in the usual way. The controller is placed at the rear of the driver's seat and worked by the anchor-shaped lever at his left. The steering wheels are mounted on forks, bicycle fashion, and actuated by a steel cord on a drum on the steering wheel axle.

The motor, the gear, and the driving wheels are mounted on a strong angle iron frame in the rear. From this there extends forward a triangular frame, the apex of which rises in a swan-neck form to carry a crosshead, at each end of which are the bearings for the steering wheel fork-heads. On the middle of this triangular frame is hung the accumulator box. Upon this frame is placed the body, an entirely separate structure, which may be so arranged that after the removal of the steering axle and controller lever the entire body may be detached and lifted off, leaving the frame and all machinery completely exposed for examination or repair.

The general form and arrangements of the vehicle, for the illustration of which we are indebted to the *Motor News*, were devised by Mr. J. Brown, of Dunmurry, near Belfast, well known in scientific circles as an electrician, and to the automobile and cycling world as the inventor of the Viagraph, an instrument for testing the quality of road surfaces. The designing of the framing and machinery of the vehicle was carried out by Mr. Maurice Fitz-Gerald, M.I.M.E., Professor of Engineering in Queen's College, Belfast.

A NOTICE on the north gate of Arundel Park (Sussex) forbids the entrance of motor-cars and cycles.

THE Electric Battery Company has removed from Brixton to 180, High Holborn, W.C., where a plant for charging accumulators has been installed.

A LARGE garage, with inspection pit, etc., has just been com-

THE WHEEL BASE OF MOTOR-CARS.

IN nearly all the early automobiles the wheel base was what would now be considered very short, the wheels being spaced as in horse carriages, the dashboard coming about even with the extreme forward point of the front springs and wheels. As the speed of these cars was comparatively low, the mechanical disadvantages of this construction did not immediately become apparent. It may have been partly due to a desire of manufacturers to satisfy the public taste that in the now well-established makes of cars the wheel base has been gradually increased, but the chief reason for this factor in the evolution of the motor-vehicle is, remarks the "Horseless Age," undoubtedly a mechanical one. Every new model that was built was fitted with more powerful motors, and it was found that at the higher speeds thus made possible the vehicles had a



The Austrian Military Authorities Testing a Motor Car.

[Allgemeine Automobil Zeitung.]

pleted by Messrs. S. J. Bale and Co., of the Trafalgar Motor and Cycle Works, Newport Road, Barnstaple.

NEGOTIATIONS are in progress between the London General Omnibus Company and five makers of motor omnibuses for the provision of mechanically-propelled vehicles for London traffic.

THE Mayor of Southmolton (Devon) is urging the local Town Council to adopt new bye-laws regulating the speed of motor-cars passing through the borough. He regards the motor-car as "one of the biggest monstrosities of retrogressive civilisation."

MESSRS. FRISWELL, Limited, have been appointed sole concessionaires for Peugeot carriages in all the British Colonies, and have appointed Messrs. Rudge Whitworth exclusive agents for the Baby Peugeot for South Africa, Messrs. Turner, Hoare and Company for India, and Messrs. Schaefer and Company, of Wellington, for New Zealand.

very strong tendency to sideward slip on turns, and were not as comfortable in their riding qualities on rough roads as might be desired. Both theoretical investigation and practical tests demonstrated these two faults could be, if not entirely eliminated, at least materially reduced by the lengthening of the wheel base, and hence lengthening the wheel base has been the tendency among progressive designers. The question might be asked, what is a "long" wheel base? To this it can only be answered that the length of wheel base cannot be generally determined, but depends upon the width of the tread of the vehicle, the length of body, etc. Vehicles have been built in which the wheel base was only equal to, or just slightly greater than, the width of tread, which is entirely too short. For a vehicle intended for touring, a wheel base of one and one-half times the width of tread would not be considered too long, while one and one-quarter times the tread is certainly the lowest permissible.

THE IRISH FORTNIGHT.



A VIEW ALONG THE COURSE.

TO-DAY (Saturday) at Clipstone, on the estate of the Duke of Portland, the Eliminating Trial to complete the English team for the Gordon Bennett race will be held. Clipstone was, in the olden days, in the very heart of Sherwood Forest, and the Parliament oak, about a mile from the place, is probably one of the oldest trees in the district. The Duke of Portland's kindness in permitting motorists to go at their speediest on to estate is much appreciated, although the Clerk of the Weather was in such tearful

mood on the occasion of the last great trials on the Welbeck estate. On the kilometre over which the cars will run to-day some good records have been made, notably that of Mr. C. Jarrott equal to 80 miles per hour and the Hon. C. S. Rolls' more recent achievement. Mr. J. Lisle will drive the Star Car, and Mr. J. W. Stocks a Napier in to-day's trial.

In preparation for the forthcoming motor hill-climbing contests announced to be held near Castlewella, the Downpatrick Rural District Council, at their quarterly meeting, on the recommendation of the County Surveyor, voted a sum of £130 for specially repairing, by steam rolling and otherwise, the old road from Castlewella to Downpatrick, over which the hill-climbing contests are expected to take place. Castlewella is nine miles from Downpatrick, and from the park of the Earl of Annesley is

near Old Kilcullen, where the race will commence, and also the portion of the course as far as Carlow. According to the "Royal" Road Book, the road is exceedingly bumpy for the first three miles, but it soon improves, and is a very fair road all the way to Naas. Thereafter the road is fairly good, but has one bad piece shortly after Naas for several miles, to Kilcullen, when the surface again improves, and is in capital order all the way to Carlow. This is one of the best main roads, though it is not all that could be wished. The only hill of any consequence is a short one at Kilcullen (1 in 13, but not dangerous). The route possesses few interesting features excepting the Round Tower at Clondalkin, the Abbey and Rath at Naas, Old Kilcullen ruins, seen on the hill to the south of the present village, the Monastery Round Tower, and Cross at Castledermot, and the Court House and Ecclesiastical Buildings at Carlow.

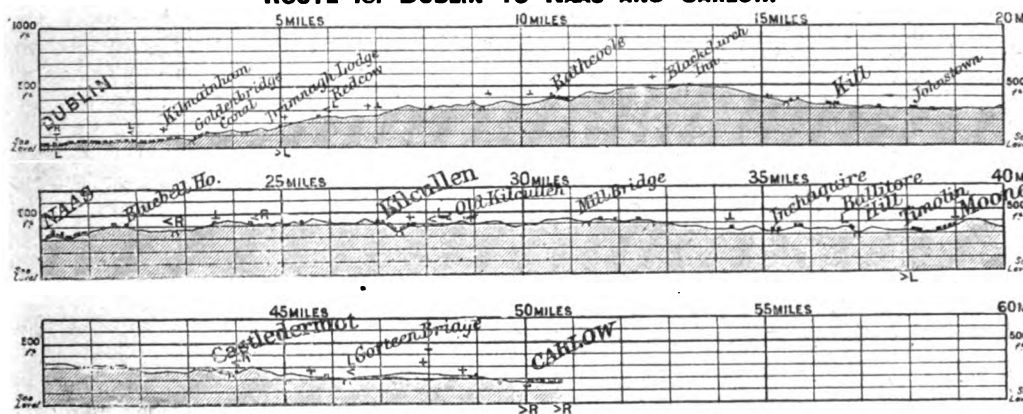
Table of Mileages.

Dublin G. P. O.
10½, Rathcoole.
16½, 5¼, Kill.
20½, 9½, 3¼, Naas, Town Clock.
27½, 16½, 10½, 7½, Kilcullen.
36½, 26, 20½, 16½, 9½, Ballitore.
43½, 32½, 27, 23½, 16½, 6½, Castledermot.
50½, 40, 34½, 30½, 23½, 14, 7½, Carlow, Ogle's Hotel.

A book setting forth the routes so succinctly as shown in this illustration will be indispensable to strangers visiting the Emerald Isle.

A MEETING of the committee in connection with the course was held at the Royal Arms Hotel, Carlow. Mr. W. G. Goff, chairman of the Irish Automobile Club, presided, and there were present:—Messrs. J. Orde, and R. J. Mccredy; Colonel Neville Chamberlain, Inspector-General R.I.C.; Sir Henry Robinson, Vice-President Local Government Board; Hon. Cyril Ward, Mr. C. J. Engledow, Burton Hall, Carlow; Mr. Edward T. Quilton, C.E., County Surveyor, Carlow; Mr. Edward Glover, C.E., County Surveyor, Kildare; Mr. Henry V. White, C.E., County Surveyor, Queen's County; Mr. H. W. Crane, County Inspector

ROUTE 10. DUBLIN TO NAAS AND CARLOW.



Signs: < Road Fork, forward journey, > ditto reverse, + Cross Roads, J Road Junction, O Bridge, T indicates a sharp turn.
The directions R (right) and L (left) for the forward journey are above the Road Line, those of the reverse, below.

an extensive view of the whole range of the Mourne Mountains. Downpatrick is the county town of Down, and is regarded as the most ancient in Ulster.

THE "Royal" Road Book of Ireland, published by Messrs. Gall and Inglis, of Edinburgh, will be indispensable to the motorist visiting the Emerald Isle. It gives a series of elevations of the roads, with measurements and descriptive letterpress, no fewer than 177 routes being detailed, particulars of the road and points of interest being given in each case. As an illustration of the scheme so successfully carried out in the book, we give an illustration of the way in which the route from Dublin to Carlow is dealt with, and would advise motorists going to Ireland to preserve this page. It shows the way from Dublin to the point

Kildare; and Major Bain, Acting County Inspector, Carlow. As a result of the deliberations of the committee, arrangements were made for the necessary repairs of the roads along the course, and an expenditure was authorised of about £1,500 for this purpose, including widening curves, making culverts safe, and improving the surface generally. Arrangements were also made for patrolling the roads on the day of the race, which will be carried out by constabulary located at intervals of fifty yards along the route.

SOME of the social events that are being arranged will prove attractive to the lady visitors, who will be glad to learn that the Earl of Dudley will probably hold a garden party at the Viceregal Lodge, Dublin, on July 4th. The gymkhana in Phoenix Park will also be a notable event, and Mrs. C. M. Lloyd, of Adding-

ton, has offered a twenty guinea cup for competition by ladies in connection with the series of races comprised in that event.

THE motor boat race in Queenstown Harbour on July 11th will take place under the rules of the Marine Motor Association, and it has been decided to hold an Eliminating Race on the previous day, should such an event be found necessary. The length of the course has been provisionally fixed at ten miles, and the length of competing boats is not to exceed 40 feet. Two hands are to be carried, the helmsman being an amateur. The entries will close a month before the date of the race. Queenstown Harbour, where the race will take place, can be reached by steamer from Cork, the passage along the River Lee being one of interest and beauty; or in about half-an-hour by the Great Southern and Western Railway. By road Queenstown is fifteen miles from Cork, the route being over St. Patrick's Bridge and along fairly level roads until the destination is reached, where some stiffish hills have to be encountered.

MR. J. C. PERCY, who will probably know as much as any man of the Gordon Bennett course before the race is finally run, draws attention to one possible danger which we hope will be adequately considered and due precautions taken, viz. the number of animals met straying about the roads. In the course of a recent jaunt over the course, Mr. Percy met many goats, donkeys, pigs, etc., to say nothing of hundreds of geese and other poultry, and their contrariness, led to some strange incidents. Seeing that the course is in a typical rural district, where animals unaccustomed to anything like speed abound, it seems absolutely necessary that, some day or so before the event, owners should be particularly warned to keep animals under proper control.

BANBRIDGE is on the direct road from Dublin to Belfast, and many cars will pass through the place after the Cup has been won. In the centre of the town are the Iveagh Engineering Works of Messrs. R. S. MacCormac and Company. These are about three minutes' walk from the Great Northern railway station, and are well equipped with plant for the repair of motor-cars. Messrs. MacCormac and Company will be glad to render help to motorists in distress. Banbridge is generally well stocked with petrol and motor spirit, and there are not likely to be any difficulties on that account during the Irish Fortnight.

In several Irish districts motor-car services are being proposed, and the necessity of improving the street locomotion of Waterford has led a correspondent to suggest that a public motor-car service should be inaugurated there. It could start from the bridge, follow the Quay to The Mall, go down Beresford Street, up John's Hill to Passage Road, and return, extending its journey at train times to the stations of the Dungarvan and Trawmore Railways. It might then be found feasible to run occasional cars to Dunmore and other outlying places.

At a meeting of the executive committee of the Cork Exhibition it has been decided to hold, in connection with the Automobile Fortnight, a three mile motor race from Wellington Bridge to Carrigrohane Castle, and a hill-climbing competition at Marlborough Hill, near the city.

MESSRS. WINTON and OWEN, two members of the American team, will sail for England on the Campania on May 30th.

THE Austrian Automobile Club will hold its annual hill climb up the Exelberg on the 3rd May.

THE Rhenish Automobile Club is organising a race from Mannheim to Baden-Baden for the 10th May.

PRINZ JOACHIM ALBRECHT of Prussia is making a tour through the Rhine district on a 20-h.p. Durkopp car.

THE Fire Commissioners of San Francisco have ordered a motor-car for the use of the Chief Engineer of the Fire Department.

THE Canada Cycle and Motor Company, Limited, of Toronto, are reported to have completed arrangements for the extensive manufacture of electric vehicles.

CONTINENTAL NOTES.

By "AUTOMAN."

THE weather during the past week in Paris was quite wintry; snowstorms, hail storms, biting blasts, and heavy clouds alternating with spells of bright sunshine. It has not been in the least degree automobile weather, and those courageous motorists who have braved the elements have brought out their thickest furs and wrapped themselves up as closely as possible. The skidding problem has been most difficult to solve, for, although the north wind dried up the snow and sleet soon after it fell, the changes came so rapidly and varied so much in different parts of the city that it was almost impossible to know when one's car would run up to a wet, greasy road. The utmost precaution in driving was necessary, as was witnessed by the numerous *teles a queue* which were to be seen round certain bad corners. There is one corner particularly where a good private view of a bad skid can readily be obtained on a greasy day—I refer to the corner of the Champs Elysees and the Place de la Concorde, which is paved with wood, and which is very smooth, with a slight incline down from the Champs Elysees. The road is so wide, and the corner looks so innocent, that many otherwise cautious automobilists coming round it at a smart pace find themselves facing round the opposite way before they know where they are. The majority of the cars which circulate in Paris, especially the covered ones, employ some kind of anti-skid or *anti-derapant*, as it is called in French; but I have not seen the Parson's chain anti-skid as yet on a car in the French capital.

As the date for the Gordon Bennett Cup race approaches, the interest in the contest on the Continent is increasing, and great preparations are being made. There is no doubt that the French will make a colossal effort to get the Cup back, and no sacrifice will be deemed too great to accomplish this result. Rene de Knyff will, of course, drive one of the Panhard cars, and the other will probably be driven by one of the Farman brothers. The Mors car, which completes the French team, will be driven by Henri Fournier. There is a project on foot to charter a special steamer of 3,000 tons burden, which will take the French cars over with their drivers and with complete outfit, so that nothing may be neglected, and, according to the *Auto*, which draws its information from a conversation with M. Emile Mors, the steamer is to be used as a hotel for the French competitors and spectators. It is even rumoured that preparations will be made on board this automobile boat for a banquet, after the competition has been concluded, to celebrate the return of the Cup to its first home. *Qui ritra verra.*

On April 11th, in my "Continental Notes," I spoke of the Circuit des Ardennes as being held on the 20th and 21st of May. This, however, is an error, as the date fixed by the A.C.B. is June 20th and 21st. The question of the dates of the different race meetings is an exceedingly awkward one, and steps will have to be taken next year to regulate, internationally, the dates for important meetings. The Circuit des Ardennes falls right across the Paris Automobile Congress, and also the hill-climbing trial of Laffrey. Efforts have been made to induce the A.C.B. to change the dates; but this has been impossible, on account of local circumstances in the Ardennes, where village-fetes and horse fairs in the different localities surrounding the Circuit have had to be considered in the final fixing of the event, which will, therefore, take place on June 20th and 21st.

THE patent question is looming again on the horizon, and will call for the serious attention of those who do not wish to see the industry, which is now developing itself in such a splendid manner since the Maybach action cleared the air, hampered anew by an old man of the sea in the shape of detail patents. Everyone will be surprised to learn that Messrs. Panhard and Levassor have made a descriptive seizure in Paris at a depot of the German

Mercedes car. I have no intention to open up or enter in any way into an inane discussion as to who had the first idea for this or that improvement; but certain it is that the Mercedes car has made a revolution in the industry, and, deny it as they may, almost every reputable maker is copying, or trying to copy it, in some way or other. Nine times out of ten, if a customer wants a new car, the salesman is ready with the answer that the special carriage which he has got to sell has certain features



A Panhard Touring Car outside the A.C.F., Paris.

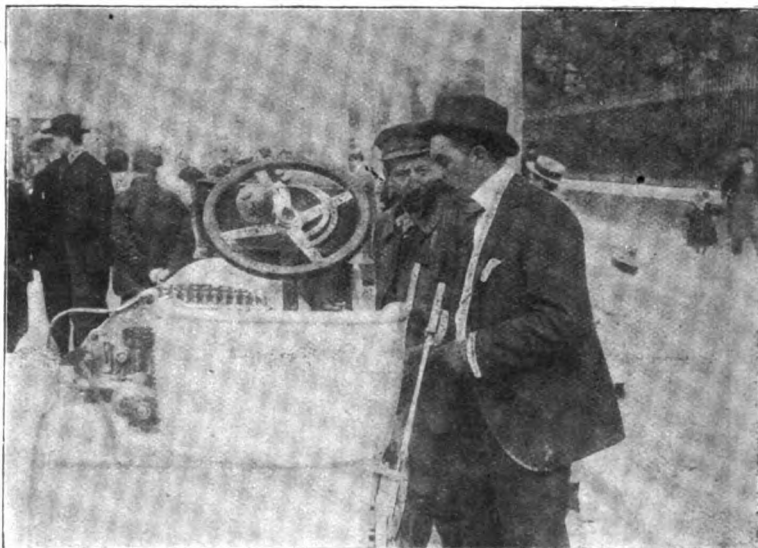
"like the Mercedes." It is, therefore, somewhat surprising to hear that a descent was made the other day by the bailiff, commissary of police, and an army of clerks on a Paris Mercedes depot, as the precursor of a lawsuit. Under the French patent law, if you suspect that a competitor is using goods which are subject to your patent, you have the right to obtain the assistance of the bailiffs and the police to swoop down on your competitor and examine the goods that he has got, and also inspect his books and "page" them—that is to say, the bailiff initials all the pages, so that the books cannot be destroyed or altered. A record is, therefore, on hand of the number of the supposed infringing articles used. The Cannstatt-Daimler Company are said to consider the whole thing as ridiculous, and, no doubt, they will take retaliatory measures. A straw, however, shows the way the wind is blowing, and those who have really the interest of the free, unhampered trade in England at heart need to take all the precautions necessary to prevent would-be monopolists from interfering with the English industry.

THE reliability trials of the Automobile Club of Touraine began on the 17th inst. There were only 20 competitors, but the meeting is interesting from the point of view of the rules that have been made for the classification of the cars, which have followed somewhat on the lines of those lately made by the A.C.G.B.I. The classification is to be made by the deduction of points from a fixed maximum under the following conditions:— (1) One point is to be deducted for every 1,000 frs., or portion of 1,000 frs., of the price of the complete vehicle in the maker's catalogue. (2) Five points are to be deducted for every centime of the kilometric cost of running. (3) One point per minute to be deducted for all breakdowns or stoppages, except punctures. (4) One point per 10 kilos of dead weight per seat. (5) Ten points per kilometre above an average speed of 30 kilometres per hour. (6) Two points per kilometre for any speed in hill-climbing less than 30 kilometres an hour. (7) One point per kilometre for any speed under 70 kilometres an hour on a level kilometre. (8) Up to five points each for comfort, elegance, silence, facility

of driving, verification of parts, and general appreciation by the jury. The competition consisted of daily runs of about 100 miles each from Tours, round the neighbourhood and back to Tours. Appended are the results of the competition:—

No.	Car	Average Speed kilometres.	Points lost.
1.	Georges Richard 14-h.p.	49.040	73.28
2.	Renault 14-h.p.	47.150	75.54
3.	Brouhot 12-h.p.	52.950	78.24
4.	Darracq 20-h.p.	51.680	81.63
5.	Delangère 16-h.p.	49.650	85.65
6.	Brouhot 15-h.p.	39.150	96.75
7.	Delahaye 8-h.p.	35.360	99.01
8.	Delahaye 12-h.p.	44.970	102.74
9.	Brouhot 10-h.p.	39.190	103.63
10.	Ader 8-h.p.	37.320	104.57
11.	C.G.V. 15-h.p.	52.040	114.07
12.	Darracq 16-h.p.	38.470	115.21
13.	Brouhot 16-h.p.	33.090	121.83
14.	Prunel 6½-h.p.	31.030	124.32
15.	Delahaye 12-h.p.	41.320	128.21
16.	Sage 20-h.p.	33.180	157.37
MOTOR CYCLES.			
1.	Bruneau, 2-h.p.	39.540	85.02
2.	F. N., 2-h.p.	42.940	92.38

ASTONISHING reports of accidents keep coming in. The latest has occurred in Italy, where, in turning a corner down hill, the car of a Mr. Vomwilli ran over the side of the road and was smashed up, fortunately without serious damage to the occupants. The extraordinary part of the occurrence is the account given by the driver of how the accident occurred. The car, it seems, was going so fast that it actually reared up on its hind wheels on account of the centrifugal force, and the front wheels being in the air it became impossible for the driver to steer. I have driven all sorts of cars, fast and slow, been in all sorts of difficult positions, including the ditch, but I must confess that I have as yet to have experience with a car which, contrary to all known theories, rears up on its hind wheels and careers along to destruction in this peculiar manner.



The last photograph of Count Zborowski—A Snapshot just before the start of the La Turbie Hill Climb. [La France Automobile.]

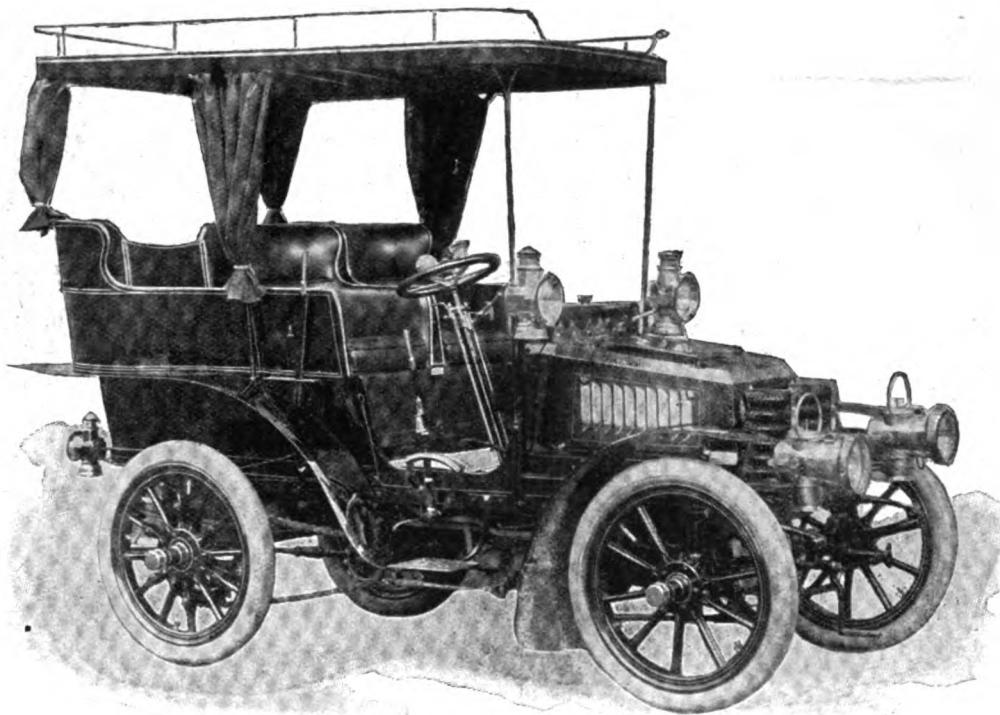
THE entries for the Paris-Madrid of the second category closed on the 15th inst., and the number runs up to 277. Amongst the last names I notice Lord Carnarvon, Mr. Arthur Du Cros, and Mr. Harvey Foster. The latter will drive one of the new 50-h.p. Wolseley racers. The entries with double fee will still be received up to the 16th May, and no doubt the third century will be reached.

SOME NOTES ON CYLINDER LUBRICATION.

IT must never be forgotten that, even for two engines of identical size and make, there exists no arbitrary standard of the amount of lubrication required. This depends essentially upon two factors: (1) the work performed by the engine, and (2) the efficiency of cooling. With regard to the first factor, generally speaking, less oil is required on a smooth, level, dry road than on a rough, hilly one, this being dependent on the fact that less mixture is used, less heat is generated, and less oil, therefore, consumed in the former than in the latter case. But the variation required is never great.

The aspect of the subject from the point of view of the efficiency of cooling is especially important to motor-cyclists, who mostly use air-cooled engines, and to drivers of engines cooled on the thermo-siphon system ("natural" circulation). Air-cooled engines which are in a favourable position for cooling use up far less oil than those less fortunately placed. Again, taking two engines of identical make and size, one cooled by

Now, it is an excellent practice, and one which cannot be too strongly recommended, for the owner of a new car to also swamp his engine with oil until the plug becomes foul, utilising the spark-gap to obtain regular firing. He should then gradually reduce the quantity of oil until a point is reached when the plug no longer becomes foul. The ideal lubrication point for ordinary conditions of work has then been found—that is, the point at which the engine is taking all possible oil without danger of sooty deposit on the valves, piston, or plug. But it must be remembered that, for maximum efficiency, the amount of oil supplied to the engine should vary somewhat, as already stated, in proportion to the work. Most makers prefer to recommend some particular brand of oil for their engines, and an extended experience has convinced the writer that their advice should always be followed. Should trouble be caused on the road by fouling of the plug through excessive lubrication, and no spark-gap fitting is handy, the excess of oil must be burnt out of the cylinder. This is done as follows: the inlet valve or the plug (preferably both) are removed, and a few drops of petrol are poured into the cylinder, a light being then



The "Century" 12-h.p. Light Car.

pump, the other by natural circulation, the former, according to the writer's experiments, will require just double the amount of lubricating oil of the latter.

An important point, and one which is frequently overlooked even by quite experienced chauffeurs, is the relationship of lubrication to compression. When an engine is being efficiently lubricated there is a film of oil between the piston, piston-rings, and cylinder wall which makes the joint sufficiently tight to prevent escape of mixture to the under-side of the piston, and so serves to maintain compression. If this film is absent or inconspicuous, there will be loss of compression, and since the oil is being continuously used up it must be replaced at the same rate at which it is consumed.

When an engine is first tested at the works before the car is delivered to the purchaser it is literally "swamped" with oil, a proceeding to which we owe the discovery of the action of the spark-gap at Panhard's works. The plug, of course, speedily becomes foul, and, as is now fairly well known, an observant workman noticed that when a small external gap existed in the high tension circuit a spark occurred simultaneously at the plug, no matter how sooty the points happened to be.

applied. The cylinder should be allowed to cool before pouring in the petrol. Of course, such a procedure requires great care, or a conflagration may result.

Never run an engine without oil. If the supply gives out on the road, get any kind that is obtainable; even salad oil will do, in lieu of anything better. Finally, it may be stated that it is better to over than to under lubricate.

TO-DAY (Saturday) the members of the Manchester Automobile Club will hold a run to Alderley Edge.

THE Birmingham Motor Passenger Company will run a service of motor omnibuses on the Hagley Road route from the 8th prox. Six vehicles, each to carry twelve passengers, will be run from New Street to the Hagley Road fountain. The Lord Mayor is to be asked to inaugurate the service.

MESSRS. HEWETSONS, LIMITED, have sent us a copy of the new catalogue issued by Messrs. Benz and Co., in which particulars are given of the new Benz-Parsifal cars with the two and four cylinder vertical engines. The catalogue is well got up and includes illustrations of the motor, change-speed gear, and other details.

SOUTH AFRICAN NEWS.

[FROM OUR OWN CORRESPONDENT.]

CAPE TOWN, April 1st, 1903.

AUTOMOBILISM is going strong at Johannesburg. Mr. A. Bailey has just received a 22-h.p. Daimler, and the business of the Johannesburg Motor-Car Company, Limited, has been purchased by Messrs. A. R. Atkey and Company, and will be carried on as the Johannesburg Motor Mart in Main Street and Kruis Street, Johannesburg. Mr. Atkey was the hon. sec. of the Nottingham Club, and came out on a visit to South Africa after the Welbeck trials last year. The garage at Johannesburg will be open day and night.

The first journey by motor-car from Kimberley to Bloemfontein has just taken place, Messrs. Kitchener and Day, of the former town, having done the journey between 10.30 a.m. and 7 p.m., with only one stoppage.

In Cape Town, the 12-h.p. motor-lorry of the Dunlop Motor Co. is a very familiar feature, and recently was taken by Mr. Donald Menzies on a trip from Cape Town to Clanwilliam, a distance of 156 miles, over varied roads. A three-ton load was carried and the daily mileage was between thirty and forty. In some places the gradient was 1 in 5 on a very loose road. Here

great difficulty in going down, the drivers tying their wheels up. Owing to the pneumatic tyres, it was of course impossible to tie the wheels, so Mr. Edwards inspected the gorge before proceeding, deciding to go down by inches, throwing the engine-power off, and leaving it in gear as an extra braking power.

After negotiating another heavy mountain pass, they drew up at the Stettin ostrich farm for lunch. From there they proceeded to Worcester over heavy sandy roads and sluits—ditches running across the road at right angles—arriving there at 5.15 p.m., covering the distance, omitting stops on the road, in three hours less than the post cart. On arrival they were fortunate in getting a fresh supply of petrol for continuing their journey. On the following day a river had to be forded. They dashed into it on the top speed, but when only a few inches from the opposite bank the car refused to move. After spending three hours trying to dig the sand away in order to give the driving wheels a chance, they succeeded, by reversing the car, in getting it out of the water on to the lower part of the bank, but the clutch, being wet, would not take the heavy incline up to the top of the river bank. After tramping along the road in search of assistance, a Kaffir with three donkeys trekking to Wellington was persuaded to help. Nearing the river again two mules were sighted, which were

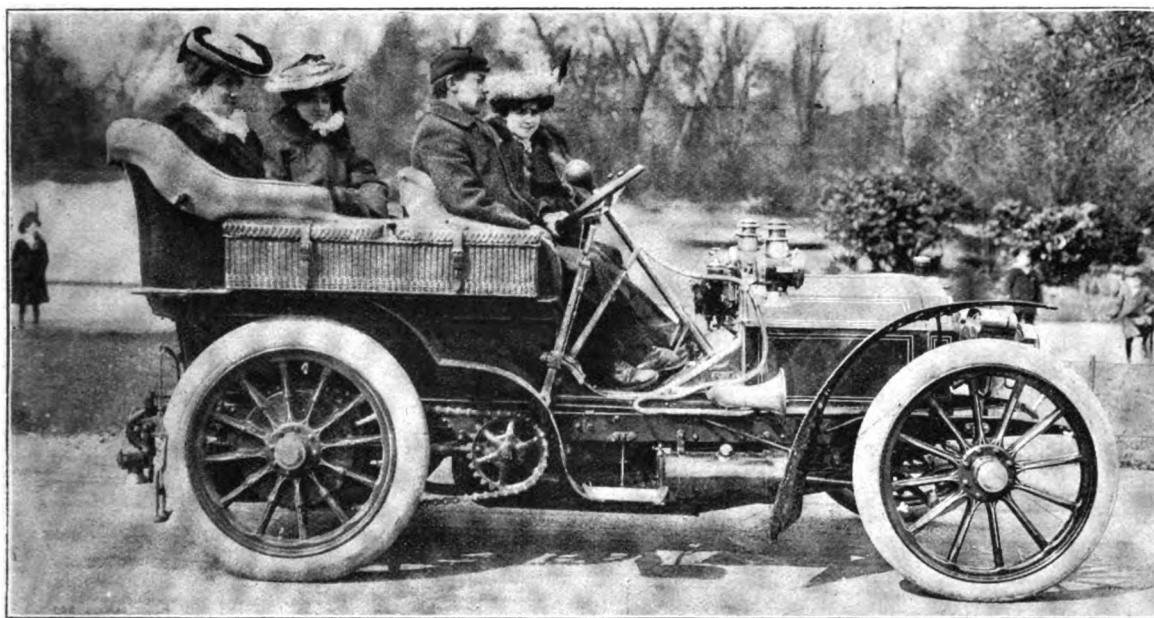


Photo by]

Miss Maggie May on her "Mercedes" Car.

[The Biograph Studio.

and there were stretches of sand which would threaten to capsize any ordinary wagon, but, though it took time, the lorry went through all right. On the return journey Mr. Menzies had only a load of 1,000 lbs., and came back in 3½ days with the lorry in excellent condition. This must be considered a very good result, for the lorry was only built for light town work. A vehicle specially built for country work would no doubt be found very serviceable, and up in the Prieska and Kenhardt districts, where animal traction is difficult at present, motor lorries should solve a serious question.

Yesterday I called upon Mr. Ernest Edwards, who has just returned from a 300-mile tour through Cape Colony on his 7-h.p. Panhard. He left Cape Town at noon on the 14th ult., and arrived at Caledon at 6.30. Starting at seven on Monday morning, the railway was crossed and the party proceeded over the heavy mountainous road to Villiersdorp, arriving there for breakfast. This was a very heavy part of the journey, but they were able to run without engine power down many of the steep mountainous roads. Between Villiersdorp and Worcester, near Leroux's farm, they encountered a heavy sand drift. Some farmers informed them that it would be impossible to proceed over the mountain roads ahead, and all carts and wagons had

captured and spanned in to the work, the donkey harness being used for the purpose. By dint of much hauling, pushing and digging, the car was got out after a delay of four hours. At night they were glad to get to Wellington, for they had been on the car 12½ hours without any refreshment.

On the following morning, Wednesday, a start was made for Paarl, and Cape Town reached the same day over a very fine road, which was most enjoyable after the drifts, ditches, grades and rivers encountered on the journey of 300 miles at a speed of three miles an hour on some occasions, and actually travelling twenty-seven hours with engines running. Only sixteen gallons of petrol were used for the whole 300 miles.

The motor trade is coming round nicely here. The Dunlop Motor Company with the Gladiator, Panhard, and De Dion agencies, the Rudge Whitworth Cycle Company with the Lanchester and Wolseley, the Continental Caoutchouc Company with the Benz, and the Raleigh Cycle Agency with the Oldsmobile and Reading steam car, all have their automobiles running here in Cape Town.

THE Dunlop Pneumatic Tyre Company are now supplying the "Rucker" motor tubes.

PRIVATE MOTOR-CAR STABLES.

THE motor-car being a more pretentious vehicle than the bicycle, cannot be conveniently kept in the hall or kitchen, so that the question of storage is one that has to be faced by all prospective purchasers of motor-cars, some of whom are held back by reason of the outlay needed for a stable. A little investigation, however, shows that the cost of housing an automobile is less than that required for a horse and carriage—ordinary conditions being equal, and, on account of the cleanliness of the automobile, the stable may be erected

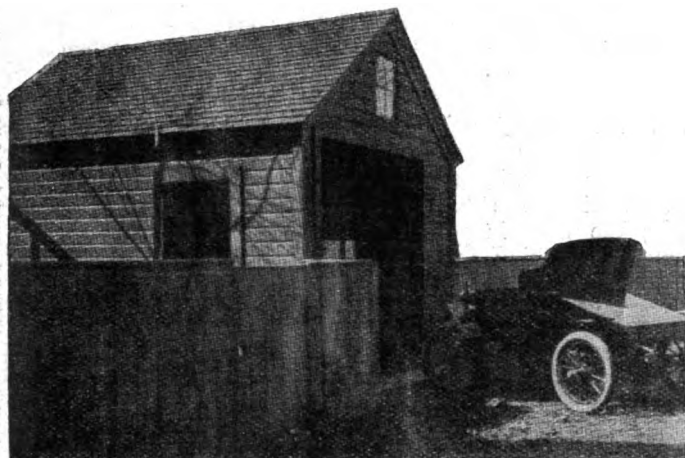


Fig. 1.

as close to the residence as desired. The regular expenses of maintenance are limited to washing the car and sweeping out the house. There are no extras except those met in the operation of the vehicle and heating the stable in winter if the car is used frequently during the winter months. The automobile house may be made as simple and cheap as desired, or it may be built as elegantly as the pockets of the motorist will allow. For the



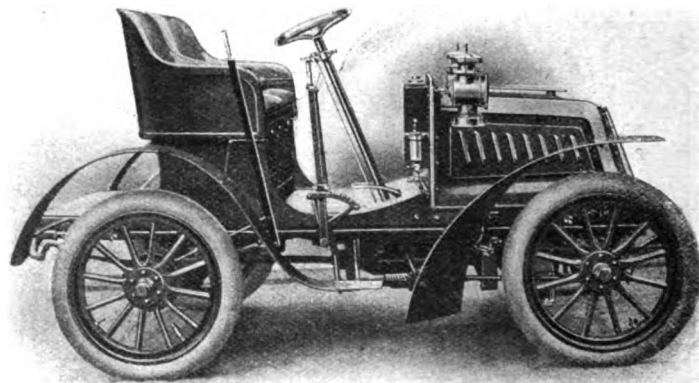
Fig. 2.

small one-car stable there are few requirements. There must be room in which to place the car and space to work round it on all sides. There should also be room for an extra car if possible. There should be plenty of light—consequently plenty of windows; while for artificial lighting at night electricity should, if possible, be installed. A work bench, water connections, and some arrangement for storing petrol safely are other necessary requirements. We reproduce from the "Motor Age" illustrations of two typical motor-car stables. The entire cost of the one in

the first picture was, according to our contemporary, less than £20. The stable is 12 ft. by 14 ft., is equipped with a work bench and tools, has a pump connection with the cistern, so that plenty of water is always at hand, and is lighted by electricity. The second illustration shows a combined stable and gymnasium, built at a cost of £160. The building is 18 ft. square, and affords ample room for a large touring car. The floor of the stable is made of cement, with a fall to the centre, where there is an outlet for water. Six windows provide abundant light in daytime, while electricity does duty at night. In one corner is a water tap, while a work bench is also provided. Under the staircase is a large closet, which provides plenty of room for storing miscellaneous parts, tools, etc. There are many motorists up and down the country who must have already settled the question of stabling their cars, and for the benefit of others we shall be glad to receive photographs of private motor-car stables, together with brief particulars of their size, equipment, and cost, for reproduction in the *Journal*.

THE "ROTHWELL" LIGHT CAR.

TO meet the demand for a popular-priced vehicle the Eclipse Machine Company, Limited, of Oldham, have lately introduced the "Rothwell" light car, illustrated herewith. As will be seen, it follows the now generally-adopted lines, the power being supplied by a 6-h.p. De Dion engine located in the front of the frame, under a bonnet. The water circulation is maintained by pump and radiators, while the speed



The "Rothwell" Light Car.

of the engine is regulated by the ignition and a hand-controlled throttle valve. Three speeds forward and a reverse motion are controlled by a single lever. The power is transmitted to a rear live axle through a cardan shaft and bevel gearing, the drive on the top speed being direct. The car has a wheel base of 6ft. 3in., while as to brakes, a pedal controls a double-acting one on the gear shaft, and a hand lever at the side actuates expanding brakes acting on the inside of drums connected to the hubs of the rear road wheels. Two bucket seats are provided, ample accommodation being available at the rear for luggage. The weight complete of the vehicle comes out at about 8½ cwt.

LAST week a 6-h.p. Regal car driven by Mr. J. H. Adams succeeded in climbing all the hills between London and Guildford on top speed.

BEFORE the Science Society of the City of London College Mr. Eric W. Walford is to read a paper on "The Motor-Car of To-day," on Friday, the 25th inst., illustrated by means of diagrams and lantern slides.

THE motor-bus placed in service by the Eastbourne Corporation starts from opposite the railway station and runs along Terminus Road, the Grand Parade, to the Pilot at Meads, returning via Meads Road, for a fare of threepence.

SOME USEFUL NOTES.

THE entire wiring of a car should be carefully examined from time to time for signs of wear in the insulation. At certain places the wires are exposed to continual, if slight, friction, which will ultimately break through the insulation and establish a short circuit. The timely application of a little insulating tape will often save much trouble in this respect.

THE heat of the exhaust pipe or silencer will melt the insulation of the high tension cable, if too close, and cause a fault.

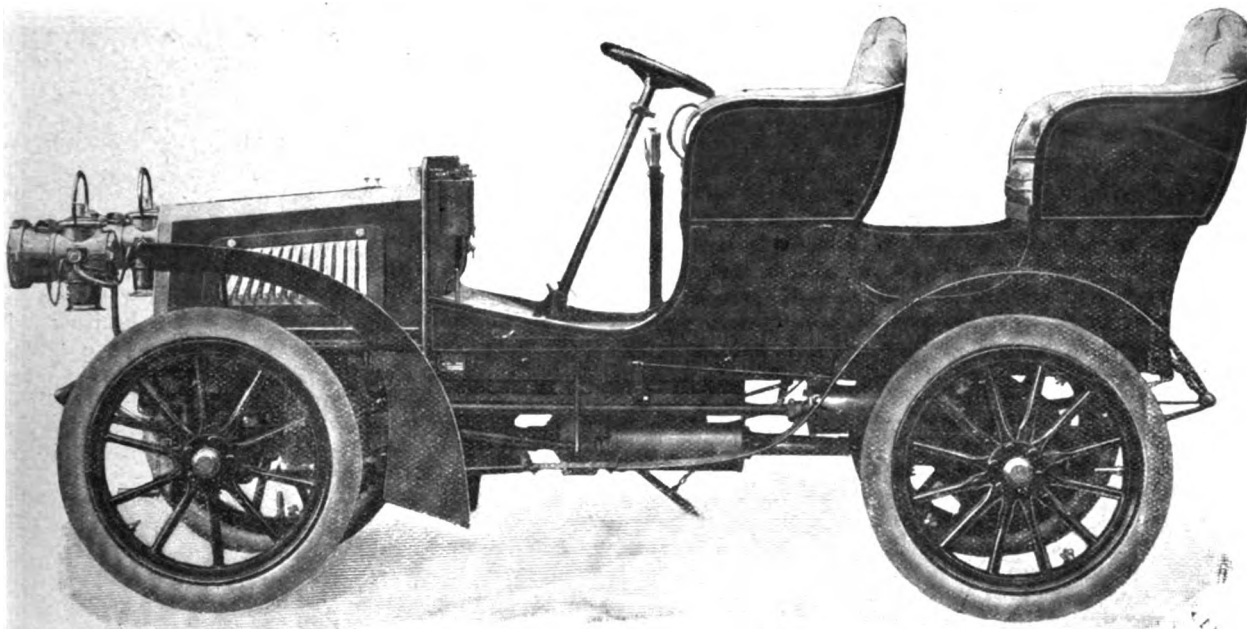
AFTER a car has been in continual use for some time, it is not a bad plan, if one has nothing particular to do, to thoroughly overhaul the cooling system, wash out the watertank and the jackets, and thoroughly cleanse the pipes and coils by means of a hose. It is wonderful what a lot of dirt accumulates after a spell of continual use.

IN a four-cylinder engine there are, of course, four wires to the contact-breaker or commutator; now four wires or four

very often a delusion. These lubricators, by means of copper pipes of extremely limited cross-section, are supposed to distribute the grease to the various bearings, etc., the pressure being applied to the grease by a screw. This sounds well in theory; but, if the various little pipes are disconnected, it will often be found that grease is only going through about two of them, the others being empty. If the hitherto empty ones are started by means of temporarily stopping the others, but still fail to work satisfactorily, the only plan is to use thinner grease. It is well to note this, as damage has often been done through some parts being insufficiently lubricated.

NOVICES in motor matters should be very careful to see that the ignition lever of their cars is retarded before they attempt to start the engine. Otherwise the nasty blow of a "back-fire" may be experienced.

IT is advisable for the newly-fledged motorist to practice on the brake, and learn to estimate both distance and the speed of the car accurately before using it in crowded thoroughfares.



The Benz-Parsifal 12-h.p. Vertical-Motor Car. (See issue April 4th, page 91.)

terminals can take up twenty-four different positions, and only one combination is correct, so it is as well to mark the wires when removing them, or to know how to replace them correctly, which, in reality, is not a very difficult matter. Rotate the engine-shaft and note the order the exhaust valves close, so that the order of working of the four cylinders is known. Now start with No. 1 cylinder. We will assume that the wire to the sparking plug has not been disturbed. Commence with the piston at the top (suction stroke), and turn engine shaft one revolution, put the commutator to late firing, and look at it carefully. It will be seen that one of the brushes is just on contact—*voilà tout*—one wire is correctly affixed, and the rest are done in the same way. Of course No. 1 commutator wire is found by earthing the wires to the frame till No. 1 trembler vibrates.

IT is well to remember that in the case of large high-powered cars that run every day of the week, one day should be set aside solely for the purposes of adjusting the engine, general overhauling, etc. If this plan were always adhered to, we should not see so many cars drawn up by the road-side having trivial adjustments effected.

THE grease lubricators found on the dashboard of cars are

BEGINNERS should make a study of the anatomy of their vehicles, or they never will become intelligent or satisfied motorists. The comfort of knowing how to repair any of the minor causes of stoppage can only be estimated when they come to grief miles away from any one capable of doing the repairs or adjustments for them.

FULLER'S earth, which can be obtained from almost any chemist, is a good dressing for a slipping friction clutch.

SOMETIMES a motor may suddenly stop from the failure of the exhaust valve to seat properly. This may be due to the warping of the valve through the engine having run dry and become too hot, or it may be from the failure of the closing spring or the sticking of the valve stem in its guides. The valve should be removed, and the stem cleaned and scraped—or straightened if it requires it—until it moves freely in the guide and the closing spring given its full tension. If the valve still leaks so that the engine will not start or develop sufficient power, the valve will have to be ground into its seat.

ONE should always be on the look-out for "squeaks," for any such unusual noise is evidence of lack of lubrication and generally foretells a breakdown unless heeded at once.

MOTOR-CYCLING NEWS.

It will be remembered that in our issue of the 21st ult. we published "A Novice's Experience of Motor Cycling," written by a motor cyclist who signed himself "A Satisfied Yorkshire Novice." In relating his experiences he mentioned that he had tied a seat on spiral springs to the rear of his 2½-h.p. tricycle, on which he



A Family Party.

carried two children, and that lately he had acquired a double trailer, in which, owing to the district in which he resides being flat, he is able to take his wife and eldest daughter about without difficulty. We are able this week to reproduce a photo of this family party. As Mr. J. H. Duke, the motorist in question, says, "It is marvellous what a 2½-h.p. motor will do when kept in good condition and repair."

THE annual general meeting of the Motor Cycle Union of Ireland was held under the chairmanship of Mr. R. J. Mecredy. The election of officers resulted as follows:—President; Mr. R. J. Mecredy; Vice-Presidents, Messrs. W. R. M'Taggart, J. B. Dunlop, sen.; Hon. Secretaries, Messrs. J. C. Percy and M. R. Wheeler; Hon. Treasurer, Mr. W. A. Wallen; Committee, Messrs. L. De Groot, J. B. Dunlop, jun., T. W. Murphy, L. R. Oswald-Sealy, F. Russell, G. J. Ball, W. Evans, W. G. Wilkinson, Dr. Lane-Joynt, E. F. Walker, and W. H. Green, with power to co-opt an additional member.

IN view of the success attained by the motor-cyclists in scouting and despatch work at Easter, we understand that Major Liles intends to organise a motor-cyclists' section in connection with the 26th Middlesex (Cyclists') V.R.C. Anyone desirous of joining the new section will do well to apply to the Acting Adjutant at the headquarters, 69, Lillie Road, London, S.W.

THE members of the Motor Cycling Club have been invited to luncheon with the vice-president, Mr. E. Kennard, at "The Barn," Market Harborough, to-morrow. It is intended to leave London to-day (Saturday), starting from Marble Arch at 2.45 p.m., calling at Old Salisbury Arms, Barnet, at 3.30 p.m., and journeying to Northampton. Members joining in the run will stay overnight at Northampton, and proceed to Market Harborough on Sunday morning.

THE American National Association of Automobile Manufacturers has appointed a committee to look into the question of how best to deal with motor-car mechanics. Similar committees will be appointed by the Automobile Club of America and the American Automobile Association. These bodies will probably act in conjunction to stop the collection of commissions by mechanics and to put a stop to them taking out the vehicles of their employers.

WE learn that during the week of the Agricultural Hall Motor-Car Exhibition the New Hudson Cycle Company, Limited, booked orders for no less than sixty-one motor-cycles.

ARRANGEMENTS are in hand for the formation of a motor-cycle section of the Lincolnshire centre of the National Cyclists' Union.

THE Dublin centre of the Motor Cycle Union of Ireland have arranged to hold the opening hill-climbing contest of the season at Glenamuck, on Saturday, 9th May. All machines must be fitted with mud-guards and silencers approved by the committee. Each rider will only be allowed one trial. The Union Gold Medal will be awarded to the successful competitors, and a facsimile in silver to the runner-up. The competition is confined to machines of 3-h.p. and under.

THREE different makes of English motor-bicycles will be represented in the Paris-Madrid race, the Bat, Humber, and Ormonde Companies each having entered two machines. The Bats are numbered 251 and 252, the HUMBERS 269 and 270, and the Ormondes 280 and 281.

THE motor-bicycle shown in the accompanying illustration is the production of the South Hants Motor Company of Portsmouth, who have named it the "St. Julian." In sending us the photograph, reproduced herewith, the makers state that "We have long been of the opinion that in order to develop the full power of the engine you must have vibration helping you along instead of checking the machine. With the engine placed between the wheels an enormous amount of power is wasted in overcoming vibration, while with the engine placed behind, the resulting gain of power is very marked. The vibration, again, is entirely confined to the back triangle, the rider and the steering wheel being entirely free from it, riding it being just like sitting on an ordinary free wheel bicycle. Owing to the weight of the engine being below the line of gravity (i.e., the two hubs of the wheels) we have, up to the present, found it impossible to make the machine sideslip. We tried



the machine up Portsdown Hill on April 1st, a wet, muddy day, without gearing up and with an ordinary 2½-h.p. Minerva engine, and, starting on the rise, a speed of 30 miles an hour was attained before reaching the top." In addition to those mentioned above, a number of other advantages are claimed for the new machine. We may mention, however, that the fitting of the motor behind the rear wheel is not a new departure, for on page 743 of the *Journal* for Jan. 26th, 1900, will be found an illustration of the Pernoo motor-bicycle, to which the St. Julian bears considerable resemblance.

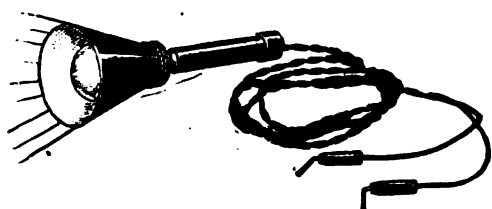
HERE AND THERE.

THE Lycett Saddle and Motor Accessories Company, Limited, has just been registered with a capital of £10,000.

THE "Pall Mall Gazette" wonders why no daily motor-car service between London and Brighton has been started.

A GARAGE and charging station for electrical vehicles is about to be opened in Curzon Street, Piccadilly, by the Electro-mobile Company, Limited.

MESSRS. W. J. BISHOP AND COMPANY, of Croydon, have lately brought out a useful little incandescent lamp for testing



the voltage of ignition accumulators and also for inspection purposes. As will be seen from the illustration, it is fitted with a protecting reflector and a plentiful supply of conducting cords.

THE Automobile Club of America has now a total membership of 418, of which 346 are active and 72 associate member. On the 1st March members owned 542 automobiles and had 147 under order.

A WELL-KNOWN motorist was recently heard to remark that half the "fun" in owning a motor-car is in being able to overcome all perplexing obstacles one's own self, and to be always master of the situation.

It is reported that an engineer from the Luneville Works of Messrs. De Dietrich and Co. is now in the United States for the purpose of locating a site for works for the manufacture of the De Dietrich cars in America.

THE Ordnance Survey have recently issued a folding pocket map of Salisbury and the surrounding district. This is one of the series of maps of certain areas in England and Wales on the scale of two miles to one inch, the publication of which has just been commenced under the authority of the Board of Agriculture.

THE London Motor Engineering Company, Limited, has been registered with a capital of £5,000 to carry on the business of engineers, makers and repairers of motor-cars, parts, and accessories, etc. The registered office is at 87a, Wellesley Road, Gunnersbury.

THE latest enterprise of Mr. Frank Morriss, of King's Lynn, is the purchase of an old and disused Primitive Methodist Chapel in the London Road. Once in possession, Mr. Morriss had the interior pulled out, the floor re-made, and the premises done up generally, to convert them into a garage capable of accommodating over thirty cars.

THE education of the motorist is a thing which cannot be completed in a minute; in fact, motoring is one of those matters in which experience is always being acquired. By this it is not meant that it is difficult to drive a motor-car, but as the driver of it gains his knowledge so will he become more and more satisfied with the results obtained.

MR. O. CHANUTE, the American authority on aeronautics, being in London for a short stay, the Committee of the Aero Club have invited him to be the guest of the Club at dinner at the Carlton Hotel, London, S.W., on Friday, the 24th inst. On Thursday he read a paper before the Aeronautical Institute descriptive of the progress of Aeronautics in the United States.

THE evening papers must be sadly in want of news when they chronicle such items as this:—London pawnbrokers are, it is reported, becoming quite accustomed to dealing professionally with motor accessories. Folks returning from a rural spin often

find themselves short of cash temporarily, so they find a pawnbroker's shop a most convenient solution of the difficulty.

MR. TIMBERLAKE, of High Street, Wigan, informs us that a few days ago he drove one of the 8-h.p. M.M.C. cars up Bank Brow, Upholland. The hill, which is over half-a-mile long and has a gradient of 1 in 5, is the steepest and worst surfaced road in the neighbourhood, and the performance has attracted much attention in the locality.

MESSRS. LONGSTRETH'S, Limited, the patentees and manufacturers of the Litanode system of electrical storage, have lately adapted the principle to ignition cells for petrol motor-cars. The 20 ampere-hour set weighs 8 lbs., and its dimensions are 4 inches square by 5½ inches high. The battery is fitted with overhanging terminals, which prevent the acid from so readily reaching them. The special feature of the Litanode accumulator is the extreme hardness of the positive plate, which is claimed to be absolutely unaffected by vibration.

ACCORDING to the present laws in Michigan, steam motor cars are required to carry planks for crossing bridges and to do several other ridiculous things that are wholly reasonable when applied to threshing machines. Senator Goodell fears that some day a country justice may be seized with a desire to enforce the law "as it is writ," and he has therefore introduced a Bill exempting the steam car from the provisions of the steam vehicle law.

MESSRS. MANN AND OVERTONS, Limited, inform us that they have taken up the agency for the Georges Richard voiturette. The car, of which during the last three years nearly a thousand have been sold on the Continent, is fitted with a 5½-h.p. water-cooled engine, three speeds forward and reverse, and will run up to 25 miles per hour. Two brakes are fitted, as also inclined wheel steering, and wire or wood wheels. In the 1901 Paris-Berlin race (tourist section), two of these cars covered the whole distance without trouble of any kind.

THE Electric Ignition Company, of Birmingham, have just brought out a new induction coil for use on petrol motor-cars. The principal new departure is found in the trembler, which, instead of being an oblong strip, is forked, each end having its



The Repairs Department of the New Works of the Ryknield Engine Co., Ltd.
[R. Keene.]

platinum tip. Instead of the usual single adjustable terminal above the blades there are two, these being so adjusted that the trembler has a slight rocking motion, this action giving, it is claimed, the same effect as an external gap in the high-tension circuit. A feature of the coil is that small lettered white discs are let in the case close to each terminal, while in the lid is one giving instructions how to adjust the trembler. The work of properly connecting up the coil in the circuit is thus rendered easy, even to those having no electrical knowledge.

LORD HASTINGS has ordered a 14-h.p. "Brooke" car.

THE Turin section of the Italian Automobile Club will hold its annual hill-climbing competition on Mont Cenis on July 5th.

MESSRS. R. AND W. BROWNSWORD, motor car agents, have removed from Lower Hillgate to 19-27, High Street, Stockport.

A RACE from Paris to St. Petersburg for 1904 is again being mooted in motoring circles on the Continent.

THIS season motor-boats are to be utilised at Penzance in connection with sea angling.

LIEUT.-COL. HOLDEN, R.E., F.R.S., has lately acquired a 10-h.p. Georges Richard car.

THE Continental Caoutchouc and Guttapercha Company are bringing out a non-slipping motor-cycle tyre.

MR. J. A. BRODIE, the City Engineer of Liverpool, has purchased a 10-h.p. M.M.C. car.

THE garage of the South Hants Motor Company at the Floating Bridge Works, Portsmouth, is open day and night.

PROFESSIONAL cyclists are said to have been enlisted in the police service of New York to chase the motor record makers in Fifth Avenue.

THE Midland Garage and Motor Agency in Station Street, Birmingham, has issued a list of charges, etc. A feature is made of private "loose boxes."

A PARTY of Bromley (Kent) tradesmen journeyed to Brighton the other day by motor-car for their annual dinner, returning the same evening.

THE motor department of Messrs. Pearson and Son, Limited, in Market Place, Nottingham, has recently been considerably extended to cope with the growing business.

THE Belgian State Railway authorities are reported to be about to adopt motor wagons for the transport of goods in Brussels, Antwerp, and other large towns.

A PROPOSAL is being considered by the members of the Automobile Club of America to hold a parade of automobiles in New York in May, to give the people an idea of the increase in the number of power vehicles in the city.

COUNT ZEPPELIN has announced his decision to abandon the attempt to solve the problem of the steerable balloon. The shed on the shore of Lake Constance, and all the materials collected are offered for sale by auction. Count Zeppelin sold his family estates, spent his entire fortune, sacrificed twenty-five years of his life, and now in his old age has to admit that he has failed.

FREQUENTERS of Holborn are made daily familiar with the motor-car by the presence of several vehicles outside the show-rooms of Messrs. A. W. Gamage, Limited. A re-arrangement of the premises has lately been made, and a large central hall is being devoted to the display of light cars and accessories; hence the frequent presence of motorists in the vicinity of the establishment. On the occasion of a recent call, the manager deplored the absence of the Gamage voituresses, for since they were shown at the Agricultural Hall Exhibition it has been difficult to keep an adequate stock, so persistent has been the demand. The firm has brought out a new motor-cycle lamp with an oval front and a hood preventing the brilliant light obtruding itself on the face of the rider. A neat accumulator case has been introduced, in which a lining of tin secures the life of the case, thwarting the destruction of the leather with which motorists are familiar. Flaps of rubber are provided at the top of a sufficient depth to prevent any ill effects from the presence of the metal, the whole being an arrangement conducive to the durability of the case. Several stylish novelties for ladies' wear are to be seen in the clothing department, a neat net to protect the hair when motoring in windy weather being notable. Altogether a complete range of motor accessories and parts is to be seen at Messrs. Gamage's, who are developing their motor business to good proportions.

CORRESPONDENCE.

THE NEW ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—On Sunday I motored from Lincoln to Bury via Manchester. Upon arrival at the latter town I made for some tea, calling at the Imperial Hotel, Piccadilly, the first hotel coming into the city. I was refused the meal asked for as I could not show a return half of a railway ticket, and was informed that this was necessary under the new Act. The hour was 5 o'clock in the afternoon. Perhaps other motorists will give their experiences elsewhere.—Yours faithfully,

CHESTER FOX.

THE ABOLITION OF CHANGE-SPEED GEARING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Much blowing of trumpets has taken place in the daily press anent a French car built with eight cylinders for the purpose of endeavouring to attain the elimination of change-speed gearing. We are told of the wonderful facility with which the new car can be manipulated, gliding from slow to fast, from fast to slow, silently and instantly by a movement of the throttle lever alone. We are told of the wonderful flexibility of the engine, with its speed range varying from 250 to 1,500 revolutions per minute, and we are further told that a low second or reserve gear is found necessary and a reverse. The results obtained are heralded as something quite new and showing the marvellous improvements recently effected by French manufacturers of motor-cars. Whilst not desiring in any way to deny that such results as those stated are obtained in the new car, we desire to point out that they are no more—if anything rather less—than have been obtained by Mr. Duryea since 1897. Mr. Duryea obtained the same result with three cylinders, securing a greater range of flexibility, viz., from 150 to 1,500 revs. per minute. He does it without the use of countershaft, drive shaft, or bevel gearing, with a single chain.—Yours faithfully,

H. STURMEY.

PUBLIC MOTOR-CAR SCHOOLS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Are there any privately owned places in London or the suburbs where an amateur can learn to drive and control a motor vehicle? I am anxious to buy a car, and with this in view have been favoured by several firms with "trial trips" on their cars. But, of course, I was not allowed to drive the vehicle myself, and I fear that if I do purchase one I would make a fool of myself if I tried to learn to control it on the public streets, and possibly be held liable for manslaughter or some less serious crime, owing to the damage done to his Majesty's lieges.—Yours truly,

WOULD-BE MOTORIST.

HEAVY OIL MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In view of the trouble that is apparently being experienced by users of petrol cars with regard to the quality of petroleum spirit now being supplied, it is *apropos* to put the question as to whether any progress is being made with regard to the use of ordinary petroleum for the motors of automobiles. I notice that Messrs. Roots and Venables are still making vehicles with heavy oil motors, but apparently they have the field entirely to themselves. Some years ago a good deal was heard in France of a heavy oil car known as the Koeh. It appears, however, to have dropped out, for I failed to come across it at the last two *Salons* in Paris.—Yours truly,

PETROLEK.

THE SPECIFIC GRAVITY OF PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Knowing your interest in all matters pertaining to automobiles, I think it right to inform you of a very curious trouble which I have of late been experiencing.

During the last week my engine has been continually missing; it would, for instance, take the beginning of a hill in splendid style and then all of a sudden it would miss two or three times, necessitating my dropping to a lower gear, which, when all goes well, is quite superfluous. I tried everything—ground in the valves, overhauled the ignition, etc.—but all of no avail. Last night I compared notes with two friends, who drive different makes of cars, and they both informed me that they had not been able to move, as their engines had been continually missing, and all their efforts had been of no avail. One of them tested his motor spirit, and found it .720; he then put in some petrol, which test showed to be .685, and he came home from Worthing without a single miss. In case other motorists have been similarly troubled, it might be of interest to record the above facts in your valuable columns.—Yours truly,

A. E. COHEN.

LETTERS on the subject confirmatory of the views of other correspondents have been received from Mr. J. H. Knight and Mr. W. S. Smith.—ED. M.C.J.

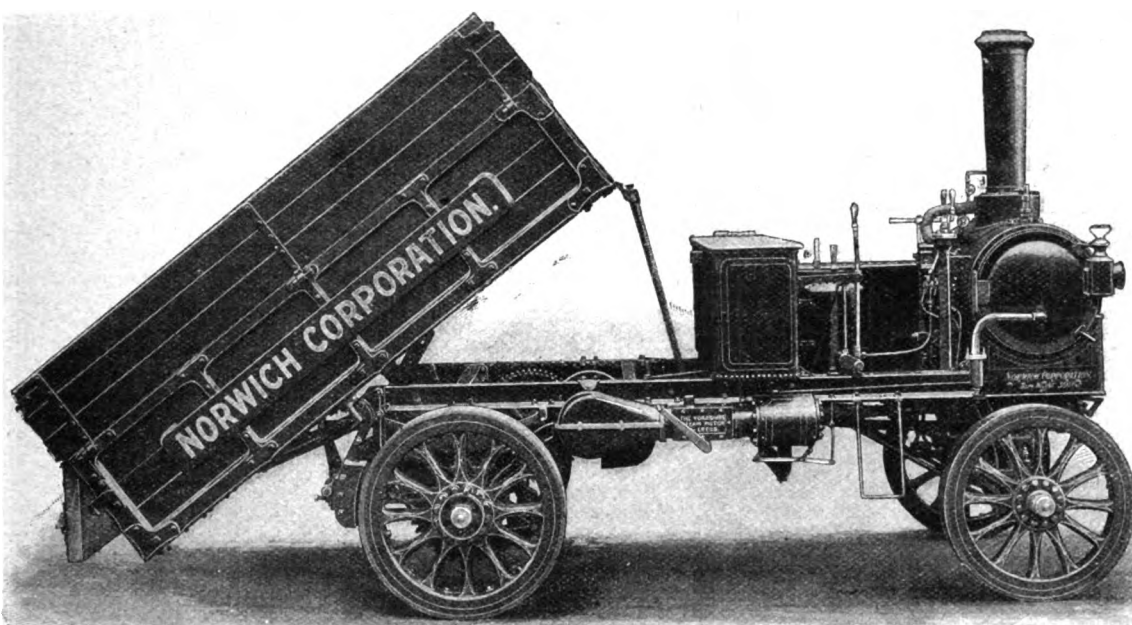
ENQUIRER writes:—"Would any of your readers with experience in motoring give me their opinion on the suitability of a car or motor-cycle for canvassing work? The roads I travel are hilly and not well kept. I am afraid the cold weather would cause rheumatics in my legs—have had them before—were I to ride a motor-bicycle.

THE CLASSIFICATION OF MOTOR CYCLES.

REPLYING to Mr. E. H. Arnott's recent letter, Mr. J. Van Hooydonk writes:—"To anyone having the handling of motor-bicycles, it must appear a most unsatisfactory, not to say crude, method of classing machines by simply putting the whole lot on to the scales, and classifying by the result. The dangerously light machine to which this would lead could only have an ending in serious accidents. If Mr. Arnott thinks that, handicapping motor-cycles must be very much a lottery, surely the matter is one worth working out on some scientific basis at first, which would be assisted by experience afterwards, in preference merely to adopting the weight classification because this has been done on the Continent. A case in point:—When I entered for the kilometre race at Bexhill in 1902, I rode down by road on a heavy machine, equipped with comfortable saddle, spring handle-bar and seat-pillar, wide mud-guards, and other little additions which went to make the machine what may be fairly termed a 'touring bicycle.' As it was, however, the machine was not eligible for the tourist class of 112 lbs. All I had to do was to take off the brake, mud-guards, spring bar, and seat pillar, and, instead of the heavy comfortable saddle, use one made of a piece

"I have in my experience had many purchasers of Continental and American-built motor-bicycles, who have been attracted by the apparent light weight of the machines, bringing them to me to—what can only be properly described—make them fit to ride. Front forks had to be strengthened, levers were merely bits of bent tin, and had to be replaced, sensible mud-guards and saddle had to be fitted, and brakes rendered so that they were really of use on the road. In my opinion, there is no doubt whatever that this keeping down of weight was responsible for these required alterations.

"May I state another experience? In the race of the Circuit des Ardennes last year, of which I was a spectator instead of a competitor, owing to an unfortunate accident the previous day, I saw about twenty-four motor bicycles, all of Continental build, start. Most machines had very powerful motors, but the machines complete were built to come within the 50 kilos class. The bulk of the machines made a sorry sight. Petrol tanks, sufficient for about only half the journey, were fitted. A small accumulator was strapped on to an odd part of the machine, bits of wire were used for levers, electrical wires were slung on just anywhere, yet motors large enough to propel a small car were used. Most of the starters did not return at all, and of those that did go through, the fastest only averaged about 32 miles an hour. No doubt the weight question had a great deal to do with this, every manufacturer having sacrificed everything to engine power. This is just what would happen over here were Mr. Arnott's suggestion adopted, and the advancement of the motor-bicycle, or perfecting of the engine, which really amounts to the same thing, would not be assisted in any way. My own belief is that, once a given capacity of engine is settled, or even the



The Steam Motor Dust Wagon lately supplied to the Corporation of Norwich by the Yorkshire Patent Steam Wagon Co., Leeds.

of boarding and some sacking, which brought the total weight of the machine within the limit specified. I was allowed to start as a tourist. A more absurd proceeding can hardly be imagined.

"In my opinion, now that motor-cycles are still very much open to improvements, the objects of races and trials should be to actually get at the efficiency of the engine. This is what we have to deal with. A strong bicycle is not much of a novelty to us now. Two ways of arriving at this result offer themselves. One is the cubic contents of the cylinder, or weight of the engine alone. Mr. Arnott's own arguments go to prove this. If, by raising the compression, increasing the weight of fly-wheels, etc., increased efficiency can be obtained—well, these matters have their limits, and it is only when a standard size of engine, as regards cubic contents of cylinder or weight of metal in the engine, shall be decided upon that the many minds now occupied with the subject will not be long in bringing the power to be obtained from either so much gas or so much metal to its rock bottom, giving us the most efficient engine that can be made. The high standard of efficiency now to be found in ordinary bicycles has been arrived at in a similar manner, i.e., the most possible had to be made of the one-man power at our disposal. My argument, therefore, is, bicycles we know, engines we have got to know as well. Surely this is worth striving for. Light bicycles, having powerful motors fitted to them, have already been the cause of, at least in one case to my knowledge, fatal accidents, and I cannot too strongly condemn the principle of offering any inducement whatever to foster the building of such machines. This, apart from the fact that a certain amount of comfort is not only desirable, but necessary, in a motor-bicycle, which comforts, of course, entail some little additional weight.

total weight of metal in an engine allowed, everyone will make the very best of the capacity or the material at his disposal, and the most efficient motor will result."

MOTOR-CAR ACCIDENTS.

At the Dublin Police-court on Saturday the charge against the Marquis of Downshire was withdrawn. It had been alleged that he had negligently managed his motor-car in Lower Dorset Street, Dublin, with the result that an old woman named Elizabeth Magee was knocked down and fatally injured. When the case was mentioned the Attorney-General's representative stated that investigations that had taken place had convinced the Crown authorities that the event which led to the old woman's death was an unavoidable accident.

"TREAT the matter as an ordinary street accident, and without any feeling which may be said to exist against motor-cars generally." That was the advice which Mr. J. C. Malcolm, the Leeds City Coroner, gave to the jury at the inquest in Leeds Town Hall on the body of John Alderson, who died in the Infirmary as a result of injuries he received by being knocked down by a motor-car driven by Mr. W. E. Nicholson, of Moorfield House, Headingley. Several witnesses testified to the fact that the car was being driven at a moderate rate, and after Mr. Nicholson had given his testimony to the same effect, the jury returned a verdict of "Accidental Death."

On Monday, Mr. Jetcham, coroner, held an inquiry at Brightwalton into the circumstances attending the death of Master C. C. Wroughton, aged thirteen, son of Mr. Wroughton, of Woolley Park, near Wantage. The

evidence showed that on Saturday the deceased, accompanied by the Rev. W. Boldero, of Newbury, left Woolley Park, both riding motor-cycles. Deceased rode in advance of Mr. Boldero, and on reaching the entrance to the town, where there was a junction of several roads, a collision suddenly took place between deceased's machine and a motor-car driven by Mr. E. B. Ormond, solicitor, of Wantage, who was proceeding at not more than four miles an hour. The result was that deceased and his machine were thrown under the motor-car, and he died shortly after. The jury returned a verdict of accidental death, and exonerated from blame all persons concerned.

ON THE FOOTPATH.

At Towcester, Felix Greville, Highgate, London, was summoned for riding a motor-bicycle along the footpath, at Towcester, on the 28th ult. Defendant did not appear. Service of the summons by affidavit having been proved, Police-constable W. Packer gave evidence to the effect that he saw defendant ride on the footpath for over 400 yards. Defendant readily gave his name and address, and he said that he rode on the footpath because the road was so dirty and he was afraid of his machine skidding. Fined 10s. and 6s. costs.

FURIOUS DRIVING CASES.

COUNT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Leeds	F. E. Asquith, Leeds	20 m. p. h.	£5, etc.
Watlington... Oxon	W. L. Creyke, Oxford	—	£10, etc.
Blofield ... (Norfolk)	H. Ellis, Burlingham	18 m. p. h.	£1.
Hove	S. Daver, Battersea	37 m. p. h.	£1, etc.
"	*L. S. Bidwell, Kew	26 m. p. h.	£2, etc.
Shoreham ...	*V. P. Leite	33 m. p. h.	£2, etc.
"	E. Miller	22 m. p. h.	£5 7s.
"	J. Jenkins	20 m. p. h.	£3 7s.
"	C. T. Cutler	22 m. p. h.	£3 7s.
"	C. R. Crompton, Nottingham	—	£3 7s.
Brandon	J. Hersler, West Tofts (Norfolk)	—	£3 5s., etc.
Watford	G. C. Stunt, Milbank	30 m. p. h.	£5, etc.
Godalming ...	P. Suffield, Portman Square, W.	—	£7 10s. etc.
Stroud	W. Beadle, Birmingham	27 m. p. h.	£5, etc.
Epsom	B. Knettner, Euston Square, N.W.	—	adjd.
Gloucester ...	R. G. Forghan, Birmingham	20 m. p. h.	£1, etc.
Neath	G. Thomas, Swansea	—	10s., etc.
Chichester ...	F. R. Harris	30 m. p. h.	£2, etc.
Horsham	S. Noakes, Croydon	26 m. p. h.	£2, etc.
Kingston	V. Miller, Piccadilly, W.	24 m. p. h.	£3.
Lynn	H. W. Smith, Bowden	—	£6, etc.
Loughborough	*J. Oldershaw, Leicester	—	20s.
St. Albans ...	E. Carpenter, Willesden	—	£5.
Southport ...	J. Kershaw, Southport	—	10s., etc.
Blackpool ...	*S. Black, Blackpool	24 m. p. h.	10s., etc.
Landaff	*T. R. Evans, Pentre	20 m. p. h.	20s., etc.
Colchester ...	C. Burchell, Manchester Square, W.	27 m. p. h.	£1, etc.

Where no alleged speed is given it is understood to be above the legal limit.
* Motor-Cycle Cases.

IN the case against Mr. Creyke, Superintendent Cooke handed in a statement showing four previous convictions.

THE case against Mr. Knettner was adjourned at defendant's request, owing to his wedding necessitating his attendance elsewhere.

JOHN HERSLER, motor-car driver to Earl de Wilton, of Buckenham Hall, West Tofts, was summoned at Brandon Petty Sessions, for driving a motor-car at an excessive speed, on the Thetford road, Brandon, on March 14th. Sarah Edwards stated that one of her children was in peril of its life, and as the car came up another child pulled her child out of the way. A toy horse was broken by the car. She did not hear a horn. Inspector Reeve informed the magistrates that on the same evening he cautioned defendant in passing the Town Bridge. The Bench found he had been fined once before for a similar offence, and now he was fined £3 5s., and costs, 15s.

THE STORAGE OF PETROL.

THE Graphic Motor and Engineering Company, Limited, of Blenheim Grove, Peckham, has been summoned at Lambeth by the London County Council for contravening the regulation under the Locomotives on Highways Act, which prohibits the storage of petroleum on premises where

persons assemble. For the defence it was stated that it was impossible to carry out the repair of motors without having some petrol upon the premises. If the contention of the Council were correct it would seem to lead to the conclusion that petrol could not even be kept in the tank of a car if it were in a workshop. The magistrate said that without wishing to do anything detrimental to the motor industry, he thought there was not the slightest defence to the summons. It was not necessary, however, in this case to inflict anything more than a nominal penalty of 20s.

At Wolverhampton the Star Engineering Company have been charged with an offence under the Petroleum Act. It was stated that the defendants, without a license, kept 200 odd gallons of petrol in a corrugated building within eighteen feet of a store-room. A fine of £10 and costs was imposed.

POLICE TRAPS.

THERE is a measured mile on the Chichester and Selsey road.

A POLICE trap has been established on the Brighton Road between Albourne and the bottom of Dale Hill.

It is reported that the police authorities of Waterford are measuring the main streets of the town as the first step towards adding to the local revenue by the fining of motorists.

THERE is a telephone trap between Lyndhurst, in the New Forest, and Totton, Southampton.

Owing to complaints having been made as to the furious driving of motorists along the level road approaching the Caerleon Bridge, a Monmouthshire county inspector and a constable were on Sunday stationed on the bridge. Strange to say, contrary to recent experience on Sundays, only one car passed that way. This the inspector stopped, and the owner's name and address were taken for alleged furious driving.

At Southwick, the Sussex police have a measured distance, and between Shoreham and Kington-by-Sea they have been very watchful of late.

On the Norfolk roads policemen on bicycles are now engaged in the pursuit and capture of motorists travelling at "forty miles an hour," etc.

THE MOTORIST'S SOLILOQUY.

MR. R. MOFFATT FORD has received the following lines, written, with apologies to the late Prince of Denmark:—

To stop, or not to stop; that is the question.
Whether 'tis wiser for a guiltless driver
To halt, when ordered by officious sergeants,
Or to protect himself from future trouble
By just ignoring them? To halt; to tip;
No more. And by a tip to say we stop
That summons for exceeding legal speed
That flesh is heir to! 'Tis a consummation
Devoutly to be wished. To halt—to tip—
To tip—and then be fined! Aye, there's the rub;
For in a court of law there are imposed
Such awful penalties on motorists
That give us pause. There's the respect
That makes us anxious to observe the law.
For who would bear the tedious procedure,
The sergeant's tales, his witness's untruths,
The quips of rural Bench, the mis-read law,
The insolence of office, and the spurns
The patient motorist from reporters takes,
When he could easily prevent them all
With his top speed? Why, who would ever stand
The weird decisions of the Reigate Bench,
But that the dread of something worse than this—
The numbering scheme to label every car
And give the police more scope, puzzles the will,
And makes us rather forbear those ills we have,
Than fly to others that we know not of?

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, MAY 2, 1903.

[No. 217.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

Under which Flag?

AMONG the incidental problems associated with the Rise and Progress of Automobilmism are the relations existing between one trade and another. At one time the question was frequently discussed as to whether engineers or coach-builders should develop the motor-car business; and that question is settling itself in a rational way. Now the matter has come to the front again, and at Glasgow there is a dispute between operative coachbuilders and working cabinetmakers as to which of the two shall participate in the prosperity of the motor-car. The former complain that the latter are making motor-car bodies in violation of trade union principles. For the cabinetmakers it is argued that the manufacture of motor-car bodies is a new industry, and that they are entitled to do the work at the request of their employers. Neither party will yield, and so the dispute has been referred to the Glasgow Trade Council. It is a nice point, with the preference of most people for the coachbuilders.

Volunteers.

VOLUNTEERS are as varied as the scenes that break upon motorists in the course of a fair day's journey. Ordinary infantry and mounted volunteers have long been familiar; the Motor Volunteer Corps, under Lieut.-Colonel Mayhew, is being given shape and form; and now comes news of the Balloon Volunteer Corps, which Mr. Frank H. Butler has in hand. It is suggested that the proposed unit would be attached to the Motor Volunteer Corps, and would undertake duties somewhat similar to that carried on by the ballooning section of the Royal Engineers. They propose to operate captive and free balloons, motor balloons, and air-ships. Probably the next innovation will be a Marine Volunteer Corps, consisting of motor-boat owners. Even then, we doubt whether adventuresome spirits will be content, and, like Alexander, they will probably sigh for more worlds to conquer.

The Oxford Club.

ON Dashiwood Hill the Oxford and District Automobile Club has been holding a hill-climbing competition, the leading times in which are given on another page. There were three classes, one for motor-cycles, another for cars not exceeding £300 in value, and the third for cars catalogued at over £300. Each motor-cycle received a time allowance of four seconds for each quarter h.p. below 3-h.p., but twenty seconds was added to the time of any bicycle assisted up the hill by the pedals. There was no handicap for class two, and the handicap for class three was sealed. A prize, value £1, was offered for the winner in each class, and a handsome silver bowl (presented by Mr. W. L. Creyke in the name of the Club) was offered to the owner of the car or bicycle climbing the hill in the fastest time, and two attempts were allowed to each car or cycle. The journey

from Oxford to the Hill was without incident, and the road was in excellent condition. After the trials the members returned through Stokenchurch to the Lambert Arms, Aston Rowant, where tea was enjoyed, and the journey home was resumed at leisure. Altogether the competition must be considered an entire success.

Progress at Eastbourne.

THE motor omnibus of the Milnes-Daimler type, for experimental service in Eastbourne, has had its first trip, the passengers including Councillor Maude, the chairman of the Electric Lighting Committee, Mr. J. K. Brydges, borough electrical engineer, occupying the box seat. A start was made from Gildridge Road at 10.20 a.m., and within a few minutes some disparaging remarks were heard concerning the state of the road, so that the vehicle thus early demonstrated its capacity of revealing abuses to be remedied in the future by an enterprising Corporation. It finished its journey at the Pilot Inn at 10.35 p.m. The return trip was made in eight minutes. With regard to the earning power of motor-buses in Eastbourne, everything will of course depend on the business acumen of the authorities. The earnings of the motor-bus at Hastings average about £9 a day; the conveyance carries fourteen inside passengers, sixteen on the roof, and two in front, total thirty-two. The smaller bus now running at Eastbourne can earn about £5 a day, travelling to Meads and back fifteen times. The consumption of petrol averages about eight gallons a day, and a splendid start has been made.

Unattended Horses.

SUPPLEMENTARY to the prominence given in this issue with regard to unattended horses, we would mention a case at Witham, in Essex, in which a builder pleaded guilty to leaving a horse and cart unattended at Rivenhall. Police-constable Crowe stated that as he was in his garden the horse, which was running away, came past his place, and he jumped "over the garden wall" and stopped it. It was startled outside the Fox Inn by Dr. Salter's motor-car. Dr. Salter wanted to know why the defendant was singled out for prosecution, as there were several carts unattended standing near the inn, to which Superintendent Harrington replied that defendant was proceeded against as his horse was running away. He was fined 5s. and costs 4s.

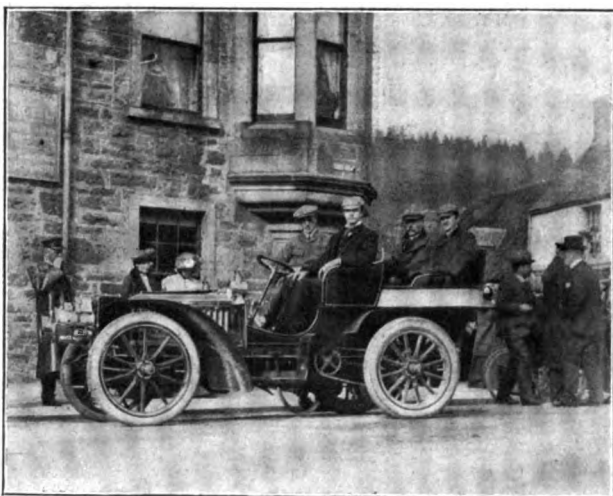
Guns and Automobiles.

THE annual general meeting of the Hotchkiss Ordnance Company was held under the chairmanship of Mr. Charles F. Parsons, who stated that the American Ordnance Company had been absorbed by the American and British Manufacturing Company, in which the company had received ordinary shares to the nominal value of £17,080 in place of the original shares. Dealing with the general business of the company, he said the directors were disappointed with the results of their efforts to improve the business. There was no reason why

the company should not seek in other directions to augment its business and profits, and the directors had decided to take up the manufacture of automobiles. In order to test their capacity for production they first laid themselves out to execute the machinery work of automobile parts for other companies. Then they decided to commence manufacture, and six machines were now being made at St. Denis; and it was expected that one or more of them would take part in the Paris-Madrid race shortly to be held. To manufacture in quantity necessitated capital, and the directors desired the shareholders to appoint a committee to confer with them on this point.

The Scottish Club.

THE annual general meeting of the Scottish Automobile Club was held in the Dreadnought Hotel, Callender, on Saturday. There was a splendid gathering of the Club membership, a representative company travelling from Edinburgh and Glasgow, while from other parts of Scotland there was an excellent attendance. From Edinburgh the route lay by Linlithgow, Falkirk, Stirling and Doune, a distance of fifty-two miles, while from Glasgow the distance was just ten miles less, the line from the western metropolis lying through Cumbernauld and Denny, past the historical battlefield of Bannockburn, and



Mr. George Macmillan, the Hon. Sec. of the Eastern Section of the S.A.C., on his 16-h.p. De Dietrich Car.

THE MEET OF THE SCOTTISH AUTOMOBILE CLUB AT CALLENDER.

thence by Stirling and Doune to the meeting-place. The cars were due at half-past one, but an hour and a half earlier Mr. George Macmillan, on his new 16-h.p. De Dietrich, sped up to the hotel entrance. He accomplished the journey from Edinburgh in exactly two hours, which is good travelling considering the very undulating nature of the roads. The railway journey from Edinburgh to Callender usually exceeds two hours, and the fastest train of the day does it in one hour and forty-five minutes. The roads were excellent, the weather fine, and in every way the run north was enjoyed. Luncheon was partaken of in the Dreadnought Hotel, at which over 250 members and their guests sat down. After the successful annual meeting the return journey to the respective destinations was entered upon, and, as in the morning, the weather continued splendid until the close of the day.

The Annual Meeting.

THE business meeting was held immediately after the luncheon. Mr. Norman Macdonald, chairman, presided. The report stated that the sections were now fully organised, and that the membership was about 210. The affairs were in a thoroughly sound financial state, the Eastern section having a balance of £37 and the Western section one of £123. The General Council have arranged a hill-climbing contest

for May 23rd, and the Western section a non-stop trial from London to Glasgow and a 100-miles non-stop trial. The following representatives were elected to the General Council:— Western section: Messrs. H. M. Napier, W. H. Kingsburgh, and James Burns, with Mr. John Adam as chairman and Mr. Robert J. Smith as hon. secretary ex-officio; and by the Eastern section: Dr. Wm. Blair, Mr. Stephen Smith and Mr. John Wilson, with Mr. John Macdonald chairman, and Mr. George Macmillan hon. secretary, ex-officio. The following additional ten members were elected to the Council: Messrs. J. H. Irons, H. Prosser, W. L. Sleigh, Dr. Dawson Turner, Wm. Weir, Norman Macdonald, J. M. Ross, J. H. Parsons, Jas. R. Nesbit, and Talbot Crosbie. Among those present was the Comte de Clercq, member of the Technical Committee of the Automobile Club de France, who was a passenger on Mr. F. Lobnitz's 10-h.p. Argyll.

Officers for Motor Corps.

MAJOR-GENERAL OLIPHANT, commanding the Home District, has approved of the following appointments to the newly-formed Volunteer Motor Corps:—To be Majors: Honorary Colonel R. C. Knox, lately commanding 5th Battalion Irish Regiment; Mr. W. G. Windham; Honorary Lieutenant-



The Cars at the Dreadnought, Callender.

Colonel H. H. P. Eden, late 3rd Battalion Norfolk Regiment, and Mr. N. H. Balfour. To be Captains: The Honourable C. S. Rolls; Mr. J. P. Hammond; Major A. H. Lee, late R.A.; Mr. T. E. Polden, and Mr. W. J. Crampton. To be Lieutenants: Mr. H. Norman and Mr. J. E. Hutton. To be second Lieutenant: Mr. H. P. Trippell, from the 1st Surrey Rifles.

Questions in Parliament.

In the House of Commons Mr. C. Wason has inquired upon what grounds the proceedings against the Marquis of Downshire for so driving his motor-car as to cause the death of a woman were withdrawn in the Dublin Police-court. The Attorney-General for Ireland explained that the solicitor who appeared for the next-of-kin stated in court that he was convinced that the occurrence was accidental, and the police magistrate approved of the course that was taken. Mr. Long, in reply to a further question by Mr. C. Wason, said that the collision between a motor-cycle ridden by a boy and a motor-car at Wantage, by which the boy was killed, did not seem to call for any action, especially as the motor-car was going at not more than four miles an hour at the time of the accident. General Laurie asked the Home Secretary whether an omnibus driver was sentenced on the 17th inst. to a month's imprisonment, with

hard labour, for driving at a speed of ten miles an hour in the streets; and whether he would instruct the police to take similar proceedings against the drivers of motor-cars who might drive vehicles at the same speed. Mr. Cochrane, who replied, explained that the driver was convicted under the enactment in the London Hackney Carriage Act of 1843, which renders the driver of a stage carriage liable to punishment for "wanton or furious driving." There was a similar enactment in the Light Locomotives Act of 1896 with regard to motor-cars, and the police had instructions to take action against drivers of any motor-cars, as of other vehicles, which might be driven to the common danger, whether the speed was greater or less than twelve miles an hour.

AMONG the interesting articles in the recent magazines is one by the Rev. John M. Bacon, in the *Contemporary Review*, in which the Mechanism of the Air is dealt with. The atmosphere, at least up to an altitude of a few thousand

In the Air.

feet, is, with respect to temperature, as it is with respect to motion, "variable and irregular beyond what has been anticipated." Dr. Benson, ascending from the Crystal Palace during the continuance of hot weather with cloudless skies in the summer of 1898, recorded, at 27,000 feet altitude, a temperature of 29 degs. below zero, which was more than 20 degs. lower than had ever been registered by balloons at the same height—mentioned by the writer of the *Contemporary* article as a convincing proof of the inefficiency of older instruments. Regarding the air as rising only in slender streams and bubbles, he points out that this should point to the scrupulous observance of the most obvious laws of ventilation, one of which is the cutting away of all overhanging trees or creepers—a suggestion somewhat contrary to the practice of many local authorities in planting trees along the side-walks.

Oil for Petrol Motor Cooling.

UNLESS extreme care is taken, there is great danger, in severe frosty weather, of the water employed for the cooling of the motor freezing, the result being, as many motorists know to their cost, cracked cylinders. In this connection a correspondent writes that the Hart-Parr Company, Charles City, Iowa, are using oil for cooling the cylinders of their engines. The oil is sealed air tight in a radiator and the jacket of the motor. They claim that they have used this system for the past five years with perfect success, and that the oil they furnish for cooling purposes should last as long as the engine itself, and that it does not freeze. Commenting on this in the "Cycle and Motor Trades Journal," Mr. C. E. Duryea remarks that any liquid that will not freeze, or which when it freezes does not expand, should be suitable for motor cooling purposes in wintry weather. A solution of water and sugar, for example, is far less likely to burst a cylinder by freezing than water alone, for it freezes at a lower point and expands less when freezing. We are endeavouring to obtain some further information regarding the use of oil for cooling purposes, and if necessary will return to the matter in a later issue.

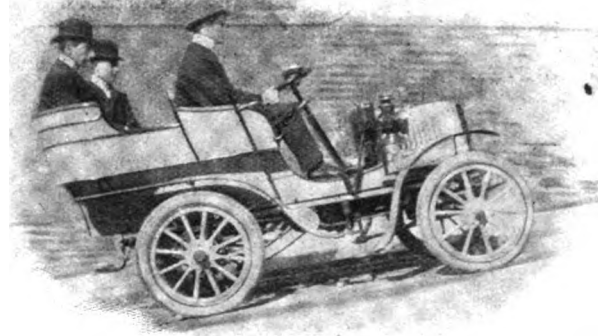
India and Automobiles.

THE Indian Government is considering the whole question of regulations with regard to the import and storage of petrol, and also the speed of motor-cars throughout the great Dependency. Recently an American importer has been in Bombay, where he has had a dozen natives trained to drive petrol cars, and the fact that no dangers have occurred has doubtless done something to reassure the public mind as to the safety of the modern automobile. There is, no doubt, a great future for the motor-car in India, the heat making horses practically prohibitive in most districts, and the locomotion by bullocks being extremely unsatisfactory. Hence it is to be hoped

that the Indian Government will not only come to a right conclusion, but that they will come to it as speedily as possible.

The Eastern Counties Club.

A MEETING of the Eastern Counties' Automobile Club has been held at Ipswich, when it was agreed that all hon. secretaries of county clubs should be made hon. members of the Club. In the badge the features of the East Anglian flag will be introduced. On the question of affiliation with the A.C.G.B.I. it was resolved that the Club would not consent if a greater fee than five shillings per member were demanded. An effort is to be made to secure members in the leading centres, like Bury,



An 8-h.p. M.M.C. Car ascending Nethrall Gardens, Hampstead, which has a gradient of 1 in 5.

Cambridge, and Wisbech, and six gentlemen have been elected as additional members of the committee.

Revising the Poets.

WILL our standard authors have to be revised now that automobilism has become as great a factor in our national life as horse-owning? This is a problem that has formed the subject of a newspaper article in the United States, where live "copy" seems less plentiful than on this side of the Atlantic. Shakespeare had many references to the horse in his plays and would present considerable difficulties to the reviser. Our *Transatlantic confrere* suggests that Shakespeare's lines—

"Anger is like
A full hot horse, who, being allowed his way,
Self-mettle tires him,"

should be altered to read—

"Anger is like
A leaky wheel, which, being allowed to run,
Soon has to be re-tired.

Tennyson would present many perplexities to any but the most ingenious Bowdleriser, but again the knotty problem is got over in the lines—

"He will hold thee, when his passion shall have spent its novel force,
Something better than his dog, a little dearer than his horse,"

being varied to—

"He will hold thee in the future, when less passion he doth feel,
Something better than his dog, not so perfect as an automobile.

This may be fine fooling to fill a column, but why should only English poets be selected wherewith to display such a roving fancy?

The Burnley Club.

THE members of the Burnley and District Automobile Club had their opening run for the season on Saturday last, the destination being Skipton. The weather was all that could be desired, and eight cars put in an appearance, each with its full complement of passengers, making

a total of thirty-three persons, who sat down to tea provided at the Midland Hotel. The following members with their cars attended. Mr. Jesse Altham (7-h.p. Turrell), Mr. C. Atkinson (7-h.p. New Orleans), Mr. Bellingham (7-h.p. Turrell), Mr. J. Butterworth (treasurer) (7-h.p. Turrell), Mr. Cooper (Argyll), Mr. Hargreaves (4½-h.p. Renault), Mr. Parkinson (7-h.p. Turrell), Mr. Harold Smith (8-h.p. Argyll), Mr. Smith also sent a 7-h.p. Turrell, and Mr. Watts a 8-h.p. Argyll. The run was successfully accomplished by all the cars, with the exception of Mr. Hargreaves (who had to complete his journey by train in consequence of tyre troubles), arriving at the destination without a hitch. Mr. P. H. Altham has resigned the secretaryship, and that office has been accepted by Mr. Smith Lawson, solicitor, of Burnley.

In The Transition State.

THE announcement that the Panhard and Levassor representative in England intends to keep a watchful eye on likely infringements on the firm's patents would seem to presage further litigation. But in an industry in such a transition state as is the motor-car business the value of patents is quite a problematical matter. Patterns are changing, improvements are being so rapidly introduced, that the features of one year are the curiosities of the next. Until something like a standard practice has been evolved, nothing like certainty in the matter can be expected.

A Club for Surrey.

A MEETING was held on Tuesday at the Angel Hotel, Guildford, to form a West Surrey Automobile Club. Colonel Fairtlough was elected to the chair. Fifteen gentlemen were present, and twenty members in all gave their adhesion to the project. A provisional committee, consisting of Rev. A. Armitage (secretary), Messrs. R. W. Buttemer, Baring-Gould Brothers, Captain Rouse, Ponsford, and Colonel Fairtlough were elected to consider the rules and proceed with the formation of the Club, which should prove useful in uniting the motorists of Surrey against their common enemy.

"Beginners."

THE last of the Tuesday night meetings of this season has just been held by the Automobile Club of America. The evening was devoted to informal talk, and the chairman, Mr. W. E. Scarritt, proposed the topic of "Beginners; or, How to Learn to Operate an Automobile." Mr. Scarritt said the thing of most importance was to learn how to stop quickly, and by constant repetition of the formula. "What shall I do to stop?" together with practice in stopping, to so associate the thought with the action that when an emergency arises there will be perfect co-ordination, and the car at the thought of "stop" will be brought up instantly without bungling and almost unconsciously. Mr. E. B. Gallaher spoke also of the over-use of the horn and the danger of confusing persons by tooting it so that it was more difficult then to pass them than it was to steer around them in silence. In France, he said, the use of the horn is one of the points that count in examining a *chauffeur* for competency. If a man uses his horn frequently he is considered to lack mastery and confidence.

Breach of Horse Warranty.

SOME folks seem to see an incongruity in the presence of the automobile on the hunting field. Others regretfully acknowledge that their mounts shy at cars. In this, however, they have their remedy, for a case was recently heard at the Norwich County Court in which damages for breach of warranty of a pony were obtained because the animal shied at the electric tramway-cars in Norwich. Huntsmen and others should have some assurance, when purchasing horses, that they are not

likely to conduct themselves ill-manneredly in presence of the inevitable, i.e., the automobile.

At Banbury.

MOTORISTS as a rule are not the most restful of folks, and therefore the wet day at Banbury on Sunday last seemed somewhat long to those who had indulged in the trials reported on another page. In the morning, at breakfast time, good resolutions were made to "nap" in the afternoon, but, except in rare instances, these were not kept. Breakfast was mostly taken late, Messrs. Johnson, Orde, and Joy busied on the statistics, Mr. Napier worked on Mr. Hutton's Mercedes, while others engaged on their tyres, which seemed to need general attention, most of them having collapsed in the night. In the words of the poet—

"To Banbury came i o profaine one,
Where I saw a puritaine one,
Hanging of his cat on Monday,
For killing of a mouse on Sunday."

Numbering Again.

MAJOR K. BALFOUR, M.P., has given notice of the following motion in the House of Commons:—"That in the opinion of this House the time has now arrived when legislation should be initiated providing for the conspicuous identification of motor-cars, the licensing of persons who receive pecuniary remuneration for driving the same, the licences to be subject to endorsement or suspension for repeated offences, and the abolition of the specific speed limit."

Fire at the Daimler Works.

ON the morning of Thursday, the 30th ult., a serious fire occurred at the Daimler Motor Company's Works, Coventry. The outbreak was discovered in the finishing department, where a number of valuable cars were being completed. The fire spread with great rapidity despite the firemen's efforts, and the shop was completely gutted, the cars being totally destroyed. The damage amounts to several thousand pounds. The cause of the fire is unknown. Fortunately the prompt action of the firemen prevented the fire spreading to other departments, and the damage is covered by insurance.

THE North Eastern Railway have three 24-h.p. Stirling motor-omnibuses on order.

PARTICULARS of the quarterly 100 miles non-stop trial of the A.C.G.B.I. will be given in our next issue.

SEVERAL motor-cars have been chartered in connection with the Stock Exchange's walking match to Brighton.

THE Beaufort Motor Company have had a fire at their works, resulting in the destruction of about fifty car bodies.

THREE Arrol-Johnston cars were entered for the 100 miles trial of the Western Section of the Scottish Automobile Club.

THE rule limiting the machine in the forthcoming motor-cycle trials to 3 h.p. has been rescinded and a limit of weight to 170 lbs. substituted.

SOME members of the A.C.G.B.I. will meet the magistrates and chief constable of Hertfordshire at luncheon on the 28th inst., by invitation of the Mayor of Hertford.

THE decision of the Parisian magistrates to sentence Baron Henri de Rothschild to a day's imprisonment and a fine of 4s. 2d., for driving beyond the regulation speed, has been upheld by the higher courts.

RECOGNISING the difficulty experienced by motorists in getting a thoroughly efficient spirit for motive power, Messrs. S. Bowley and Son, of the Wellington Works, Battersea Bridge, S.W., are distilling a motor spirit with a specific gravity of .680,

The Gordon Bennett Eliminating Trials at Clipstone.



[Photo by]

Three of the Cars—Messrs. Stocks and Mayhew on "Napiers," and Mr. J. Lisle, Jun., on the "Star."

[Argent Archer.

THURSDAY evening of last week found self and party at the Midland Hotel, Derby, *en route* for Mansfield, after a pleasant, albeit dusty journey from London. While waiting for dinner a message was brought, that a Mr. Beresford wanted to see the writer. This seemed strange, as it was only by accident a stay was being made in the hotel. Granting the interview as desired, we learned that a cyclist, a few miles from Derby, had to get off his machine because he thought our Mercedes car had been travelling too fast. As a citizen, he felt it his bounden duty to complain to the police, which he did then and there. The result was that a police-constable had called to hear what we had to say on the subject, and to inquire for name and address. The identity of the place where the cyclist had dismounted was somewhat difficult to locate, as in a journey of 130 miles a number of towns and villages are passed through. However, we found this particular cyclist had dismounted somewhere between Loughborough and Derby. So far as we were concerned, we anticipated the inevitable, and concluded the incident for the present was ended, but the next morning, however, another visitor called—this time an inspector from Loughborough. His errand was the same as the earlier caller, and developments are now being awaited.

Friday broke forth in full sunshine, and the short journey to Mansfield—although the road for a few miles was very circuitous—was much enjoyed, the latter part being straight and without traffic—an ideal road, we should imagine, for testing high-speed cars. The headquarters of the competitors was at the Swan, a comfortable old-fashioned inn, and here we soon found Mr. E. Lisle, in whose company we journeyed to Clipstone Park to see the Napiers being tested for the course, which was in a somewhat gritty condition. In the afternoon we had the

pleasure of riding out to Welbeck—this time on the Star car, and some hours were spent in watching various competitors passing up and down the course. Apparently one of the Napiers was travelling very fast, but the Star car was not going slow, and it seemed she was pulling very finely. However, on the Saturday she certainly seemed slower, this perhaps owing to the fact that Mr. J. Lisle, who drove, was suffering somewhat acutely from rheumatism.

The evening was spent in giving a final look round the cars, and early to bed was the rule. There had been some anxiety in the afternoon about the weather, which looked threatening, but all fears were dissipated on the Saturday morning by the brilliant sunshine and beautiful blue sky. All were early risers, as indeed motorists generally are, and by 9 a.m. horse-drawn vehicles and motor-cars began passing through Mansfield, making for the trial ground. By 10 a.m. the town was full, and the roads, with the endless procession of vehicles, reminded us of the old Derby Days, before it became fashionable to visit Epsom by train. The dust from the traffic was tremendous, and the ladies in their smart costumes arrived on the course mostly covered in dust—some of which was caused, we are afraid, by the inconsiderate driving of a few of the motorists. The distance of the course from the town was only about four miles. Lines of vehicles were continually going at a pace of about four to six miles an hour, but this apparently did not suit some of our friends, and they dashed by, raising clouds of dust.

Taking up our position behind the hedges in one of the fields about half-way down the kilometre course, some little leisure was possible, and most interesting was the scene. The various cars manœuvring in position; the horses, becoming friendly and apparently satisfied, were sandwiched in between

the automobiles. Notwithstanding the fact that there must have been at least two hundred cars present, besides a large number of carriages and other vehicles, there was ample room, and the picture was a most animated one.

At 10.30 a.m. the constables, of whom there were a large number, and who performed their duties to the entire satisfaction of the competitors, officials, and spectators alike, were given flags (the old 1,000-Mile Trial flags) to clear the course, which instructions were promptly carried out. Then came a long wait, enlivened just before 11 a.m. by Mr. Rolls taking a flying run down the course. It was a minute or two to twelve when the first of the trials commenced, the car being driven by Mr. Rolls. Experts did not seem to think the speed was very fast, but in this, as figures will show, they were mistaken. The other cars in the order named passed by in equally quick succession, driven by Mr. Stocks, Mr. Mayhew, and Mr. Lisle, the order of running having been determined by ballot.

And so the cars passed and repassed till 1.30, when a short interval was allowed. The spectators, however, in the meantime,

in any event being taken as zero, and the time occupied in excess of the fastest time being shown :—

FLYING KILOMETRE.									
Down.					Up.				
	1.	2.	3.		1.	2.	3.		
Rolls	0	1.3	10.4		1.1	4.1	3.1		
Stocks	.1	1	0		0	1.1	1.4		
Mayhew	10	6	7.4		5.1	4.1	9		
Lisle	7.3	7	7		7.1	8.4	9.4		

STANDING MILE.									
Down.					Up.				
	1.	2.	3.		1.	2.	3.		
Rolls	2.4	5	1.3		6.2	2.1	2.4		
Stocks	0	1	.2		0	2	1.3		
Mayhew	12.2	8.1	4.4		10	6.2	6.4		
Lisle	12.1	11.2	11.2		15.3	16.1	19		

Between four and five o'clock the traffic began making for Mansfield, and it was some time after this that the competing cars passed through the town, having been delayed for the purpose of weighing, etc., again. According to instructions the

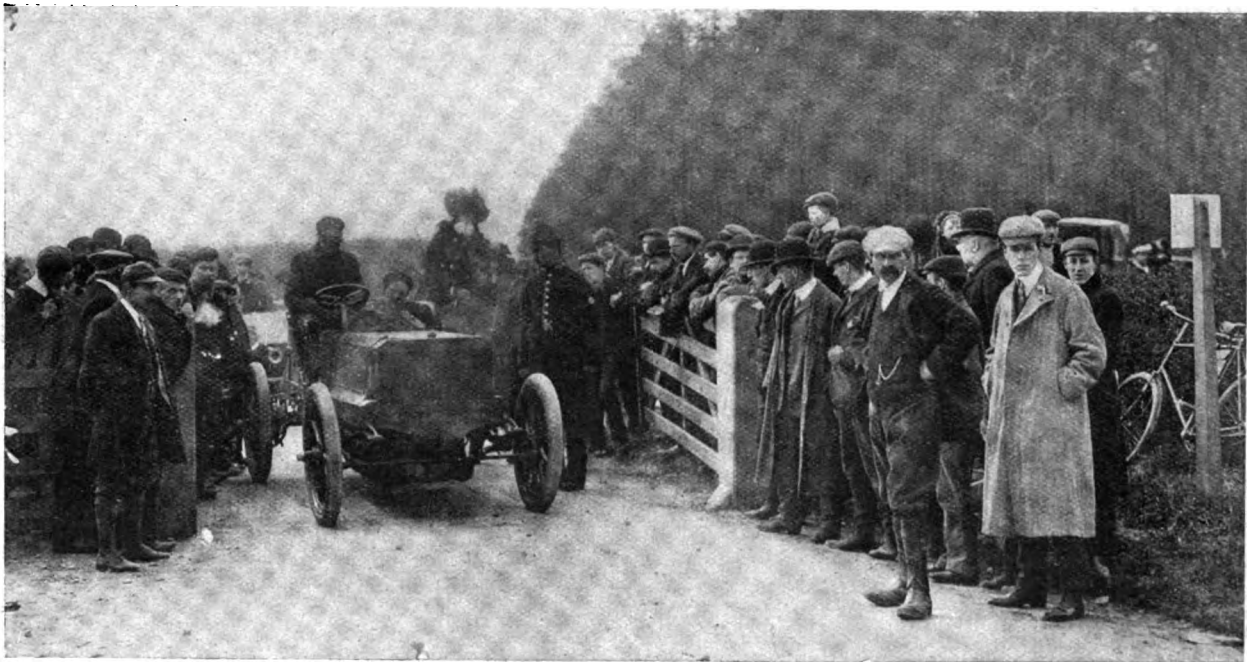


Photo by]

The "Star" Car making for the Course.

[Argent Archer.

had had their appetites whetted with the beautiful and clear air, and had already picnicked in the meadows.

To attempt to mention the names of all the notabilities and members of the various automobile clubs present would take up too much space, but the gathering was one of the most noteworthy in the annals of British automobilism. The officials, one and all, worked harmoniously, and all the arrangements were carried through very successfully. There were about eighty members of the A.C.G.B.I., including the Lord Chief Justice Clerk of Scotland, the Hon. J. Scott-Montagu, M.P., Sir Hickman Bacon, Bart., Mr. C. Shaw, M.P., Mr. E. Kennard, J.P., Mr. H. Norman, M.P., Mr. C. Johnson, Mr. Basil Joy, and Mr. J. W. Orde. Wolverhampton motorists were represented by Mr. S. K. Rhodes, hon. secretary, Messrs. F. Bishop, T. Lisle, Trevor Young, C. Perry, W. Owen Shacklock, and others. The Duke of Portland visited the course on his Lanchester car. The Sheffield Club was well represented; from the Yorkshire Club were Messrs. A. W. Dougill, A. Jones, and D. Hey, with Mr. L. Hey on his 24-h.p. Spyker car; Mr. G. H. Kirk and Mr. Smith on a 12-h.p. Napier; Messrs. Greenwood, Borland, Booth, Bayliss, and others. The results of the trials were as follows, the fastest time

cars had to proceed to Banbury, a distance of over 100 miles, and to be ready at the White Lion in that town at midnight on Sunday, for the purpose of testing the cars on a hill, which was not to be known until that hour. For ourselves, we arranged to stay at Leamington, and so proceeded to Nottingham, where the run commenced. Here some time was spent in endeavouring to purchase a "garter" for one of our tyres, but in this we were unsuccessful, and so left for Leicester, where a halt was made for refreshments. The weather had turned chilly, and the rain was spitefully pelting in our faces as we started for Rugby. Other cars were on the road, all proceeding cautiously; Mr. Stocks' Napier being immediately in our rear. Unfortunately a wrong turning was taken, and shortly afterwards the off-side tyre burst, causing us to collide with a telegraph pole, and afterwards to subside gracefully, if somewhat violently, into a ditch, when another tyre went off with a loud report. The three ladies in the tonneau, Mrs. Cordingley, Miss Pursehouse, and Miss Lisle, though greatly shaken, showed no signs of alarm, and after a moment or two we were all congratulating ourselves that no very serious results had happened. Efforts to obtain a team of horses having failed, it was decided to leave the car, and find an inn; but a carriage passing, and learning

from the driver that the distance from Rugby was only five miles, we took advantage of the kind offer of assistance and drove to the Royal George Hotel, leaving our mechanic in charge. After a hearty supper, preparatory for retiring for the night, Mr. Mayhew drove up to the hotel on his Napier, and never having had a ride on one of these cars we were glad of a seat for the remainder of the journey to Banbury, which town was reached some time after midnight. About a dozen motorists were there assembled, including Messrs. Jarrott, Edge, Stocks, Hutton, Ochs, Napier, etc.

Sunday was a most dismal day, and the rain continued without intermission. By the aid of telephones and telegrams it was early ascertained our car would most probably be able to reach Banbury some time in the late afternoon, and this good news was confirmed by Mr. Lisle on his arrival with the Star. As a matter of fact it was 9 o'clock before the car arrived, and then with the tyre badly down. However, a good Samaritan was found in Mr. Edge, and with the best wishes for assistance from other friends present we were able to make a start for Dashwood Hill, where the test hill climb was to be held, a minute or two before midnight. Mr. Mayhew's car soon passed us, the Star having caught us up. We continued in company to the foot of the hill, where Mr. Mayhew was waiting. Coming up just over the brow of the hill was another car. The lights presented a strange appearance in the half dawn. Hurrying into High Wycombe, where two policemen helped us to wake up the boots at the hotel, we astonished that gentleman with an order for to have ready about twenty-five breakfasts at 5.30 a.m. Some persuasion had to be exercised, and somewhat dubiously was the order undertaken. On our return to the foot of Dashwood Hill all was ready for the trials, and here our party was joined by Messrs. Harvey du Cros, jun., Sangster, and Jarrott, who had journeyed by cars from town. The hill was heavy and wet, and in the cold grey dawn the trials did not take very long. The results were tabulated as follows:—

	HILL CLIMB.					
Rolls	6.4	..	4.0	0
Stocks	5.4	..	0	27.0
Mayhew	23.4	..	1	1.2
Lisle	30	..	25.1	23

The whole of the trials of selection worked out on this basis show that Mr. Stocks was faster than Mr. Rolls by 50 1-5 seconds; faster than Mr. Mayhew by 2 min. 19 sec.; and faster than Mr. Lisle by 3 min. 22 sec.

At 5.30 a.m. there was a hungry party, numbering forty, seated patiently in the coffee-room awaiting breakfast. Plentifully and graciously had our orders been fulfilled, and ample food was supplied to the hungry, tired, moist motorists, for the rain had persevered since Sunday morning. We should like to state that all credit is due to the landlord for fulfilling such an order so satisfactorily, and at such a short notice. After breakfast a scamper for London was made, and this was reached about 8 in the morning, nearly everyone being fairly exhausted.

AN automobile club has just been formed at Gothenburg, Sweden.

A PUBLIC service of motor-cars has just been started between Cadiz and Algeciras, Spain.

A PUBLIC service of motor-cars is about to be inaugurated between Leipzig and Merseburg, Germany.

THE *Chambre Syndicale de l'Automobile de Belgique* will hold its next exhibition in the *Palais du Cinquantenaire*, Brussels, from the 23rd January to 4th February, 1904.

L'ASSOCIATION DE LA PRESSE TECHNIQUE, of Brussels, has just commenced the publication of an Index of the principal articles of the Technical Press devoted to engineering.

It is not necessary that a man shall be a good mechanic to successfully run a motor-car, but it is absolutely necessary that he should possess nerve and confidence, good eyes and ears, and a quick action.

SOME USEFUL NOTES.

IF, while on a run, the brakes are found not to hold properly, they should be attended to before anything serious happens from the lack of them. Perhaps the trouble is due only to oil having saturated the band, in which case it should be taken off and wiped with waste and the brake drum also cleaned. The difficulty may be only one of faulty adjustment, in which case a few moments' work with the wrenches will set the matter right.

It should not be forgotten that it is possible, as a last resort, to use the engine as a brake, if the brakes themselves refuse to work; and one should be prepared to act upon this information in an emergency. When running on the low gear, with the engine at lowest speed, the velocity of the car cannot become great, while a powerful brake is obtained by switching off the ignition.

AFTER spending a few hours overhauling a car the hands are naturally uncleanly, and it is suggested that rubbing finger tips across a piece of soap before beginning operations will prevent them becoming so difficult to clean at the end of the task. For removing the black greasy dirt associated with this work Sapon is being recommended by many motorists. A little of this powder placed on the hands, which should then be dipped into water, can be rubbed into a paste, and, with a little more water, into a cleansing lather.

WHEN running down hills, the descent should be made on the second speed, or even the first speed, if the hill is very dangerous. In this way the car cannot run away, and the brakes are reserved for any emergency. Of course ordinary hills can be descended with the engine running free. Never allow the car to get out of control, so that it can be stopped immediately if necessary. The brake power provided on the majority of cars is more than ample, but it should not be abused.

It is surprising how much use can be made of strong wire in temporary repair work when ingenuity is used. A cracked pipe, which has begun to leak badly, may be rendered tight enough to be usable, if tightly wound with adhesive tape and then with fine wire.

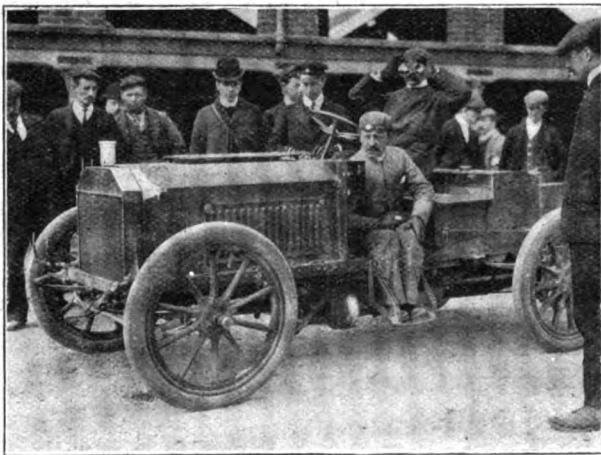
LEAKY threads in petrol pipes may be made tight if covered with common soap or even white lead, and if the water tanks develop cracks in the soldering and begin to leak excessively, caulking the crack with cloth, saturated with white lead, should be tried.

No matter how much care is bestowed upon a motor-car, defects are bound to occasionally develop in it while on the road, and it is then that the mechanical resources of the motorist are taxed to their utmost. His material resources are generally very limited, comprising the few tools and supplies which he can carry in the tool-box, together with whatever he can beg, borrow, or buy along the highway. His mental resources are drawn upon in proportion to his paucity of material aids. Despite the small space usually available, quite a number of useful tools and supplies may be carried upon the vehicle, and, if the contents of the tool-box be well selected, a great many emergencies can be successfully met.

In addition to the full set of wrenches, screwdriver, oil can and pump which are furnished with most cars, the following articles, among others, will be found helpful, and should be carried if space permits: A small pipe wrench, a file, a cold chisel, a pair of lineman's pliers, a good jack-knife, extra links for the chain, asbestos for engine joints, cotton waste, an extra supply of oil, a tube of white lead, a roll of adhesive tape, an extra pair of sparking plugs, spare nuts of all sizes and threads used upon the vehicle, a voltmeter, a coil of galvanized iron wire, and some insulated copper wire and fine steel wire. The above category may almost seem to constitute the "machine shop" which the detractors of automobiles claim has to be carried about with each car, but, as the automobilist cannot be expected to "make bricks without straw," the articles enumerated had better be carried if possible.

THE IRISH FORTNIGHT.

WE regret to hear that some motorists who are apparently without any consideration for the general welfare of the movement, have been rushing over the Gordon Bennett course at a speed altogether out of consonance with the feelings of the Irish people. According to Mr. M. J. Minch, M.P., motorists seem to have taken possession altogether of the roads between the Curragh and Maryborough, and between Kilcullen and Athy. He was one of the Irish Parliamentary party who approved and encouraged in every way the idea of the race taking place in Co. Kildare, so that his protest is not that of any prejudiced person. Only the other day, on the road between Athy and Timolin, he saw a man in serious danger with his horse and trap, owing to a motor-car coming up behind him at a speed of quite twenty-five miles an hour. Having in view the fact that Ireland has given every encouragement for the race, and that many of the county local authorities are going to considerable expense to prepare the roads, both on the course and on the route of the subsequent tour, we hope motorists will be careful not to do anything which may hamper the good feeling now prevailing in the Emerald Isle with regard to automobilism. The Athy Urban District Council is calling the attention of the police to



Photos by]

The Napier Car driven by Mr. J. W. Stocks.



The Star Car, Mr. J. Lisle, jun., at the Wheel.

[Campbell and Gray.

THE ELIMINATING TRIALS AT CLIPSTONE.

the matter, and it is to be hoped that the nuisance will be speedily checked. Of course, these remarks do not in any way refer to the competitors or officials who have been going over the course; but in Ireland, as in England, it is the irresponsible motorist, who cares neither for his own safety nor for the regulations of the police, to whom these strictures have to be applied.

THE Swift Cycle Company, Limited, offer a "Swift" Royal bicycle to the person who correctly calculates the precise time occupied by the winner of the race. The results of calculations have to be sent to the company at Dublin not later than July 1st, marked "Gordon Bennett" Competition. For the purpose of regulating the priority of reception of the calculations they will be numbered consecutively as received or taken out of the letter-box, and the calculation bearing a lower number will be deemed to have been received before that bearing a higher number. In the event of no person correctly calculating the time the bicycle will be awarded to the person whose calculation most nearly approaches it.

THE route decided upon in connection with the motor-car service about to be established by the Earl of Leitrim, is via Letterkenny, Kilmacreevan, Milford, and Carrigart. As it would greatly add to the success of the service to prepare the

surface of the roads by steam-rolling, he has asked the county council for permission to use a roller or rollers for these roads. He also wished to be held indemnified against any breakages of pipes or bridges along the roads owing to steam-rolling. This request evoked a long discussion at the last meeting of the Council, which ultimately granted the permission, but refused to give any indemnity. The roads in the district are fairly hilly, the gradients between Letterkenny and Kilmacreevan being 1 in 16. To avoid a dangerous hill at Ramelton, the route is then taken to Milford and Carrigart—a total of about twenty-six miles.

THE Peerless Motor Car Company of Cleveland have built two machines for the Gordon Bennett race, one a 40-h.p. and the other an 80-h.p. The high-powered machine weighs about 2,200 pounds, which is the limit allowed by the racing rules, and the other weighs 300 or 400 pounds less. The 80-h.p. car has an exceedingly long wheel base and is equipped with 34-inch wood wheels and 4-inch tyres. It is the intention to take both of the machines to Ireland and test them there on some of the byroads to determine the relative speed on curves. If it should be found that the car with a small wheel base can safely be run considerably faster on the curves than the high-powered one, it may be used in the contest. The 80-h.p. engine has four cylinders, 6 inches bore by 6 inches stroke. The change gear

gives four speeds forward and one reverse, and is controlled by a single lever. The transmission to the rear axle is by bevel gear, and the drive is direct on the high speed. The petrol tank has a capacity of 40 gallons. The engine is fitted with automatic governor and accelerator.

CAMPING out is likely to be indulged in by many who go to Ireland to see the Gordon Bennett race. In fact, the committee of the Ulster Centre of the Motor Cycle Union of Ireland are entering into negotiations to secure a suitable position on the course for the location of tents for their members. In a later issue we propose to give some idea of what might be done in this direction.

MRS. MARY G. KENNARD, the popular novelist, has been for a trip on a Gordon Bennett racer, and sends us the following impressions: "The car belonged to Mr. Mayhew, and was made by the now celebrated firm of Napier. A long, rakish vehicle, the bonnet occupying quite half its length, two light seats, a wooden box at the rear, filled with tools, oil-cans, rags, etc. That was what met the inexperienced eye. But the practised motorist could not fail to admire the greyhound-like proportions of the flyer, the mechanical skill which could combine such lightness with so much strength, power, symmetry and good workmanship. One turn of the starting handle and the engines thundered out their music, readily, gleefully, as if longing for the fray, and far more respon-

sively than many a little $3\frac{1}{2}$ h.p. De Dion. I took my seat by Mr. Mayhew's side, and we were off. The first speed seemed fast; the second faster; the third breath-catching; the fourth terrific; no other word describes it. The wind-pressure was enormous as we tore through the air, and periodically the car leapt and bounded clear off the ground, and like a living thing conscious of its strength, playfully delighting in it. I glanced admiringly at my companion. It takes exceptional qualities, exceptional nerve, judgment, and experience for a man to steer such a car. He sat cool, crouched over the wheel, his goggled eyes fixed intently on the road, the stiff breeze blowing through the shaggy fur that he wore as a protection from the bitter April cold. I realised then what automobile racing really meant. The public sits at home and reads calmly of cars attaining a speed of eighty miles an hour, but until people actually ride in such a vehicle it is impossible for the pace to be brought home to the mind. The strain upon human nerve is enormous. One can understand men driving in two or three races, and emerging successfully from the ordeal; but can they go on doing so? Is not the tension too great, the effort too immense for man's courage to withstand a continuance thereof? I could not help asking myself that question."

NEWBRIDGE is an interesting little town on the road from Dublin to Ballyshannon, and those who wish to reach the starting-point of the Gordon Bennett Race by rail should alight at Newbridge, this being the nearest railway station to the cross-



At Fresco Entertainment on the Eliminating Contest Course.

roads. Motorists will be interested to know that Mr. M. T. Woods has facilities for repairing cars at his works in Edward Street, Newbridge, and is now adding to his plant. He has secured the services of a competent mechanic who has been foreman in one of the leading motor factories.

DURING the Irish fortnight Messrs. Selbach and Adams intend taking two 40-h.p. vehicles and three Regal light cars to Ireland.

MESSRS. JOHN HUTTON, SON AND CO. have made arrangements in Dublin for a garage for over 200 motor-cars. They will have a staff of mechanics constantly in their place at 115, Summer Hill, and any motorists going to Ireland can get a small repair done while they wait.

AT Naas good accommodation for visitors will be found, and as the town is only seven Irish miles from the starting point at Ballyshannon, and six miles from the Curragh of Kildare, many will spend the previous night at that place. At present, however, there is no facility for repairing cars at Naas.

THE COTTEREAU 16-H.P. CAR.

WE are this week able to give an illustration of the 16-h.p. wagonette, one of the latest productions of the Cottereau Company, of Dijon, the agents for whom in this country are Messrs. McNeil, Hutchison and Borth-

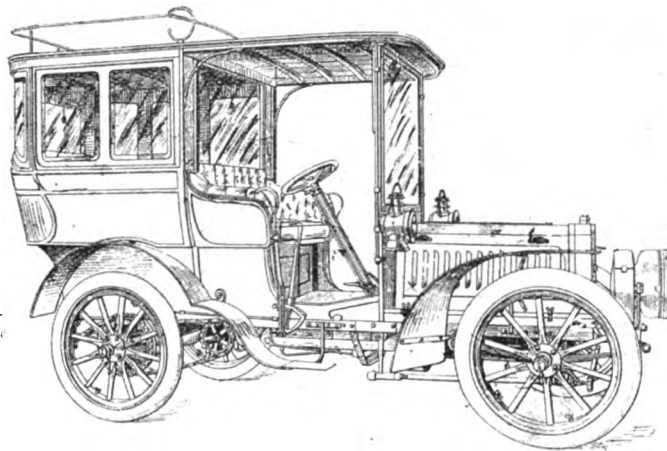


Fig. 1.—The Cottereau 16-h.p. Wagonette.

wick, of Manchester. The car, as will be seen, comprises all the latest features, including combined honeycomb water-tank and radiator. The motor, which is shown in Fig. 2, has four vertical cylinders, 92 mm. diameter by 120 mm. stroke, the normal speed being 900 revolutions per minute. Accumulator or magreto ignition can be fitted, the particular engine illustrated being provided with the latter. The governor acts on the inlet, the

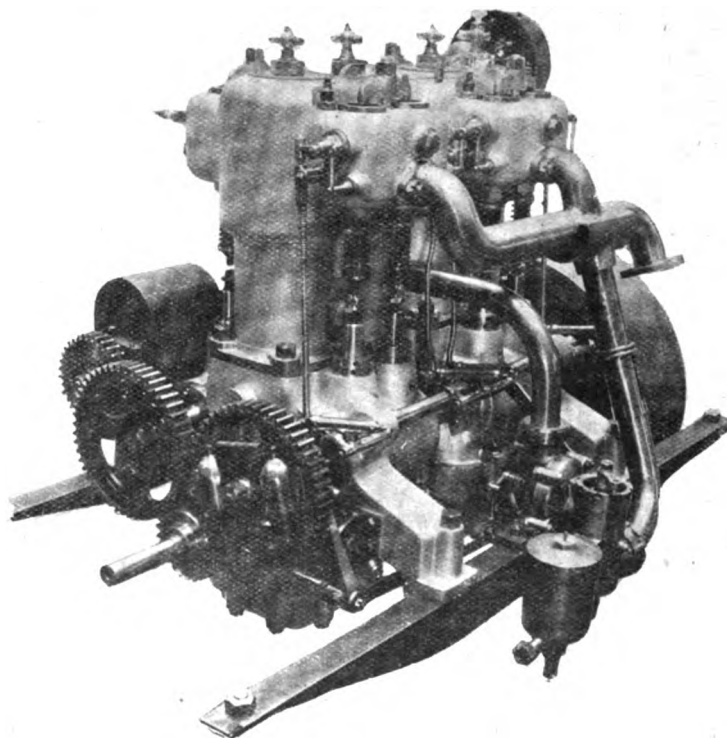


Fig. 2.—The Cottereau 16-h.p. Motor.

connection being such that a quick action is obtained. The valves are mechanically operated, and are all interchangeable, the inlet valves being on one side and the exhaust valves on the other. The transmission is on the same lines as that adopted in the Panhard cars, four speeds and a reverse being available, the power on the top speed being transmitted direct. The car, which without body weighs about 16 cwt., can attain a speed of thirty-eight miles per hour on good roads.

POLICE ZEAL AND LAXITY.

IT would appear that the area of police activity is shifting from Surrey to the eastern counties, and that whilst those in the southern districts are adopting a little more straightforward methods than was the case last season, those of the eastern counties seem to be playing the part of imitators. During the last few weeks several cases of unfair treatment have been reported to us from Essex, where the magistrates apparently incite the police to bring as many motorists as possible before them. The anti-motor mania has now spread into Norfolk, and in connection with the recent inaugural run of the Norfolk Automobile Club, a good haul of motorists was made, the result being that about a dozen leading citizens of Norwich and the district were summoned at Blofield Petty Sessions on Monday, under the Light Locomotives Act of 1896.

Elsewhere we give the details of these cases, but we would point out some considerations which are of importance to



The Police Trap on the Yarmouth-Acle Road.

motorists generally. As will be seen from the above photographs of the incriminatory road, looking towards Acle, a few miles from Yarmouth, it is a long regular stretch of open roadway, with no cross-roads or houses to form a plea of public danger. The driver on this road can see straight ahead of him for some few miles, and certainly it would not appear to be a place where children or pedestrians were likely to loiter—even if no motor-cars were passing along. This safe stretch of country was just the point selected by the police on which to plan their trap. How this was done was described by a police-constable himself, and would appear, from the ordinary common-sense point of view, to afford hardly sufficient evidence on which to hang the proverbial dog. But, being only concerned with motorists, any sort of device would appear to be sufficient. The quarter of a mile was measured by the police pacing the distance; no question of exact measurement was involved, the mere stepping out of the policemen being sufficient. Instead of using properly-regulated stop watches, the police had ordinary time-keepers, and located themselves under the fence, where they could see the users of the road while the drivers could not see them. Such was the character of the trap in which a dozen respectable citizens were caught.

After hearing evidence as to speeds of anything from twenty miles per hour being attained, the magistrates retired to consider their verdict, but before doing so, Mr. George Chamberlin, chairman of the Norfolk Automobile Club, addressed them, pointing out that the Club would never run in an unsportsmanlike manner or to the danger of his Majesty's subjects. Such an assurance, together with the fact of the unsatisfactory character of the evidence upon which the police based the issue of the summonses,

should have deterred the Bench from dealing severely with the matter. In two cases where the police evidence was too preposterous even to the satisfaction of country magistrates, dismissals resulted, but in the others fines and costs have had to be paid. One amusing feature of the evidence was that of Mr. Havers, a Norwich architect, who measured the constable's quarter of a mile and found it twelve yards short.

While the police were thus busy in securing convictions against motorists for riding across the flat road on the marshes, they were sadly neglecting their duty in the same district, so far as unattended horses and vehicles were concerned. There is no need to emphasise the danger to the public that attaches to the leaving of horses and vehicles outside inns and other places, whenever any other traffic is passing along. The accompanying photograph shows a view of the Globe Inn at Blofield, taken on Wednesday week, when there were no less than nine unattended horses standing there at one time. Blofield is on the same road as that where the police trap was laid, being a little nearer Norwich. The petty sessions for the division are held at this inn, and we should have thought that the police would have con-



Unattended Horses at the "Globe" Inn, Blofield.

sidered the duty lying nearer home than to have troubled about the solitary road whereon they trapped motorists. But it is very evident that in many districts they are disposed to take a very lax view of their duty so far as horses and their drivers are concerned, while their undue zeal when trapping motorists is by no means to their credit. There is no doubt that public men in rural districts can do much to assist the automobile movement by urging that the police should perform their legitimate work in carrying out the law with impartiality and common sense. There is the suspicion in many quarters that they are prejudiced with regard to motorists, and that the magistrates often foster such a spirit instead of rebuking it when suitable opportunities offer.

THE Bavarian Automobile Club of Munich is organising an "Automobile Day" for the 5th July next.

THE Leicestershire Automobile Club has just had its first run of the season, the destination being Ashby-de-la-Zouch.

JUDGE ADAMS, the county court judge at Limerick, has described the motor-car as "the greatest curse known since the first batch of English who landed in Ireland."

MESSRS. SOUAMI AND COMPANY, LIMITED, has been registered with a capital of £4,000, to adopt an agreement with Mr. L. J. Souami, and to take over the business of a veneer merchant and manufacturer of and dealer in motor-cars now carried on by him at 372, Old Street, E.C., under the styles of Souami and Company and the Hackney Motor and Cycle Company.

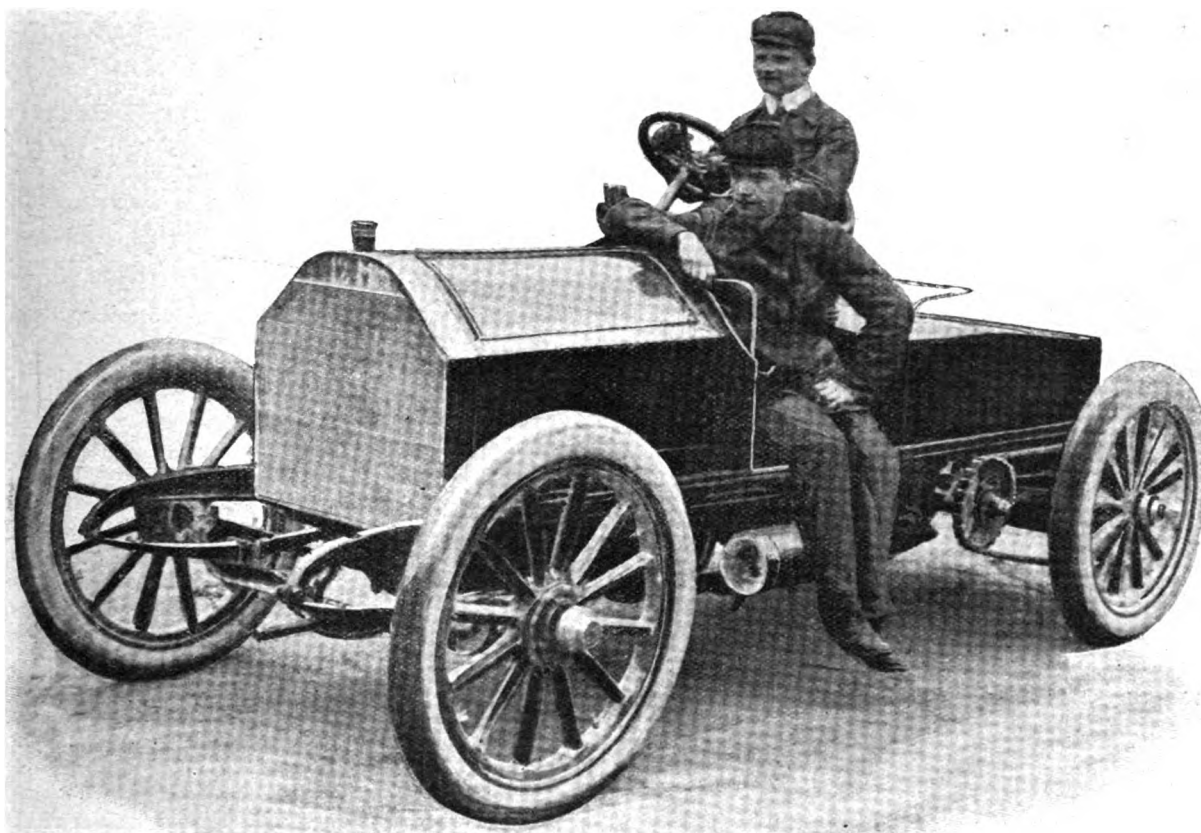
CONTINENTAL NOTES.

By "AUTOMAN."

THE scheme for chartering a steamer in connection with the Gordon Bennett contest has now been definitely realised, and a Transatlantic steamer of 3,000 tons has been hired by Messrs. Panhard and Levassor, Mors, and Michelin. The steamer will have on board as many as twenty-two automobiles, including, of course, the three cars which will dispute the cup in the French interest. There will, however, also be cars belonging to tourists who wish to visit Ireland in connection with the event. The steamer will anchor in Dublin Bay, and accommodate not only those who belong to the three firms above mentioned, but also a certain number of other passengers, who wish to witness the Gordon Bennett Cup race. The boat will serve also for an hotel for some of the French visitors. All this was settled at a meeting held at the A.C.F. some few days ago. It

race. The deputation above mentioned were met by the two Senators for the Ardennes, Messieurs Gontant and Gerard, and M. Abdeinour, Secretary of the Automobile Club Ardennais, and went over the road, which they found suitable for the purposes of the competition.

THE second International Congress of Automobilm will be held from June 15th to 20th at the A.C.F., Place de la Concorde, Paris. The Congress will comprise—general meetings, sectional meetings, conferences, visits to industrial establishments, trials, excursions, &c. No work can be presented to the meetings, or serve as a basis for discussion, if previous to May 1st the author has not communicated a *resume* or his conclusions to the Organising Committee. The following is a brief résumé of the programme:—Monday, 15th June, 10 a.m.—Opening Meeting.—Formation of the Sections. I. Technical Questions, 2 p.m. 1st Section: Motors:



Hieronymus on the 60-h.p. Mercedes on which he won the Rothschild Cup for Petrol Cars at Nice.

[Allgemeine Automobil Zeitung.]

is really a remarkable sign of the progress of this wonderful industry and the interest taken therein by sportsmen and others, to see such an important step taken as chartering a large steamer from Havre to Dublin.

SOME few days ago I happened to be dining at the railway station at Reims, when I met Messrs. Max Richard, Famechon and Tampier on their way to Buzancy, in the Ardennes. This competition must not be confounded with the "Circuit des Ardennes," which is a Belgian race in the Belgian Ardennes, and a repetition of last year's event. The French competition, for clearness' sake, has been named the "Circuit des Argonnes," and it is a long race over a triangular course, and without any neutralisations, to be held on July 19th next, under the patronage of the Chamber Syndicale de L'Automobile. The course is about 150 kilometres round, and consists of good roads in a most picturesque site, and in very hilly country, so that both speed and reliability will be needed in order to be well placed in the

Steam Motors—Generators—Motors General—Explosion Motors—Carburettors—Ignition—Apparatus and Wires—Various Motors. Tuesday, June 16th, 10 a.m.—Second Section: Electrical Vehicles: Electric Motors—Charging Stations—Petrol-Electrical Cars, &c., 2 p.m.—3rd Section: Transmission—Chassis and their parts—Carriage Work, &c. Wednesday, June 17th, 10 a.m., 4th Section: Power in Traction—Equipment of Cars—Equipment of Passengers. 5th Section: Economic and International Questions. 2 p.m.: Exploitation—Cost Price—International Questions. Thursday, June 18th, 10 a.m.—General Meeting of the Congress. 2 p.m.: Visits to the Chief Automobile Works. 7.30 p.m.: Closing of the Congress—Banquet at the Automobile Club de France. The festivities organised by the Automobile Club de France in honour of the Presidents and Delegates of the French and Foreign Automobile Clubs are:—Friday, June 19th, 9 a.m.—Excursion by Automobile to, and Luncheon at the Forêt des Fontainebleau. Saturday, June 20th.—Reception at the Automobile Club de France.

THE "Circuit des Ardennes," which takes place on June 20th and 21st, is already attracting attention, and amongst other cars entered I see four De Dietrich, two Gobron Brillie, and six Mors cars in the first category of heavy cars, and five Darracqs in the lighter category.

THE total number of competitors for Paris-Madrid so far is 280, which easily beats the 205 of the Paris-Vienna contest of last year. The number includes 107 big cars, 62 light cars, 48 voiturettes, and 63 motor-bicycles, the entrance-fees representing a sum of no less than £2,926. The start of the run on the first stage to Bordeaux will take place at 3 a.m. on May 24th. The question of the arrangements for the departure of the racers is a hard problem, which still remains to be solved. If, as on previous occasions, they are sent off at intervals of two minutes, car No. 280, supposing no forfeits are declared, will not be off till nine hours and eighteen minutes after the departure of car No. 1—that is to say, probably after the latter has reached Bordeaux. If, on the other hand, the cars are sent off at intervals of only one minute, the road from Paris to Bordeaux, with at least 200 racing cars tearing along it at distances of probably less than a mile one behind the other, is likely to be one long stretch of unbroken dust-cloud.

M. TAMPIER, the official timekeeper of the A.C.F., was officially appointed to examine the roads and report on them, with a view to enabling the racing committee of the Spanish and French Clubs to choose definitely the route for the Paris-Madrid motor-car race. M. Tampier, therefore, is the best authority on the question of the roads, as he has been over every inch of them carefully. He tells me that as far as Bordeaux the route is in an excellent condition, incomparably good; but from Bordeaux to Vittoria will be a very hard stage. On the French side of the frontier there are 52 kilometres of setts, and not in a very good condition; and on the Spanish side of the frontier the roads are very indifferent and narrow. They can be compared more or less to the Swiss roads, which were neutralised in the last Paris-Vienna competition.

A LONG list of prizes in connection with the Paris-Madrid race has been transmitted to the A.C.F. by the Spanish Club, and they include:—

1. A prize from the King of Spain for the first car of any class whatever winning the race.
2. A prize from the Prince and Princess des Asturias for the first car which crosses the Spanish frontier, irrespective of any classification.
3. A prize from the Infanta Isabel, for the second car which reaches Madrid after classification.
4. From the Minister of Agriculture, for the first car using alcohol as a fuel and arriving at Madrid, after classification.
5. A prize from the Municipality of Madrid, for the first car that shall arrive in Madrid without any reference to classification.
6. A prize from the A.C.R.E., for the first car of the first category, which shall arrive in Madrid, after classification.
7. A prize from the Ladies' Society of Madrid, for the first car of the second category arriving in Madrid, after classification.
8. A prize from the Grand Pegna Club, for the first car of the third category arriving in Madrid, after classification.
9. A prize from the Casino of Madrid, for the winning set of cars after classification.
10. A prize from the Nuevo Club, for the first car of the fourth category after classification.

In addition to this, the towns of Burgos and San Sebastian are giving prizes for the first car which will arrive within their precincts. And this is only the Spanish side of the prize-list. The French side will be even greater still, so that cars that are well placed in the race will have nothing to complain of. In the course of the Paris-Madrid race there will be, according to the calculations of the "Auto," upwards of 5,000 cyclists engaged in piloting and guiding the competitors, and in assisting generally in the organisation and carrying out of the race. From Paris to Bordeaux there will be upwards of 38 kilometres of neutralised ground, and 3½ hours of neutralised time. The cars will have to pass over fifteen level crossings.

PARTICULARS of the new French racers entered for Paris-Madrid are now leaking out. Mors is putting the finishing touches to eight 80-h.p. cars. The engines have four cylinders, while a new feature is found in the front springs. The vehicles will be driven respectively by Baron de Forest and Messrs. Vanderbilt, Salleron, Fournier, Leger, Terry, Rigal, and Gabriel. Of the C. G. V. cars, M. Charron will drive the 40-h.p. eight-cylinder vehicle, with two speeds; M. Girardot and M. Voigt will each run 60-h.p. four-cylinder racers; 20-h.p. cars will be driven by Messrs. Giraud and Comiot, and a 15-h.p. by M. E. Lose. Gobron-Brillie will have three 110-h.p. cars and two 40-h.p. vehicles in the race, while Serpollet has prepared half a dozen 40-h.p. cars and three 20-h.p.'s, and these are already having a preliminary canter over the route.

No less than fifteen Mercedes cars are entered for the Paris-Madrid race—six 90-h.p., eight 60-h.p., and one 40-h.p. It is reported that it is the intention to select the three cars which prove the best in this big race to represent Germany in the Cup contest. Since the above was written the "Neues Wiener Tagblatt" has published a statement that the Mercedes firm will probably declare forfeit in the Gordon Bennett race owing to differences having arisen between the firm and the German Automobile Club with regard to the drivers of the cars.

IN connection with the Paris-Madrid race, as I have already mentioned, there will be held a touring excursion. It will start from Paris on May 13th, between 7 o'clock and mid-day, in the order in which the cars turn up. On the first day the excursion will go as far as Pougues, about 126 miles, via Fontainebleau. On May 14th the destination will be Royat, about 100 miles, via Clermont-Ferrand, the locality where Michelin has his works. On the 15th, 16th, and 17th about 287 miles will be accomplished from Royat to Agen, with the faculty of stopping anywhere desired, as long as Agen is reached on the night of the 17th. On Monday and Tuesday, May 18th and 19th, 196 miles will be covered, from Agen to St. Sebastian, and Wednesday, the 20th, will be passed as a day of rest in St. Sebastian. On Thursday the Spanish frontier will be crossed, at Zarus, where a halt for lunch will be made, and Bilbao reached at night, 87 miles from St. Sebastian. On May 22nd the journey will be from Bilbao to Vittoria, 43 miles, but in the morning an excursion will be made from Bilbao to Portugalette. On May 23rd Burgos will be the destination, and the distance will be 68 miles. On the 24th the party will reach Valladolid, having covered 80 miles. The destination on Monday night, May 25th, will be Salamanca, 80 miles further on, and on Tuesday evening, May 26th, Madrid will be reached, via Escorial, after a day's journey of 125 miles. After the finish of the Paris-Madrid race there will be an excursion organised in Andalusia, but the itinerary has not yet been fixed.

THOMAS SHAW, Dundee (Limited), of Dundee, has been registered with a capital of £3,000, to acquire and carry on an existing business of cycle and motor agents.

AT the North Tawton (Devon) fair, the Hon. John Wallop said he was no friend of motor-cars, but he believed they would be serviceable to the agricultural community.

AN amalgamation has been effected of the Bavarian Automobile Club, of Munich, the Frankische Automobile Club, of Nuremberg, and the Wurtburg Automobile Club.

MANY good jokes could be told by motorists of their first few weeks' experience, but as the laugh is always on themselves their fellow men hear little of what has taken place.

FROM the Searchmont Automobile Company of Philadelphia comes a well-printed catalogue of the 1903 model Searchmont car. The list gives detail drawings of various of the parts, and a large plan showing the general arrangement. The vehicle is fitted with a 10-h.p. two-cylinder engine, and closely follows the lines of European-built cars.

ELECTIONS AND MOTOR-CARS.



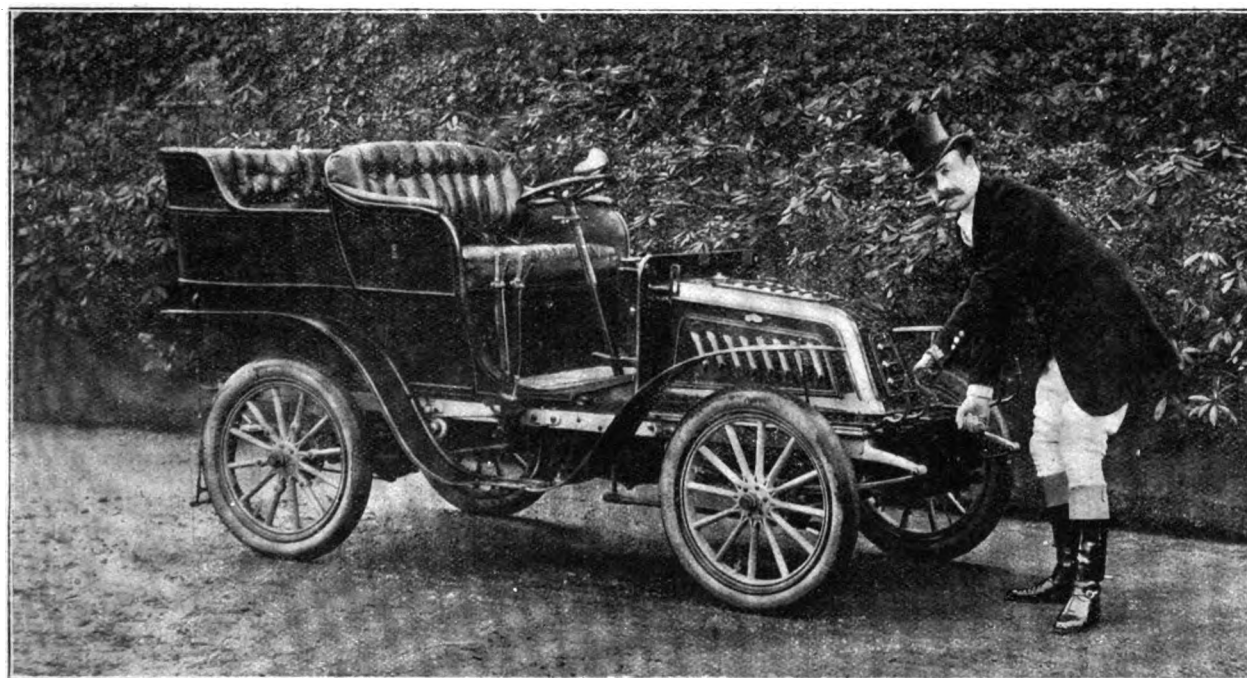
FROM Yorkshire comes a complaint from a keen motorist who is troubled because his *confreres* have not shown an enthusiastic support of the candidature of a fellow motorist for the local urban and district council. Recently he wrote to twenty-four members of the A.C.G.B.I., six of whom promised to assist a certain

candidate and only one of whom actually did so. If another car had put in an appearance the defeat would have been changed to victory. Seeing that the motorist thus seeking election to the Shipley Urban Council would have looked after the roads of the district, his return would have been a pleasing event to many friends.

The subject of automobiles at elections is one that has loomed

leave imprints of their presence on the smart upholstery. At present the charm of automobiles at elections is still new; the chance of sport still present and the prospects are rosy for the candidate who can command the most cars. But the pleasure of lending one's vehicle at election times is not wholly unalloyed.

Despite the dawning of these facts upon the motorist, the subject has been discussed at a meeting of the committee of the Automobile Club, and something like a decision has been come to. In fact, from the minutes it would appear that, in future, the Club will invite members to send motor-cars to aid the election of candidates who have pledged themselves to support reasonable automobile legislation approved by the official body of the movement. Not satisfied with this declaration, it has also been agreed that members should be asked to withhold cars from candidates unwilling to support the general policy of the Club. Both decisions are to be regarded as quite distinct from the ordinary political demarcations, and would appear to open up visions of a new Parliamentary party. The ownership of a motor-car may yet become an essential factor in the political equipment of Mr. Joseph Chamberlain and Sir Henry Campbell-Bannerman. Certain it is that unless they adopt an attitude



Earl Shrewsbury and his Clement Car.

large in the public mind of late. Commencing with the Parliamentary contest in the Newmarket Division of Cambridge, every succeeding contest has seen the number of motor-cars grow and their importance increase until the old cry for carriages and horses has been modernised into the demand for automobiles. It is significant of the overwhelming merits of the motor-car that in such a division as Newmarket a well-known motorist should win a seat, the cars lent by his friends contributing to success at the polls. Even in so urban a district as Woolwich the motor-car demonstrated its utility, and in the Rye division the fight was to the candidate whose motor-car did not break down. The occasional mishaps to the vehicle of the unsuccessful contestant presaged a defeat, and in the days of omens would possibly have caused him to relinquish the trial.

Every owner of a motor-car is now worried whenever elections take place by friends—or by the acquaintances of people who fancy they know him—who think that the only real way of showing sympathy with electioneers is by lending private automobiles. The voter enjoys the chance of a free ride in a car costing perhaps four figures; while the wife of the owner sees little interest in the business, especially if she is thwarted of a trip to some Society friends in order that a few labourers straight from the fields may

friendly to automobilism—of course we do not suggest they are laggard in this respect—they will not have the loan of automobiles from loyal clubmen. Whether they can face such an electoral contingency with equanimity depends upon the sportive tastes of their respective opponents.

All this tends to demonstrate the growing influence of the motor-car, and also the necessity of discretion being exercised by motorists in dealing with their legislative position. Any suggestion of intimidation would be resented by the average elector, and we are inclined to believe that this is a matter the Club will be powerless to rule. For, after all, political convictions are often stronger than pastimes, and there will doubtless be many instances of cross voting—or cross motoring. At present the motor-car is not so cheap that relays of vehicles are familiar on our estates; and the wife of the house will probably require some care being taken of her motor brougham. We have a suspicion that this car for the lightness of its construction, and the fact that it is the electoral vehicle of the future will not be the heavier vehicle of the past. After a more permanent

MOTOR-CYCLING NEWS.

A FRENCH electrician, M. Alphonse Bouchet, of Saint-Cheron, is reported to have recently built a motor-bicycle propelled by means of an engine using acetylene gas as fuel.

THE accompanying illustration shows the new chain belt lately introduced by the Coventry Chain Company, Ltd., for use on motor-cycles. It is intended to run on an ordinary V pulley, the blocks, which are made of fibre or leather, being

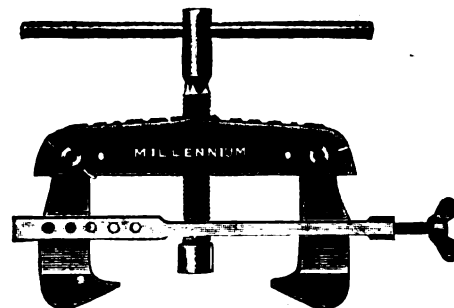


riveted up into a cycle chain. The company claim that with this device they have succeeded in combining the gripping qualities of the fibre with the non-stretching qualities of the chain, and that under practical test they have found it, even while running slack, to give a perfect drive up the steepest hills in the Coventry district.

ON the 26th ult. the Motor Cycling Club paid their promised visit to The Barn, Market Harborough. Mr. and Mrs. Edward Kennard and their son, Captain Kennard (15th Hussars), met the motorists midway between Harborough and Northampton, and showed the road to their residence. The guests numbered about sixteen, whilst others joined them from Leicester, Peterborough, and elsewhere. Most of the riders were splendidly mounted on high powered machines which scoffed at distance. Werners were much in evidence. Mr. Van Hooydonk bestrode one of his bicycles, fitted with a 2½-h.p. Minerva motor and a fore-carriage. The new Clyde 2½-h.p. made a brave show at the hills, and, under the skilful guidance of the vice-president, maintained its reputation. Previous to sitting down to luncheon the entire party were photographed by Mr. Kennard and his son. After a cold collation had been partaken of, the captain, Mr. Ernest Arnott, whom all were pleased to see about again after his recent severe fall, proposed the health of the host. In response, Mr. Kennard assured the company of the great pleasure the visit had occasioned Mrs. Kennard and himself, and expressed a hope that it

TO-DAY (Saturday) the Birmingham Motor Cycle Club will have a run to Dr. Johnson's old city of Lichfield. The "faithful city" of Worcester will be visited on the 9th inst.

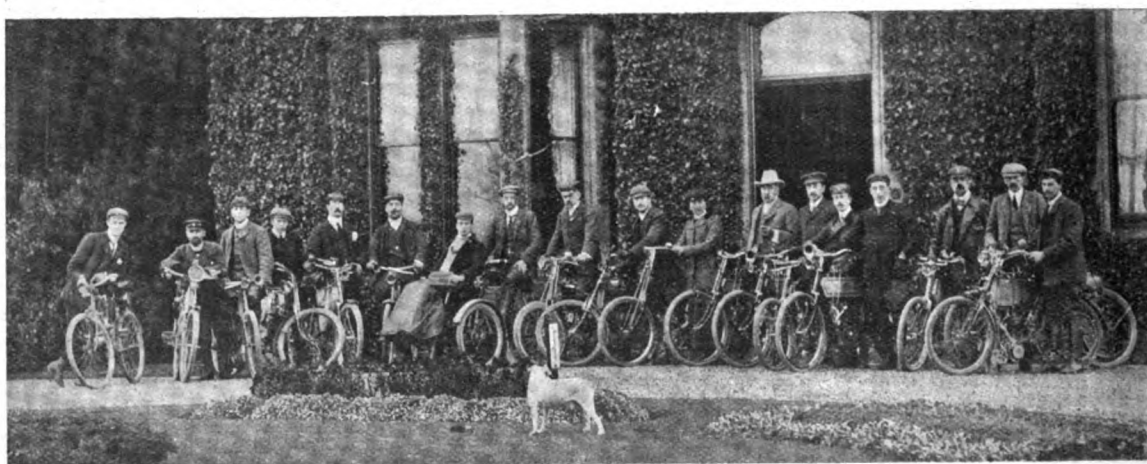
MESSRS. LAKE AND ELLIOT have recently brought out the useful little tool illustrated herewith for removing the pulleys of bicycle motors from the shaft without risk of damaging the motors. The action is as follows:—The two points of the hangers are placed in the grove of the pulley, and made to grip



this by turning the set screw at the right. The handle is screwed down on to the projecting screw of the crank shaft (of course after removing the nut), the pulley being then drawn off quite easily. The device is adapted to take any section of wheel, with a flange, and practically all existing sizes.

THE Liverpool Motor Cycle Club held their run to Little Peover, in Cheshire, on Sunday last. Some time was lost at the start owing to the wrong road being taken. The ancient church at Peover was inspected before returning home. An incident on the return journey was the discovery of what was thought to be a police trap. Fortunately, this was not so, and Liverpool appears to be still free from such underhand schemes.

THE newly-formed Glasgow Motor-Cycling Club will hold a preliminary run to-day (Saturday), to Fenwick. The official opening run will be held on Glasgow "Victoria Day," May 21st, to Arrochar, going *via* Dumbarton and Loch Lomond, and returning *via* Loch Long, over the Whistlefield Hill, and along the shore of Gareloch.



The Motor Cycling Club at the Barn, Market Harborough.

might become an annual affair. At 3 p.m. the return journey to London was commenced. Unfortunately, the day proved dull and sunshine was lacking for photographic effects. Nothing will give the Club a greater stimulus than successful runs at whose termination the members are assured of so hearty a welcome as that afforded by Mr. Kennard.

THE Southampton County Motor Club had a capital run to Lymington on Saturday, via Hythe and Beaulieu. Tea was served at the Londesboro' Hotel, Lymington. The roads were in good condition. Just outside the town there is a toll gate where a charge of 1d. was made for motor-cycles and 2d. for machines with a trailer.

HERE AND THERE.

MR. A. S. HILL, of the Coventry Chain Company, has been elected President of the Cycle Engineers' Institute for the ensuing year.

It is reported that Mr. Stead is about to make an attempt to run from Paris to Nice in twenty-four hours on his 24-h.p. De Dietrich car.

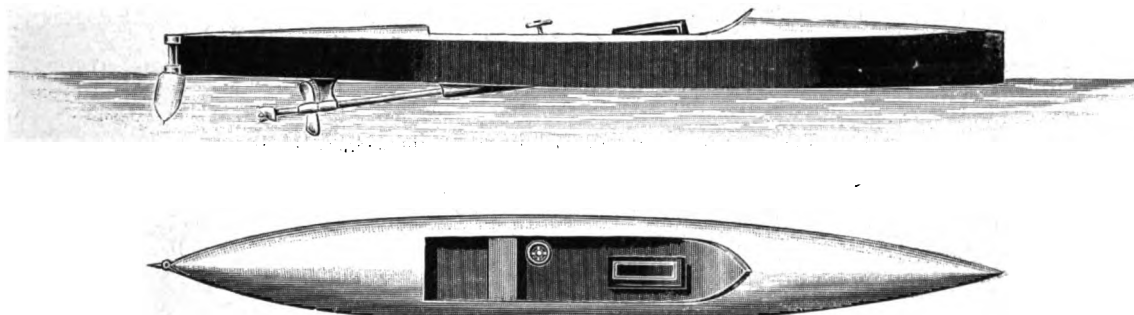
A PUBLIC service of De Dion steam omnibuses has been started between Troyes and Tonnerre, France, a distance of thirty-eight miles.

MR. W. F. PEARE, of Waterford, has just received delivery of a beautifully finished 10-h.p. Gladiator car to the order of Sir H. Hudson-Kinahan.

A MEETING of the committee of the Motor-Cycle Trades' Association was held on the 23rd ult., to pass the memorandum and articles of association.

MESSRS. O'HALLORAN, BROS. AND CO. have been appointed European agents for the light cars of the Crest Automobile Manufacturing Company, of Cambridge, Mass., U.S.A.

HEREWITH we illustrate in elevation and plan the Napier 75-h.p. racing petrol launch, which is being built for the international motor-launch race to be held in connection with the Automobile Fortnight in Ireland next July. The hull is built of 20 B.W.G. steel, and the frames and floors of light angles



Elevation and Plan of Napier 75-h.p. Racing Petrol Launch.

and plates. The total length of the boat will not exceed 40 ft. over all, to conform with Mr. Alfred Harmsworth's conditions for the International Racing Launch Cup. The weight of the hull will be under half a ton, and the total displacement will be $1\frac{1}{2}$ tons. The beam is to be 5 ft., and the moulded depth 2 ft.: the engine will have four cylinders, developing 75-b.h.p. at a speed of 800 revolutions per minute. It is expected that a speed of 25 knots will be attained.

THE most ambitious tour of the season planned by American automobilists is that from Chicago to the Mammoth Cave, in Kentucky, which will be undertaken by members of the Chicago Automobile Club the last week of June and the first week of July. Fifteen members of the Club have already signified their intention of making the trip, each being accompanied by three friends as guests, thus already making a party of sixty. The tour will cover about 1,000 miles and extend over fourteen days.

MR. J. WILLIAMS, of Haslemere, has been touring Ireland on a motor-bicycle. While at Kilross, near Tipperary, a horse seems to have been frightened by the machine, with the result that a man was thrown from the cart he was driving and killed. At the inquest the jury found a verdict in accordance with the evidence, that death was caused by concussion of the brain, and added the following rider:—"We desire to add also that, owing to the many accidents that have occurred from time to time of a similar nature and through a like cause, some legislative means should be taken to ensure public safety from them in the future."

EARL RUSSELL has drafted a Bill to amend the Locomotives-on Highways Act, 1896.

FROM the B. F. Goodrich Company, of Akron, Ohio, we have received an elaborate catalogue. It is devoted to the Goodrich clincher tyres, and describes in minute detail the operation of attachment and detachment.

THE Gare Patent Tyre and Wheel Company, Limited, has been registered with a capital of £12,000 to adopt an agreement with Mr. T. Gare, and to carry on the business of manufacturers of tyres and wheels for all kinds of vehicles.

ON Sunday next, the 3rd inst., the Austrian Automobile Club will hold its annual hill-climbing competition from Neuwaldegg to Exelberg. Over twenty entries have been received, including two 28-h.p. Lohner-Porsche combination petrol-electric cars.

HAVING seen the letter in last week's *Journal* as to the provision of facilities for motor-car instruction in the Metropolis, Mr. George Tufnell writes to inform us that he has a private track in the Leytonstone Road, Leytonstone, E., for that purpose.

THE Rev. S. B. Stallard Penoyre, rector of Stockton, in Herefordshire, and Dr. Douglas W. Eshelby, a resident in the parish, are anxious to find the owner of a motor-car, painted red, which passed through their village on a recent evening, driven at the rate of more than thirty miles per hour.

THE Vienna "automobile week" has now been definitely fixed by the Austrian Automobile Club for September 6th to 13th. The Austrian International "Circuit" will be run on September 6th, the Pöetting Cup on September 7th, and the Semmering Hill Climb on September 13th.

A SERIES of lectures under the title of the Westminster Lectures has been commenced at the Caxton Hall, Westminster-Street. These will be held on Friday afternoons during May, and on the 8th inst. Mr. Mervyn O'Gorman will lecture on the economic use and probable future of the motor-car.

THE new two-seated voiturette which the Lanchester Engine Co. Limited, will produce in large quantities for next season will retain many of the features of the present car. Lightness, speed, and simplicity will be the chief qualities, the present standard of high-class finish being retained.

At the Crystal Palace on Saturday, the Aero Club opened its season with two balloon ascents. Each of the balloons was of 45,000 cubic feet capacity. In one of them, the "Graphic," Mr. C. F. Pollock ascended, accompanied by Professor A. K. Huntingdon, Mr. Martin Dale, and Dr. F. W. H. Hutchinson. In the other balloon were Mr. Frank H. Butler, Mr. A. Leslie Bucknall, and Mr. Percival Spencer. The "Graphic" ascended a quarter of an hour before the other balloon, and descended near Rochester. The second balloon descended at Sittingbourne, and when passing over the Chatham Dockyard narrowly escaped fouling a man-of-war. The trail rope touched one of the masts of the warship, but by skilful manipulation the balloon was got clear.

NORFOLK MOTORISTS AND THE POLICE.

THE furious driving cases in Norfolk arose in connection with the Easter run of the Norfolk Club, and P. C. Crane's description how he measured a quarter of a mile by pacing it was a feature of the trial. It was suggested by the solicitor for the defence that he took very short steps. Mr. A. C. Havers, architect, of Norwich, said that on the previous Friday he went with Mr. Garland and timed him, after having previously measured out a quarter of a mile with a tape. He did the distance in 80 secs. The constable's measurement was 12 yards short of a quarter of a mile. Major Cubitt (to Police-constable Crane): How many paces did you measure? —440. Major Cubitt: Then, as a soldier, I tell you you are short. Police-constable Crane: I went 70 yards beyond that. (Laughter.) In the case against Mr. J. J. D. Paul, Police-constable Aldous said he covered the distance in 5 min., or at the rate of 18½ miles an hour. The stop watch which the other constable, Pile, had was being stopped with a pin. They did not rely on that watch, however. Mr. Morris protested against being timed by such a watch. He was on the high road, and never left it to conceal himself. All the defendants could see him for at least a quarter of a mile before he came up. The road was absolutely straight. Mr. George Chamberlin, Chairman of the Automobile Club, by permission of the Chairman, then addressed the Bench. Every member of the Club, from their Royal patron down to their youngest member, would be guilty of a breach of one of their principal rules if at any time they drove in an ungentelemanly or unsportsmanlike way, or in any manner at all dangerous to his Majesty's lieges. What he ventured to suggest to the Bench was that this trap which was laid by the police on this high road on the first day that the Club went out for its initial run to Yarmouth was laid at a spot which, as they who knew the district well would say, was a place where motorists could have run even at over twelve miles an hour with danger to no one but themselves. He went from Acle to Yarmouth, and from Yarmouth to Acle, and the only traffic he met was two small herds of cattle, one carrier's cart, and a man on a bicycle. It would be diametrically opposed to the wishes, as well as to the interests, of the Club if any member drove through any inhabited place where there would be danger to vehicular or pedestrian traffic. On this road, no matter at what rate they went, they drove with danger to no one but themselves.

HILL-CLIMBING TRIALS.

At the hill-climbing trials at Dashwood Hill, organised by the Oxford Automobile Club, the following times were made:

In the class for cars whose list price did not exceed £300, Mr. F. G. Barton, on a 5-h.p. Clement, made the ascent in 2 min. 58 1-5 secs. For vehicles catalogued at over £300, the best time was by Mr. W. E. Batt (representing Mr. W. L. Creyke), on a 6-h.p. Serpollet, in 1 min. 20 3-5 secs. The nearest approach to this was by Mr. Underwood, on a 10-h.p. M.M.C. car. On a 2½-h.p. Humber motor-bicycle Mr. Rowell made the ascent in 1 min. 49 4-5 secs. The cup for the best time was therefore won by Mr. Creyke, but as he had presented it, he withdrew his claim in favour of Mr. Rowell, who was not, however, a member of the Club, and it thus went to Mr. W. Collier.

CORRESPONDENCE.

PUBLIC MOTOR SCHOOLS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The letter from "Would-be Motorist" in your last issue, asking for information as to privately-owned grounds where amateurs may learn to handle vehicles with confidence, opens up a question which will need solution before long. It is all very well for vendors of motor-cars to send the purchaser out in charge of a skilled man in order to teach him how to drive, and then to permit the buyer to take charge in some quiet country road, but something more is necessary. Of course, what is everyone's duty becomes no man's task, but surely some solution of the difficulty might be found. Would it not be possible for manufacturers and agents to run a joint school and track in the neighbourhood of London? For instance, could not the Herne Hill cycle track be used for the purpose in question?—Yours truly,

WOULD-BE STUDENT.

THE CLASSIFICATION OF MOTOR-CYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Hooydonk's chief grievance seems to be that, to illustrate a fact, I named a certain machine—a particularly light one. I am afraid I may have to use the same machine as an illustration again in regard to another point which he raises, namely, that classification by weight will mean skimping the vital parts, and consequent weakness and danger. Another argument I might use is the results of "weight competitions" on cars, which have been reduced in weight enormously during the last few years, and have even added to their strength. Mr. Hooydonk's remarks re racing at Bexhill do not call for much comment, as the idea of racing with mudguards and other roadster fittings is ridiculous to anyone who rides with the intention of winning, if possible. Another statement, namely, that

the English manufacturers know all about building the bicycle part, is in my opinion rather exaggerated. Our manufacturers are undoubtedly at the top of the tree, as far as ordinary cycles are concerned, but the stresses on the motor-bicycle are quite different, and the makers have a lot to learn yet. There were many broken front forks last year on English machines, though the make I have particularly in mind was heavy enough, goodness knows. Weight does not necessarily mean strength. Mr. Hooydonk would like to foster "greatest horse-power for given cylinder capacity," irrespective of weight, but I still maintain that, particularly for motor-cycles, the object should be the "greatest power for given weight," and I am very pleased to find that the Automobile Club has adopted this latter standard.—Yours faithfully,

ERNEST H. ARNOTT.

POINTS ON LUBRICATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the article in the last issue of the *Journal* on "Lubrication," which is no doubt to the point, the writer recommends the introduction of petrol to the cylinders as a cleaning agent after an over-dose of lubricant. Personally, I am much against using petrol in the motor cylinders for this purpose. Petrol rots the fine surface of the cylinder walls, and searches out the lubricant thereon so severely that some considerable time must elapse before a good rubbing surface is imparted again. Whenever it is necessary to clean out use paraffin oil only.

The writer has reason to believe that if users and builders of motor-car engines would place before the lubricating oil manufacturers the fullest particulars of their respective type of cars and engines instead of, as is frequently asked for, "oil for water-cooled motor," or "air-cooled motor," much greater satisfaction would prevail all round.

Regarding excessive lubrication it should always be borne in mind that with the ordinary drop-feed oiler to cylinders, if these be set to give six drops per nipple when the car is standing and not moving over the road surface, nearly twelve drops will be fed at normal travelling speed. In this matter the motorist should always use his nose and eyes, noting the quality of the burnt gases from the exhaust silencer.

Good oil should perform these services: (1) Reduce friction to the minimum; (2) continue to lubricate and prevent seizing of pistons when the circulating pump does only 25 per cent. duty, or is inefficient; (3) withstand high temperatures, giving off no vapours, which vapours, however slight, will mix with the new charge in the suction stroke and lower the power of explosion; (4) after a period of intense heat should leave no gummy deposit in cylinders or valves.—Yours faithfully,

E. SHACKLETON.

THE SPECIFIC GRAVITY OF PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The paragraphs which have recently appeared in the Press respecting the specific gravity of "Pratt's Motor Spirit" have made it evident that many automobilists are apparently unaware that the specific gravity or density of a spirit is not, of itself, an invariable indication of its suitability for motor purposes. As a matter of fact, it is quite possible to have a spirit of a specific gravity or density of '680, as ascertained by the hydrometer or densimeter, which shall, nevertheless, be quite useless for motor purposes.

Provided that petroleum spirit is properly manufactured, it may safely have, in our opinion, a specific gravity as high as '715, or even '720, and give perfect satisfaction in motor-cars. It was not until after we had satisfied ourselves, by means of practical tests, as to the correctness of this view, that we decided to supply "Pratt's Motor Spirit" of a greater density than '680. At the outset, we supplied '700 specific gravity, and a month or more's trial of this demonstrated the fact that "Pratt's Motor Spirit" of that density gave perfect satisfaction, so much so, that no difference in the results obtained was apparently noticed. From '700 specific gravity, we proceeded gradually to '715 and '720. Whilst we have received a few complaints respecting this latter spirit, we have found that these have, in most cases, been made by those persons who having tested it with a hydrometer or densimeter, and found it to be of a greater density than '680, at once concluded that the spirit must necessarily be unsuitable. A far larger number of correspondents have, on the other hand, written to say that they have not been able to observe any difference in the results obtained.

In order, however, that there may be no uncertainty about the matter, we have requested Dr. Boverton Redwood to make a careful investigation of the subject, and we expect shortly to have his report.

In connection with this it is of importance for automobilists to know that, at the present rate of development of the motor-car industry, it may not improbably become, in the near future, a matter of great difficulty to supply the demand for spirit if '680 specific gravity be insisted upon. Automobilists will then be compelled to use a spirit of a higher density, such, for example, as we have been speaking of.

We can still continue to supply "Pratt's Motor Spirit" of .680 specific gravity, though only to a limited extent. In order that those automobilists who are to compete for the Gordon Bennett Cup may feel no uncertainty as to the quality of motor spirit which will be procurable in Ireland, we

beg to say that we are making extensive arrangements for having ample stocks of "Pratt's Motor Spirit" '680 specific gravity placed at convenient points there.—Yours faithfully,

ANGLO-AMERICAN OIL COMPANY, LIMITED.

THE NUMBERING QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It seems a pity the A.C.G.B.I. Committee could not have put a simple issue before us like this:—"Are you in favour of leaving the law as it is, or of an attempt to amend it on the lines of the Bill put forward by the Committee of the Club?"

But it is to be hoped that no one will vote for the "Scott-Montagu" Bill under the specious idea that the Club or anyone can bind Parliament to do anything, especially about any judgment of a court. Clause 15 in the amended Bill would surely act as a red rag in Parliament.

Surely the renewed outbreak of police and magisterial intolerance in certain places, and the intemperate prejudice shown by Parliamentary questions and in the *Times*, should warn us against giving any assistance to reactionary legislation, which would make us more than ever the (easier) victims of such prejudice.

Clause 3 of the amended Bill (even if Parliament were to pass such a complete and dangerous overturn of the usual principles and procedure of the criminal law, and appeals thereat), would bring us no remedy. Even if we got to the Supreme Court judge he could and would only listen to points of law.

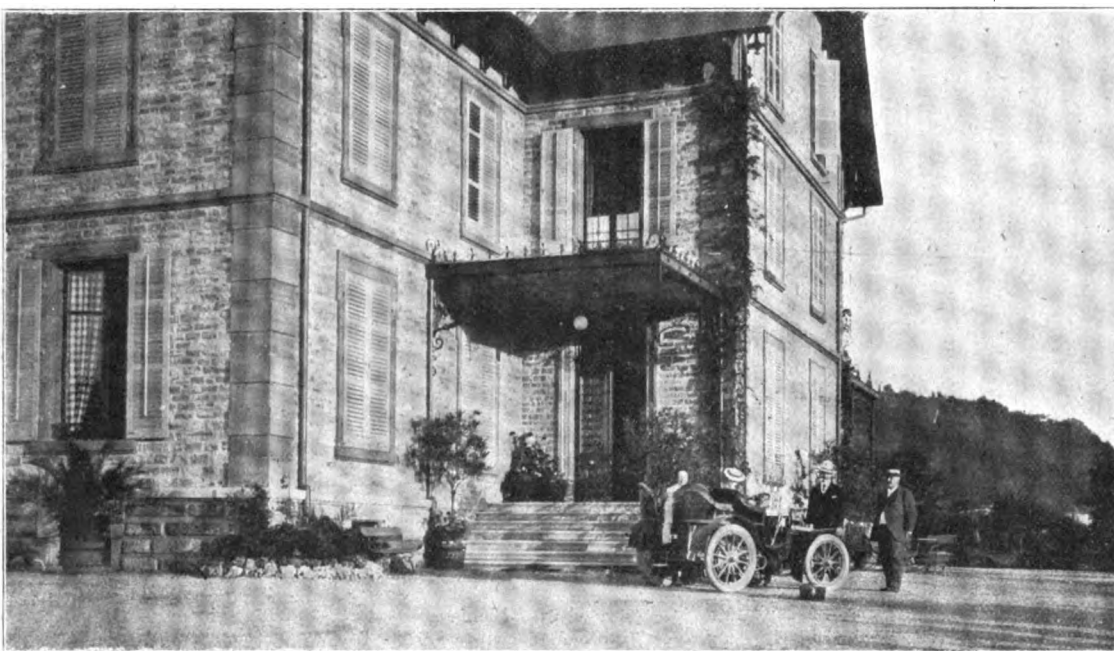
I see the Bill is not intended to apply to Scotland (since the Local Government Board has no jurisdiction here, nor is there, of course, any

containing the ten gallons were marked "petrol, highly inflammable." He admitted that in about two instances he had sold petrol when motor-cars had been stranded. He could give, however, innumerable cases where he had refused to sell petrol, and in consequence he had been reported to the Automobile Club. Mr. Neville, addressing Mr. Kendrick, asked if it was desired for the petrol to be forfeited. Mr. Kendrick. No, sir. We have no provision to keep petrol ourselves. We might set up a corporation motor-car. Mr. Neville said if defendant stored highly inflammable spirit in such a place he should impose a heavy penalty. He would be fined £10 and costs.

MOTOR-CAR ACCIDENTS.

A KINSON (Dorset) jury has held an inquiry into the death of a child killed by being knocked down by a motor-bus proceeding through the village while on a journey from Bournemouth to Wimborne. After hearing the evidence, which went clearly to exonerate the driver, the jury returned a verdict of "Accidental death, and testified that there was no blame attributable to the driver of the car. They expressed the opinion that efforts should be made to check the high speed at which motor-cars (with special reference to private cars, and not with regard to this particular one) were driven along that road.

DR. DANFORD THOMAS held an inquest at Marylebone on Samuel Jole, who was killed in Marylebone Road, London. The Hon. Dudley Marjoribanks said he was the owner of an electric brougham. He was being driven in it down Marylebone Road towards King's Cross, at about 10 miles an hour. He saw Jole step off the kerb in front of the brougham. The car-



M. A. Peugeot at Home at Valentigney (Doubs.)

Court of King's Bench), but if Parliament took it up, I fear we should be dragged in by clauses supplied from the Scottish Office; and in any case it seems the duty of Scotsmen to point out, and prevent by vote, anything which they may feel is against principle and the public weal in the sister kingdom.—Yours truly,

NORMAN D. MACDONALD.

THE STORAGE OF PETROL.

At Wolverhampton Police Court, before Mr. N. C. A. Neville, G. E. Brown, ironmonger, Snow Hill, Wolverhampton, was summoned for keeping at Bell Street a quantity of petrol exceeding three gallons in bulk without a license, contrary to Section 7 of the Petroleum Act, 1871. Mr. Kendrick (assistant town clerk) prosecuted, and Mr. Haslam defended. Mr. Kendrick said the defendant had a large coachhouse in Bell Street, and dealt largely in petrol spirit, the principal store for which was at Sedgley. On April 3rd P.S. Bates visited defendant's premises, and found ten gallons of petrol spirit stored under conditions which were certainly very dangerous. P.S. Bates, sub-inspector under the Act, said the coachhouse was saturated with linseed oil. There was no notice on the door as to what the place contained. In reply to questions, witness said there was no ventilation, so far as he could see, but if the defendant said there was he would not dispute his statement. The place was not licensed, neither had notice been given that petrol was to be stored. The defendant gave evidence. He said he thought he required a license if he sold the spirit, but not if he stored it for use with his own car. The barrels were empty, and the cases

was on its proper side. Jole's back was towards the brougham. He must have been about 10 yards ahead. The driver instantly put on both brakes and rang his bell, but the front of the car caught Jole in the back and the car went over him, crushing him. The jury returned a verdict of accidental death.

An adjourned inquest has been held at the Northampton Borough Police Station, before the Borough Coroner, on the body of John Wright, aged 79, who died on April 4th as the result of injuries sustained through being run over by a motor-car at Kingsthorpe, on October 24th, 1902. The jury returned a verdict of "run over by a motor-car."

CLAIM FOR DAMAGES.

In the King's Bench Division, Mr. Justice Phillimore and a common jury have heard an action brought by H. C. Gooseman, Denbigh Street, W., against A. J. Airey, of High Street, Lewisham, to recover damages for personal injuries sustained in a collision between a motor-car, in which the plaintiff was riding, and a cart driven by a boy in the defendant's employ. The plaintiff's case was that on October 15th, 1902, he was being driven in a motor-car along the High Road, Lee, when the defendant's cart came along on the wrong side of the road, and at an excessive speed. In consequence of the boy in charge of it not keeping a proper look-out a collision took place, in which the plaintiff received such injuries that he was laid up for some weeks, and received a severe shock from which he was still suffering. The jury returned a verdict for the defendant, and judgment was given accordingly.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Dartmouth ...	*V. Delbos, Dartmouth	—	Costs only to be paid
Nottingham ...	E. Broughton, Radford	16 m. p. h.	£5.
Loughborough ...	*W. Mawbey, Leicester	20 m. p. h.	20s.
Birmingham ...	O. Rolls, Birmingham	25 m. p. h.	£2, etc.
Eastbourne ...	B. E. Ellingham, Dorset Square, E.C.	"Terrific"	£1, etc.
Westminster..	Sir W. Barttelot, Bt., St. James's, W.	—	adjd.
London (Marlboro' St.)	C. Browne, Onslow Gardens, S.W.	"Racing"	£5, etc.
"	R. Browne, Kensington, W.	"	£5, etc.
Garstang	R. Riley, Gt. Eccleston	"	£3, etc.
"	H. R. Kay, Lytham	"	£3, etc.
"	W. H. Wilding, Fulwood	"	£3, etc.
Kidderminster	S. Jay, Wilden	"	£5, etc.
Romford	G. Isaacs, London, W.C.	23 m. p. h.	£10, etc.
West London	C. A. Pascall, Barnes	—	£5.
"	O. Stanton, Regent's Park	20 m. p. h.	20s.
"	J. B. Purchase, 14, Regent's Street, S.W.	—	20s.
"	C. Watney, Berkeley Sq.	—	20s.
"	A. Clements, Bayswater	—	20s.
"	O. Dodson, Penge	—	20s.
Winchester...	C. Mills (driver to Mr. A. Balfour, M.P.)	—	£5, etc.
Windsor	H. B. Vogel, Hampton Court	—	£3.
"	J. McClean	—	adjd.
Bishop Stortford	C. Hay, Bishop's Stortford	24 m. p. h.	£2, etc.
Coventry	W. Williams, Coventry	—	£2, etc.
Kingston	G. H. Chirgwin's driver	—	—
York	S. K. Baines, Bradford	—	Adjourned.
"	E. P. Capon, Harrogate	—	"
"	G. Tennant, Leeds	—	"
"	H. Carass, Leeds	—	£5, etc.
"	T. H. Haggass, Keighley	—	£2, etc.
"	J. Burgess, York	—	£2, etc.
"	H. K. Hitchcock, York	—	30s., etc.
"	F. W. Carr, York	—	30s., etc.
"	R. Beard, York	—	30s., etc.
Settle	W. W. Clarke, Barnsley	—	£2, etc.
"	G. H. France, Bradford	—	£2, etc.
"	*J. W. Collinge, Colne	—	£1, etc.
Stratton	L. J. Rees, Birmingham	30 m. p. h.	£5, etc.
Woking	J. Lipop, Teddington	21 m.p.h.	£3.
"	H. Hebbard, Queen's Gate, W.	21 m.p.h.	£3.
"	S. A. Medwin	24 m.p.h.	£3.
Cardiff	*P. Binns, Cardiff	—	40s., etc.
Blofield (Norfolk)	G. Sillem, Long Stratton	—	£1, etc.
"	J. J. Paul, Norwich	—	£1, etc.
"	H. Egerton, Norwich	—	£1, etc.
"	E. J. Bullard, Norwich	—	£1, etc.
"	W. R. Spelman, Norwich	—	£1, etc.
"	Baron Barretto, Norwich	—	£1, etc.
"	F. Morriss, King's Lynn	—	£2, etc.
"	B. Hardstaffe, Nottingham	—	£1, etc.
"	J. Griffin, Norwich	—	Dismissed.
"	H. F. Garland, Norwich	—	Dismissed.
Birmingham	*L. Gibbins, Edgbaston	30 m. p. h.	10s., etc.
Yarmouth ...	J. Thresher	—	£2, etc.
Wellington...	*H. Parker, Wellington	—	1s., etc.
"	*W. Haines, "	—	1s., etc.
Consett	*G. Black, Consett	30 m. p. h.	5s., etc.
Horsham	F. Curry, Park Lane, W.	24 m. p. h.	40s., etc.
"	A. Daniel, Cannon St., E.C.	25 m. p. h.	40s., etc.
"	G. Romain, Lancaster Gate	33 m. p. h.	40s., etc.
"	*A. L. Cobb, Beckenham	22 m. p. h.	£1, etc.
"	P. H. Joseph, Harley St., W.	22 m. p. h.	£5, etc.
"	A. T. Kennedy, New Cross	23 m. p. h.	40s., etc.
Arundel	Captain C. Hope, Hilsa	27 m. p. h.	£4, etc.

Where no alleged speed is given it is understood to be above the legal limit.
* Motor-Cycle Cases.

At the moment of going to press we received from several of our correspondents news of other cases too late for insertion.

WALTER WILLIAMS, a Coventry machinist, has been summoned for furiously driving a motor-car at Allesley. Defendant said that whilst he might have been exceeding the legal limit it was through putting a car weighing nearly two tons at a hill which it could not have got up had it not been given a good start. He was testing the car's capabilities. Major R. J. Beech (chairman) said the Bench desired it to be known that they did not approve of the locality in question being used as a trial ground for motor-cars.

SIR WILLIAM BARTTELOT, Bart., was summoned by the police at the Westminster Court for driving a motor-car to the common danger at Knightsbridge. Police-constable 327 B. said that about 4.40 on the afternoon of the 28th ult. he saw the defendant drive a motor-car on the wrong side of a pedestrian refuge at Knightsbridge. He collided with another car at the junction of Sloane-street and High-road, and when told he had driven the wrong side of the refuge, he replied, "I am on the right side." To the officer's statement that he would be reported for a summons, Sir William replied, "I don't mind." Mr. Sheil—I will adjourn the summons for another week. Let the defendant be informed that unless he answers this day week there will be a warrant.

CLAUDE BROWNE, of Onslow Gardens, S.W., and Rowland Browne, of Bramham Gardens, Kensington, were summoned at Marlborough Street Police Court for driving motor-cars in Hyde Park on March 19th at a greater speed than 12 miles an hour. Several constables and the gatekeeper of the park gave evidence of having seen the defendants racing with their motor-cars round the park at a speed of from about 20 to 30 miles an hour. Mr. E. Campbell Muir deposed to having been on his car on the occasion in question, and said that when he was about to turn his vehicle round he was placed in danger by the conduct of the defendants. He never saw such a disgraceful piece of driving, and if motor drivers continued that sort of thing all those who drove motors would probably suffer in consequence of possibly having permission to drive in the park taken away from them. He had driven a car for six years, and thought—though it was very difficult to give an estimate of the speed of a car—that the defendants must have been going at a rate of from 20 to 30 miles an hour. The defendants did not appear in court, but a solicitor who attended, in pleading guilty on their behalf, stated that Mr. Claude Browne, who was in the motor business, was now on his honeymoon. Mr. Kennedy imposed a fine in each case of £5 with 2s. costs.

SERGEANT BEACHER has distinguished himself, having secured a good haul of convictions at Horsham.

POLICE TRAPS.

SOUTHWARD of Wareham, the police have a measured distance running from the South Bridge towards Swanage.

MEASURED distances are being introduced by the police in the Windsor district.

BETWEEN Hellifield and Long Preston (Yorks) is a measured half mile.

OWING to an influential squire's horse being frightened by an automobile near Blake Street Station, on the main road from Birmingham to Lichfield, a petition has been signed by his neighbours asking the police to stop those motorists who exceed the legal limit. Motorists using this much-frequented road from the Midland Metropolis will do well to drive cautiously, or they may be trapped.

THERE is a police trap between Reservoir Hill and Lawnswood, on the Leeds-Otley road.

NO LIGHTS.

MR. C. H. BARLOW, of Liverpool, has been fined 5s. and costs for driving a motor-car without a light.

At the Nottingham Shire Hall, Richard Matthews, a groom, employed by Mr. Webb, Gedling Manor, was summoned for driving a motor-car at Carlton without a light. The defendant was fined 10s.

At the Frome Petty Sessions, Mr. T. Millard, of Frome and Trowbridge, has been fined £1 and costs for riding a motor-car at night without a light.

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Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, MAY 9, 1903.

[No. 218

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

BUEA



MERE sectional reform of the roads with the maintenance of the present muddled state of control cannot be defended, in view of the wonderful changes now being effected in locomotion. The present roads were designed for pedestrians and horse traffic—both being comparatively slow in movement, compared with modern developments. The rail-less trolley car, the railway crossing, the tramcar rushing along a prepared track at twenty miles an hour, the huge motor-lorry with its accompanying trailer, the motor-bicycle with its fore-carriage, the motor fire-engine, and other new objects of interest in road traffic, all raise fresh questions that could not have been imagined in the older days of road construction. They must be considered now, and the question is, from this brief showing, one that must be regarded from a broad and liberal point of view. We propose to return to the matter in an early issue, being convinced that unless the necessity of a thorough discussion of the whole question is urged by motorists and road reformers, the present departmental committees on the subject may only serve to make confusion worse confounded.

Departmental Committee on Highways.

MR. W. REES JEFFREYS, hon. secretary of the Roads Improvement Association, has given evidence before the Local Government Board's Departmental Committee on Highways. He advocated the adoption of the recommendation of the Royal Commission on Local Taxation in favour of an additional grant from the National Exchequer in respect of the maintenance of main roads, and the allocation of portions of the grant to the improvement of existing main roads, as well as the construction of new trunk roads. He suggested that a Central Highway Department of State should be created to have control over highway administration throughout the country. Mr. Jeffreys also urged the advisability of reducing the number of highway authorities by transferring the highway powers of rural district councils to the county councils, and of simplifying the machinery by which land is acquired compulsorily for the widening and construction of roads; and concluded by pointing out the pressing necessity for the consolidation of highway law.

A Motor-Car Track.

MR. W. W. B. HULTON, chairman of the Main Roads Committee of the Lancashire County Council, has been emphasising before the same committee the benefits accruing from the fact that the county council have power to withhold grants towards the maintenance of main roads by the smaller highway authorities if the roads are not properly maintained, and by granting or withholding contributions towards the cost of works on ordinary highways to ensure that other highways are properly and efficiently maintained. Mr. Moncur, chief surveyor of main roads to the Staffordshire County Council, gave similar evidence in regard to the maintenance and improvement of the main roads in Staffordshire, and described his plan for a model motor car track, by which, on a road ninety-one feet wide, two carriage ways (for ordinary traffic), two footways, two motor tracks

(with bays for passing), and one bicycle track could be accommodated.

Manchester Club Run.

ON Saturday last the Manchester Automobile Club had a run to Leasowe, staying for the Saturday night at the Leasowe Castle Hydro, formerly the residence of General the Hon. Sir Edward Cust, Bart., and now an up-to-date hotel, which is situated in its own grounds of some 50 acres on the western shore of the Wirral Peninsula, and located between the Dee and the Mersey, on the very verge of the Irish Sea. The smoke-room of the hotel goes by the name of the Star Chamber, as it was some time ago fitted up with the old oak panelling which was originally fixed in the Court of Star Chamber at Westminster. The run to Leasowe was a very fine one, over roads that cannot be excelled, and through lovely scenery; unfortunately the weather was not propitious, which limited the number of members who took part in the run. The cars started back mostly in the forenoon, a stop being made at Chester for lunch. The following list gives the names of members participating in the trip, viz.:—Messrs. S. Brooks, C. Frost, A. E. Jones, H. M. Lowther, S. Okell, W. E. Roweliffe, J. Saville, J. Hoyle Smith, S. Wallwork, and J. Whittaker.

The Dust Problem.

THIS problem, as some people imagine, is not a new one, but dates from the earliest ages. At all periods, as students of history know, dust storms have overcome travellers, and at all times traffic of any and every description on the highways has been inconvenienced by its presence. Whether the traffic has been cattle or diligences, armies or cyclists, coaches or motors, the results have been the same blinding clouds of dust. In Tuesday's "Times," in its reprint of news of a hundred years ago, in an advertisement of a house for sale at King Street Hammersmith, as a special inducement to purchasers, it is mentioned that the house "is removed from the road by a courtyard, which prevents any inconvenience from the dust." At the "Old Ship," Brighton, we seldom sit down to a meal without gazing at the coaching pictures hanging on the wall, arousing feelings of envy of the good old times, when a coach would be driven along at twenty miles an hour, leaving in its trail the usual clouds of dust.

Motor Volunteer Corps.

OWING to the War Office delay, no one is yet enrolled in the Motor Volunteer Corps, and no officers gazetted, yet several of the members who have applied for enrolment have been doing some useful military work. On April 24th, three members, Messrs. E. Midgley, E. Clift, and W. C. Bersey, under Mr. W. J. Crampton, went down by road from London, and reported themselves at Dover to Major Webber, A.D.C. to Gen. Sir Leslie Rundle. On the following day they drove Field-Marshal Sir Evelyn Wood and Sir Leslie Rundle and staff on a tour of inspection in the neighbourhood of Hythe, Lydd, etc. All the arrangements worked perfectly, and the Field-Marshal expressed his approval of what had been done. Last week Messrs. E. Midgley and E. Owers drove Gen. Sir Leslie Rundle in a staff ride, organised by Field-Marshal Sir Evelyn Wood in the neighbourhood of Salisbury. On Thursday, the 7th inst., Mr. Vere Ker-Seymer took his 15-h.p. Panhard and drove Col.

Collings, commanding the Reading Regimental District, on a tour of inspection of his district. Mr. Vere Ker-Seymer was the guest of Col. Collings and his officers at dinner on the night previous to the inspection.

An Indian Run.

RECENTLY Lord Wolverton's motor-car, a 12-h.p. Gobron Brillie, made a notable journey from Poona to Mahableshwar, the first automobile trip on that Indian road. It carried Major Moss, Mr. A. Hoare, and the mechanic, and in the course of 76 miles three formidable ghauts were encountered. The road from Wai to Panchgani constitutes a rise of about seven miles. The actual running time was four hours fifty-two minutes.



A 12 h.p. Gobron-Brillie Car in India.

Ordinarily the journey by tonga occupies twelve hours, so that there was a substantial gain in time, although no attempt at racing was made. At Mahableshwar the car attracted considerable attention, the police having to keep the crowds of natives from it by means of a fence. The same car has also made a non-stop run from Poona to Bombay—124 miles—in less than six hours.

Progress Possible.

THE trip not only demonstrated the serviceability of the automobile, but also the restrictive nature of the regulations placed upon petrol. The result of these latter is that only inferior spirit is too often procurable, and after a few days' run with this Gobron car the valves had literally to be dug out with a knife, and ordinary carburettors were unable to deal with it. It is to be hoped that the Indian Government will recognise their duty, and foster intercourse between various parts of the great Dependency by means of the motor-car.

In North-East Lancashire.

THE annual meeting in connection with the North-East Lancashire Automobile Club took place at the Old Bull Hotel, Blackburn, when all the former officers of the Club were re-appointed, and Mr. A. Hitchon, of Clayton-le-Dale, and Mr. W. Livesey were added to the committee. In presenting his annual report the hon. sec., Mr. G. D. Walmsley, referred to the runs which had taken place during the past year and to arrangements which had been made for the supply of petrol to the members at a reduced price. The Club numbered thirty-one members, which would during the present season be increased to fifty. The Club has in hand a balance of £29 on the year's working, which, however, will shortly be considerably reduced by payment of the fee for affiliation with the A.C.G.B.I. The committee have decided not to ask the old members for any subscription during the current year. After the business meeting the annual dinner

was held under the chairmanship of Mr. F. T. Marwood, J.P., of Pleasington. The first annual trip of the same Club was held on the 23rd ult. Prior to the trip the participating members assembled in front of the Town Hall, Blackburn, and then proceeded to Hurst Green. Many of the members and their friends availed themselves of an opportunity which was afforded to them of inspecting the interior of Stonyhurst College. Afterwards an excellent tea was provided at the Sherbourne Arms, Hurst Green, and the party then proceeded homewards. Eight cars, a motor-tricycle, and three motor bicycles took part in the run, and there were upwards of thirty of the members and their friends present.

The Motor-Car Bill.

PROBABLY those who have, in season and out of season, advocated the registration, identification, numbering, lettering and labelling of motor-cars, are satisfied with the position in which motorists now find themselves. In the House of Commons on Tuesday, Mr. Ellis asked the President of the Local Government Board whether he would take steps to place the law with respect to motor-cars on a more satisfactory footing by removing the present hard and fast limit as to speed, subject to due security for the safety and convenience of other users of public roads, by requiring registration of the vehicles, and by enacting a high maximum penalty for breaches of these and any other conditions it might seem desirable to impose. Mr. Long, whose interest in automobilism was shown by his attendance at the Agricultural Hall Exhibition, replied to the effect that he had a Bill in preparation dealing with the subject, which he hoped shortly to introduce, and, in reply to a further question from Mr. Schwann, mentioned that he was considering the question of numbering.

Numbering and the Speed Limit.

MR. LONG'S Bill, it is understood in Parliamentary circles, will not provide for unlimited speed, but in exchange for registration and clear identification it will seek to increase the speed limit to from twenty-five to thirty-five miles an hour in the country. The exact mileage is not yet fixed. The Bill will also provide for very heavy penalties for violation. It has all along been urged that in agreeing to the numbering the withdrawal of the speed limit should be conceded. In fact, we have been told that the two points would go together. That the matters have thus been separated would seem to confirm the attitude of those who have consistently opposed numbering from the first.

100 Miles Non-Stop Trial.

THREE vehicles were entered in the quarterly 100-mile non-stop run of the A.C.B.G.I. on the 24th ult., viz., a 22-h.p. four-cylinder Rochet-Schneider car driven by Captain Deasy, which made the journey at an average cost for petrol of 0.92d. per mile. A 12-h.p. Boyer car, entered by the Automobile Supply Co., ran at an average cost per mile of 0.8d. The third car was a 10-h.p. Chenard and Walcker, entered by the Weston Motor Syndicate, and which ran its journey at an average cost of 0.25d. On the mile test, including Dashwood Hill, these cars made speeds equivalent to 20.8, 10.08, and 7.7 m.p.h. respectively. Elsewhere we publish a letter which the Weston Motor Syndicate has addressed to the A.C.G.B.I. on the subject.

Ladies' Automobile Club.

THE Ladies' Automobile Club of Great Britain has been formed with 110, Piccadilly as a centre. The Duchess of Marlborough is to be asked to become president, with Lady Scott Montagu, Lady Beatrice Rawson, and Mrs. Adair as vice-presidents. Lady Cantelupe is the hon. treasurer, and from the list of those who have already decided to associate themselves with this new body its social success is assured.

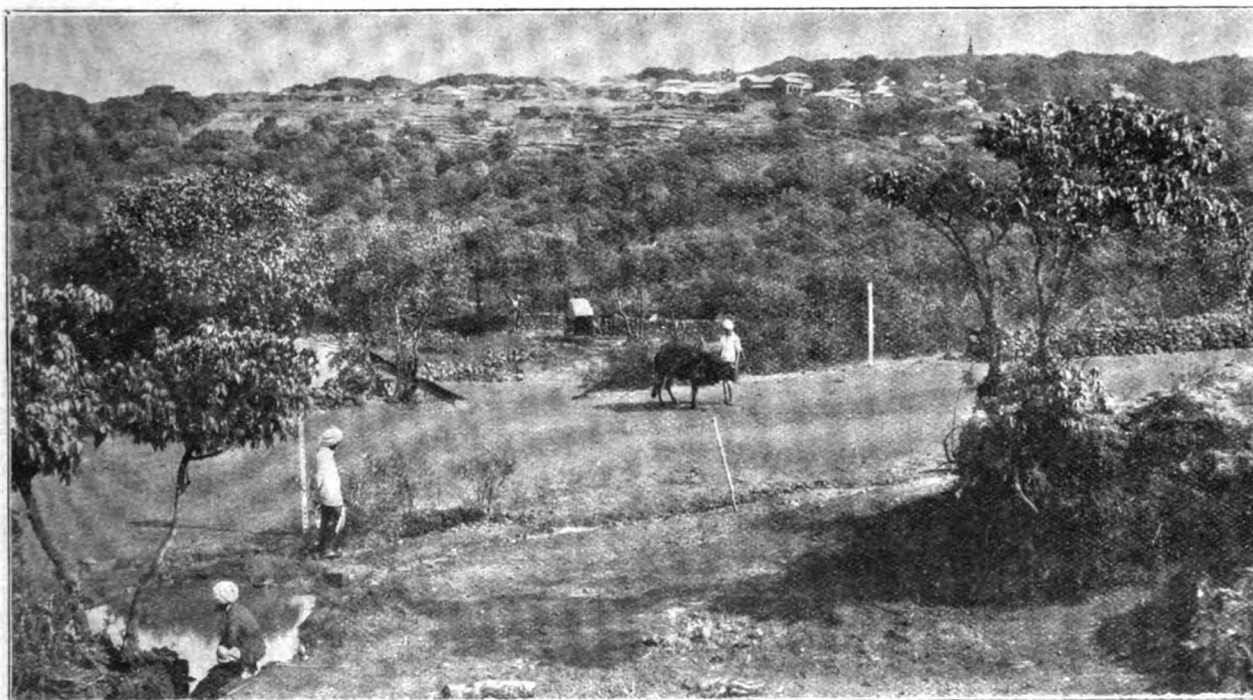
Extraordinary Traffic.

A CASE of importance to users of the roads has been heard by Judge Gwilym Williams at the Pontypridd County Court. The plaintiffs were the Glamorgan County Council and the defendant Mr. T. Morgan, the owner of brewery stores at Pontyclun and an hotel at Bridgend. Mr. Vaughan Williams appeared for plaintiffs, and explained that the county council sought to recover £135 from the defendant for damage alleged to be due to extraordinary traffic caused by a motor dray belonging to the defendant. The road over which the traffic referred to went was a section about ten miles in length between Pontyclun and Bridgend. In addition to having brewery stores at Pontyclun and an hotel at Bridgend, the defendant had a general business in the way of distributing mineral waters. In August, 1901, he acquired a motor-dray, which had been travelling along the road section in question at least once and sometimes twice in the day. When loaded the vehicle weighed eight tons. An important point was that the wheels of the dray were, relatively speaking, extremely narrow when compared with the weight. The weight on the

vice-presidents, Mr. King, taking the vice-chair. The day was a perfect one for motoring, and the roads were in good condition, although there was plenty of dust. After tea the route taken for home was through interesting country *via* Loughborough.

In the Lords.

IN the House of Lords, Lord Lamington has asked his Majesty's Government for a return of the cases reported to the police since January 1, 1902, in which injury was caused to the person or property of the public by motor-cars, otherwise than those accidents in which the occupants of the cars were alone injured. He said that in the meanwhile motor-cars were not really practical machines, and were not engaged in the commercial purposes of the country. They formed a branch of sport which was indulged in on the public roads with a very considerable risk to the public, and to the great detriment of public convenience and comfort. The most stringent regulations had been placed on railways in the interests of the public, yet here were persons who incurred no expense beyond that of the ordinary ratepayer, and used the roads to the detriment of the public



Motoring in India—On the Road to Mahableshwar. (See page 186.)

front wheels per inch of the width worked out at 5.1 cwt., and on the hind wheels at 10.85 cwt. The county bye-laws provided that the width of the wheels of vehicles should be of the regulation size in proportion to the weight. After hearing the case the judge reserved his judgment.

The Leicestershire Club.

THE Leicestershire Automobile Club held their annual meeting a few days ago, electing the officers for the coming year, and adopting a new set of rules. They are fortunate in having secured as president the borough engineer, Mr. E. G. Mawbey. It will be remembered that during Mr. Mawbey's presidential year of the Municipal Engineers he was instrumental in arranging a tour for his colleagues to various works in Leicestershire on motor-cars, gentlemen from all parts of the country lending their cars for the occasion. The hon. secretary of the Club is Mr. W. S. Hubbard. In the first run of the season, briefly mentioned last week, thirty-two members and guests participated, tea being taken at the Royal Hotel, Ashby-de-la-Zouch, under the presidency of Mr. Mawbey; one of the

good. He understood that the Local Government Board were framing some regulations. He would suggest that all motor-cars should be numbered—and also painted, according to their rates of speed. All drivers should have certificates, and, like engine-drivers, be required to pass a stringent examination. The Earl of Portsmouth agreed that some regulations ought to be put in force, but it was perfectly ridiculous that persons should be taken up and, without doing any injury to any human being, be fined for exceeding a certain rate of speed. What they wanted to do was to pass regulations making people drive carefully, and provide for the severe punishment of those who were constant offenders. In reply Lord Belper said he could not enter into many of the questions raised. Speaking for himself, he regarded the present regulations as insufficient to meet the circumstances of motor-driving. There was no obligation at present to report accidents of the kind referred to in the question. No doubt there were a good number that came to the knowledge of the police, but to make a return the Home Office would have to apply to every police authority in the Kingdom, and that would cause expense and trouble. The Home Office felt that there would be no corresponding advantage gained in the attempt to get such

returns, which would be ineffective, and would not represent the true number of accidents that took place. He was informed that in the metropolitan police district forty persons were injured by light locomotives in the year 1902, as reported to the police. There were no persons killed.

Speed in Parks.

THE Liverpool Parks and Gardens Committee have received complaints as to the excessive speed of motor-cycles and motor-cars in Sefton Park, and the question as to their exclusion from the parks is to be considered at the next meeting of the Committee. We hope local motorists will be vigilant as to the course taken by the Committee in the matter. It is not for this body to prohibit automobiles, but rather to frame reasonable regulations as to speed, etc., and to take necessary steps for the due maintenance of such rules. On the other hand, motorists would do well to moderate their enthusiasm for speed in parks and other enclosed areas.

Motorists and Police Stations.

The Berkshire county authorities have under consideration the subject of improved police accommodation at Wokingham. This will, of course, entail considerable expense, and it will doubtless be considered satisfactory by many of the ratepayers to know that the police are trapping motorists and thus securing substantial additions to the funds. A quintette of summonses was heard the other day and £20 added to the county income, so that the rapid travellers in the district may be said to have contributed their quota of bricks towards the new building. In Huntingdon the Chief Constable frequently recounts the total of the fines inflicted on motorists; probably he will soon find an imitator in Berkshire.

The Glasgow to London Trial.

THIS event, organised by the Scottish Automobile Club (Western section), takes place on Wednesday and Thursday of next week, and twenty-five cars and nine motor-bicycles have been entered, the latter comprising two Triumphs, one Quadrant, two Wellers, one Ariel, one Brown, and two Humbers. The start will take place from St. Vincent Street, Glasgow, on Wednesday at 3.30 a.m., and on arrival at Leeds the cars will be driven to the garage of Mr. Rowland Winn in Great George Street, from whence they will be despatched at 6 a.m. on the 14th. Times will be taken at the A.C.G.B.I. on the Thursday evening. The maximum time for the second day is 16 hours 30 minutes.

Mis-use of Cars.

MOTORISTS should tolerate no liberties from mechanics and others they employ in connection with automobiles. A good proportion of the accidents that have occurred in this country have taken place when mechanics were taking the cars out without permission from their employers, and the action of Nicholl v. Beresford, reported on another page, is a case in point. This driver went on a car to call on a friend without any previous intimation to the Hon. Robert Beresford of his intention to use the car for personal pleasure. Whilst thus engaged, he ran down a motor-cyclist, who naturally had recourse to the law. Recognising in the driver one who was hardly likely to yield adequate damages, he sued the employer, who will have to pay as the result of the negligence as well as the impertinence of his servant.

"Keep an eye on One's Car."

THE point is an important one to our readers, and motorists should have their drivers most emphatically to understand that their cars are not to be taken out without permission and are not to be used for the gratification of the humours of private friends. Such folks rarely recognise the responsibilities of the position, and are generally careless with regard to the care of the property of other people. Cars are not inexpensive

toys, they represent hundreds of pounds, and those in charge should only be men who have some regard for the ordinary decencies associated with employment.

The Clipstone Trials.

WITH reference to the recent trials at Clipstone we have received a letter from Mr. E. Lisle as follows: "The Eliminating trials were instituted for the purpose of selecting the most suitable car for the Gordon Bennett race, which will be a road race of 360 miles, and in accordance with the rules laid down by the A.C.G.B.I. we built a car for that purpose, being under the reasonable impression that such a car would be the only acceptable one to compete in the Eliminating Race. The 'Star' car taken to Welbeck was geared exactly for the one mile race as it would have been for the full race of 360 miles. It had twenty-eight teeth sprockets fitted, whereas, if we had known it were possible to have fitted cars for sprinting, after the car had been passed by the Club officers on the 10th of April last, we should certainly have fitted twenty-four teeth sprockets, which would have given us a far better chance in getting up speed in so short a start, and we should doubtless have shown a very different and much better performance. We would draw attention to a point upon which various comments have been made in the press, viz., that the most reliable cars are required for the Gordon Bennett contest, and we would ask the spectators—Which was the most reliable and consistent running car at Welbeck? Whereas our car never once had its bonnet lifted or the engine adjusted in any way from start to finish, those of our competitors had repairs and alterations at the end of practically every run up and down the track."

A Challenge.

"To prove conclusively whether the best car will have been selected or not, we have made the following challenge to our competitors, Messrs. S. F. Edge, Ltd., to race over a distance of 50 miles or more, on the Continent, the best of the Napier cars which ran at Welbeck. The loser of the race to pay £100 to the Gordon Bennett Road fund. Should the Napier win the above contest it will not only satisfy us that the third car in the contest should be a Napier, but it would also strengthen the hands of the Club Committee in their selection, and also confirm the fact to the public which is the best and most suitable English-made car."

MR. G. MARCONI is among the new candidates for election to the Automobile Club.

THE postal vote of members of the A.C.G.B.I. with regard to legislation is about to be taken.

ON Sunday next the Rhenish Automobile Club will hold a race from Mannheim to Baden-Baden.

WE learn that Sir David Salomons has just purchased a 24-h.p. Georges Richard car from Messrs. Mann and Overton's, Limited.

MR. BALFOUR's motor-car driver has been fined £3 for exceeding the speed limit at Hook. This makes the third conviction since September.

MR. A. WINTON is reported to have covered a mile in 1 min. 2 sec. from a standing start on Wednesday. The trial was made on a circular track with one of the Gordon Bennett cars.

THE West Sussex Motor Company, Limited, has been registered with a capital of £5,000 in £1 shares, to carry on the business of manufacturers and repairers of and dealers in motors, and, in particular, to establish a service of motor-cars between Bognor and Chichester. The first directors are Messrs. M. F. Mievile, H. Lovett, and T. S. Adcock, and a central station will be established in Chichester, with a depot at Bognor, where competent repairers will be provided. The motor-car service will be started with five vehicles, and the Goodwood race traffic is expected to bulk largely in the profits.

THE "SPYKER" PETROL CAR.

ONE of the new petrol cars which the recent Automobile Exhibition at the Agricultural Hall brought to light was the "Spyker," made by the Trompenburg Manufacturing Company, of Trompenburg, Holland, the whole output of which concern for the next three years has been secured by the Bradford Motor Car Company. The cars are made in two sizes, 12-h.p. double-cylinder and 20 to 24-h.p. four-cylinder. In the following description we shall deal with the larger vehicle, but as the general arrangement in both is the same, it can be taken as applying to the 12-h.p. car equally well. To begin with the frame, this is rectangular and made on the "bois arme" system. It is mounted on the axles by steel forged scrolls and shackles, on four half-elliptic springs. The 20-h.p. motor (Fig. 1) which is located under a square bonnet, comprises four vertical cylinders, each 100 mm. diameter by 130 mm. stroke, and works up to 27-b.h.p. The valves are all mechanically-actuated, the inlet valves being on one side of the engine and the exhaust on the other. The ordinary system of high-tension electric ignition

inspection of these accessories and reducing the length of electric wiring to a minimum. The water circulating pump is gear driven; it is placed in front of the crank case of the motor. The radiator, which fills the front panel of the bonnet, consists of twelve serpentine-shape copper-tubes fitted with heat-conducting ribs. A fan is placed behind the radiator to induce a

continuous draught through the cooling plates and tubes. The watercooling is claimed to be so perfect as to enable a twelve hours' continuous run to be made without any additional water being required. One carburettor, which is of the float-feed spray type, supplies the four cylinders; it is self-adjusting, maintaining a perfect mixture at all positions of the throttle. The automatic governor, which acts on a throttle valve on the outlet from the carburettor, is controlled by a foot accelerator, making it possible to run the motor at any desired number of revolutions from 200 to 1,500 per minute, so that the consumption of gas can be kept strictly proportional to the power required, and consequently securing smooth running of the engine. Before leaving the motor we may refer to the fact that the crank

shaft has five bearings, and that four large hand-hole covers

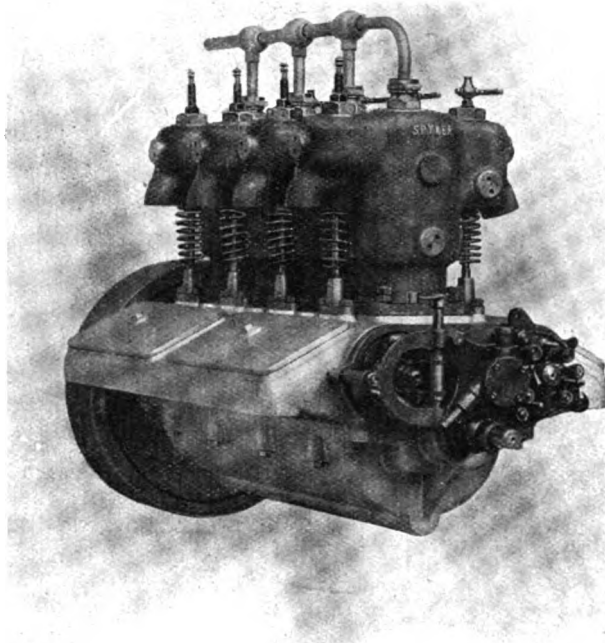


Fig. 1.—The Spyker Four-Cylinder Motor.

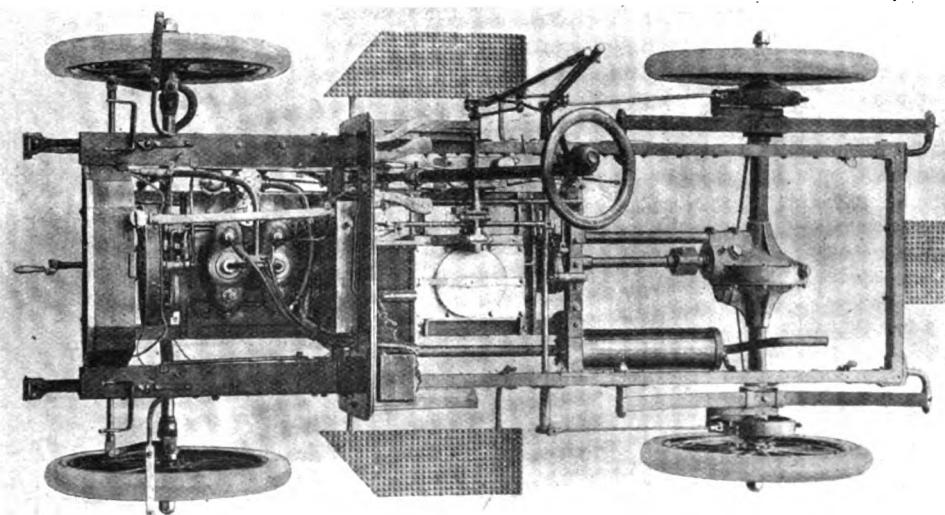


Fig. 2.—Chassis of Spyker Two-Cylinder Car.

is adopted, the sparking plugs being placed in the crown of the combustion chambers, removed as far as possible from contact with oil in case of over-lubrication. The induction coil and accumulators are located on the dashboard, facilitating the

are provided to the crank case to enable the big ends of the connecting rods to be inspected.

Passing now to the transmission, this is through a clutch gear box, cardan shaft, and bevel gear to a live axle. A cone

clutch is employed, the clutch-striking spindle being hexagonal in form, so that it can be detached and lifted from its place merely by undoing two nuts. Three speeds forward and a reverse motion are provided, the drive on the top speed being direct, without intermediate gear being in motion, thus obviating undue wear in gears and bearings. The gear box is of aluminium, and, except for its cover, is one casting, thus preventing the leakage of oil at the bottom; the bearing brasses are inserted from the ends, and secured to the walls of the gear box by set screws. When the latter are withdrawn, the brasses can be taken out, and the gearshafts lifted from the gear box through the inspection lid. There is no necessity to disturb the gear box in any way. In the walls of the gear box over the gearshaft bearings oil wells are formed, from which the lubricant feeds regularly on to the bearings. A noteworthy feature of the change-speed gear is the means provided to prevent the gear being changed without the clutch being first withdrawn. This is obtained by a simple form of locking arrangement, the depression of the clutch pedal simultaneously lifting a locking bar from the gear sector, and allowing the change-speed lever to be moved from one notch to another. The change-gear wheels are made of a special silico-manganese steel, hardened through, and, in conjunction with the locking arrangement above referred to,



M. Thery on his Deauville Racer, fitted with Continental Tyres.

should have a very long life. The rear live axle is made of nickel steel and is well stayed; while the bevel pinion on the end of the cardan shaft rotating the bevel wheel on the axle, is furnished with both front and rear bearings.

Both the hand and foot brakes are so arranged that, on their application, the clutch is taken out. A pedal controls a metal-to-metal band-brake on the forward end of the cardan shaft. As to the brakes on the rear live axle, the encircling blocks are forced together and into contact with the drums by right and left-handed screws, rotated by the longitudinal movement of a side lever. The car has a wheel base of 6 ft. 8 in., and runs on 870 by 90 mm. equal-sized artillery wheels; with tonneau body, it weighs about 18 cwt. From the foregoing it will be seen that the "Spyker" car is on thoroughly up-to-date lines, and, judging from the large number of motorists to whom vehicles have already been sold, it is likely to become a familiar type during the coming season.

THE Steam Generators, Limited, has been registered with a capital of £12,000, to adopt an agreement with Mr. A. Lafargue and others to construct, purchase, and work omnibuses and vehicles, whether worked by steam, oil, spirit, liquid, or compressed air, electricity, or other mechanical power. The registered office of the company is at 34, Clements Lane, E.C.

THE DRIVING OF MOTOR-CARS.

ONE is often astonished at the way in which the modern motor-car is driven through thick traffic in town, and it is not a little surprising to think that serious collisions and side-slips are not frequent. For, on the one hand, the difficulty of controlling a restive "nag," and on the other the skill and judgment, which is often mistaken for foolhardiness, displayed by the car-driver must be confusing to the lay mind. The pity is that prejudice in many forms still continues to pit itself against progress in the automobile movement. Yet, as a spring of water feeds the mighty river, so surely is the motor-vehicle gradually gaining ground. But, "haste we to our tale."

There is a class of car-drivers, and that class is, we fear, in the majority, whose sole aim appears to be to dash through the most central and congested districts in town, and then often crawl along the country highways—where speed would be far more permissible—like unto a South-Eastern and Chatham Railway engine whose driver is picking flowers along the line as he slowly proceeds. Why this unseemly haste when so unnecessary and objectionable—why wilful wear and tear of expensive mechanism? Truly, one should not be surprised when accounts are sometimes published of excessive cost in the upkeep of a motor-car.

We see a car flash by us at a speed "well over the legal limit," as the phrase now goes, upon a hard wood road which is full of deep ruts and miniature excavations. The practical man sees it, and wonders why. Does the locomotive-driver dash full speed out of the terminus across intricate points and cross-overs? No, he waits until he has a clear road, and then he "gives her head."

Of course, we know that many cars do stand the strain owing to the excellent materials of which they are constructed, but it does not require the eye of the "expert" (horrid appellation!) to discern splayed-out axles and wheels which deviate from the path of truth.

To return to the engine-driver—he does not often wilfully put on full steam one minute, the next "race" his engine, and then, as suddenly, operate the brakes dead hard. He does not do this, simply because his employers would not tolerate it, but also because he takes a pride in the machine he controls. Yet the mechanic with his master's costly "sixteen" or "twenty-four" is permitted to do all these things with impunity, which points a moral, perhaps—that the owner himself is not aware of the damage that may occur. It may be urged that the horse-drawn vehicle is more like the motor-car, because it is driven on the highway. Not so; the latter should be looked at, undoubtedly, in the light of a road locomotive, and not a carriage with the horse removed. So, going further into the question, or possibly, more correctly, removing the "bonnet," the car owner does not desire to be presented with a long bill, for example, for a new crankshaft, which is owing either to his own or his driver's carelessness or ignorance. We fear that many must suffer from the last-mentioned affliction, which, however, is easily cured. There can be no doubt that half-an-hour's conversation with any engine-driver upon the subject would teach such motorists the advisability of considering, and thereafter using, the working parts of the "car they love" with much more care than they formerly bestowed upon it. Then explanation would ensue as to why he does not run his engine like a combined racehorse and broken-winded mare every five minutes. It is not within the province of this article to give instructions in the management of motor-cars, but the careful perusal of the hints published in the *Journal* will solve many difficulties of the novice. Were the budding motorist to take his pattern from the steady engine-driver before-mentioned, more pleasure, diminished fines, and, above all, less wear and tear would be the happy result. Think well of the car that carries you over.

THE IRISH FORTNIGHT.

WE are this week able to reproduce portraits of the three motorists—Messrs. Alexander Winton, Percy Owen, and Louis P. Mooers—who will represent America in the forthcoming Cup race. Mr. Winton, needless to say, is the founder of the well



Mr. Alexander Winton.

known American firm of motor-car builders which bears his name. As a manufacturer he has been called the American Panhard, but, wide as his reputation as a manufacturer may be, it is as an automobilist that Mr. Winton may justly claim pre-eminence. Although he has proved himself one of the fastest drivers in the United States, as witness his performances last year on the "Bullet" and "Pup," yet it would be difficult to find a man more unlike the dare-devil type of *chauffeur* than the quiet, reserved Scotch-American. In appearance he suggests the cool, but clear-headed driver of an express locomotive who has grown hardened and grey in the service.

PASSING now to Mr. Percy Owen, who will also drive a Winton car in the Cup race, we have here another expert *chauffeur* well known in American motoring circles. He is 28 years of age, and manages the New York branch of the Winton Co. Among other feats he established a world's track record for cars weighing between 1,000 and 2,000 lb. for all distances up to 10 miles in 1901; and for part of the season of 1902 held the American records with the Winton "Pup" until they were beaten by Mr. H. Harkness, another of America's expert motorists.



Mr. Percy Owen.

THE third American competitor is Mr. Louis P. Mooers, who will drive a Peerless. He is 30 years of age, and built his first automobile at Watertown in 1898. Early in 1901 he became the engineer of the Peerless Motor-Car Co., which took a licence from the De Dion Co., and built a 5-h.p. voiturette. His next automobile was an 8-h.p. tonneau, followed in 1902 by a 16-h.p. two-cylinder car. Late last year Mr. Mooers built a 40-h.p. four-cylinder vehicle and has now completed a racer of 80-h.p. for the Cup contest.

THE Winton cars for the Gordon Bennett race are reported to be in general appearance exact reproductions of the famous "Pup." The road wheels are 32 inches in diameter with 4-inch tyres. The front axle is dropped, with the springs mounted on top, while the rear springs are hung below the axle. The frame is of wood with $\frac{1}{2}$ -inch sheet steel sheathing. The engine is a four-cylinder one hung horizontally across the front platform with the heads on the left side. As to the horse-power no information is at present available. The cars have two speeds and

reverse, with a shaft connecting through bevel gear on to the rear axle. On the high speed the drive is direct. The wheel base is 8ft. 4ins. and the weight complete is 1,800 lbs.

THE transatlantic steamer which has been chartered in connection with the Gordon Bennett Cup is, writes our Continental correspondent, the *Ferdinand de Lesseps*, belonging to the Compagnie Transatlantique. It is of 3,600 tons burden and upwards of 360 feet in length. There is room for 60 first-class passengers, out of which 20 places have already been engaged by the French competitors for the race. There is accommodation for 44 second-class, and 50 third-class passengers. The *Ferdinand de Lesseps* will leave Havre on the 27th of June, and will take about 30 hours to go across to Dublin, where it should arrive on the afternoon of the 28th of June. It will remain in Dublin Harbour until the 4th of July, and it will leave for Havre, where it is timed to arrive on the afternoon of the 5th. It will therefore be a ten days' trip. The fare has not been definitely fixed, but it will probably be about 500 frs. for the first-class passage, and 300 frs. for the second, including full board the whole of the ten days. It will cost about 300 frs. to take a car over and bring it back to France.

GETTING to the different points of vantage on the course will be difficult enough for spectators under the most favourable circumstances; but the crush and excitement on the return journey must be fraught with increased dangers if crowds of gigantic proportions become concentrated within any particular area by reason of its favourable position or easiness of access. Apart from the Great Southern and Western system, whose line will facilitate railway travellers (presumably to Athy, Carlow, Maryborough, Harristown, for Kilcullen, Naas, Newbridge, Kildare, Monasterevan, &c.), Mr. W. G. Edmonds adds the suggestion that the Midland Railway of Ireland run excursion trains to Edenderry, in conjunction with a good car service to points nearest from that village; and also that the Dublin and Blessington steam trams run excursions to Poulaphuca, with a similar car service therefrom. These companies could largely requisition the services of Dublin jarvies to assist where the local supply of vehicles might be inadequate.

APPARENTLY there are many firms along the line of the official route in connection with the tour following the race who do not quite ap-



Mr. Louis P. Mooers.

preciate what a great quantity of petrol will really be required, and we would write this note of warning. Arrangements for additional supplies should be put in hand without delay. From

Cork we learn that "the demand for petrol is not very great, but it appears to be increasing, and we always hold a sufficient stock to enable us to supply without delay any orders we receive. We expect there will be greater demand for it during this season owing to the Gordon Bennett race taking place in Ireland"—a delightfully naive way of expressing what others regard as a demand that is likely to amount to a rush. We hope shortly to publish a list of Cork firms stocking petrol, and shall be glad to hear from any such.

THE district around Tipperary will afford good motoring for the roads are generally satisfactory. Like many another Irish town the place is ancient, its history dating from the days



The Eliminating Trial at Clipston.—Mr. Mark Mayhew on the Track.
Photo by] [Campbell and Gray.

of King John. The main street is more than a mile long, and in Nelson Street is a motor garage, where Mr. C. W. Walshe assists motorists and supplies petrol and motor spirit, etc.

IN view of the dust that will most probably be very troublesome in connection with the contest, we would suggest that this might be overcome by having the course watered with sea water before the event. Talking recently on the subject with a leading physician (Dr. Boyton) in one of the eastern suburbs, he drew our attention to the remarkable absence of dust at Clacton-on-Sea—a fact attributed to the use of salt water. Subsequent inquiries have confirmed this view. Hastings was the first town to use sea-water for municipal purposes, but it was abandoned in consequence of the deleterious effect of the salt water upon the macadamised surface of the roads, the water mains, hydrants, etc. At the same time the local authorities recognised its efficacy in laying the dust. Mr. J. W. Cockrill, the Borough Surveyor of Yarmouth, who has had thirty years' experience of the use of salt and sea water, informs us that one load of the latter is equal to three loads of fresh water for dust laying. It keeps light gravel-made roads in splendid condition at about one-half the cost as compared with the use of fresh water. Moreover this authority is a cyclist and has never experienced any evil effects on pneumatic tyres. On the other hand, Mr. H. W. Smith, of Scarborough, whose experience of the subject when at Bournemouth is of value, while testifying to its efficacy for keeping down the dust, points to a corresponding drawback in its effect on rubber tyres.

So far as the Gordon Bennett race is concerned we would point out that the use of sea water for this one occasion would not prove any disadvantage to the roads or the local users. The competitors would not be troubled by the effect on their tyres so long as the dust was effectively laid, and altogether the idea is one that merits discussion and consideration. Perhaps some of our readers in seaside towns will be able to throw further light on the subject.

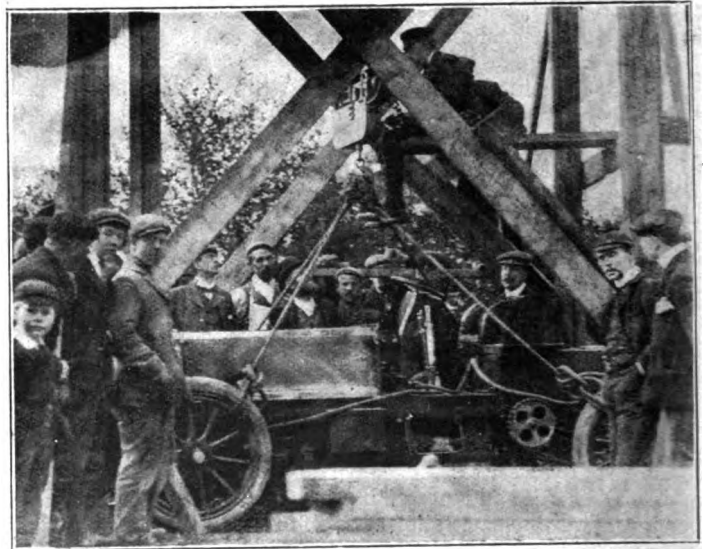
THE other evening the Duke and Duchess of Manchester, while motoring through Swinford, met with a mishap. After

leaving the town they went at a brisk pace on the Westport road for about 400 yards, when suddenly the car ran to one side of the road, and immediately after the front portion of the vehicle collapsed. A crowd of small boys soon appeared, and, at the request of the Duke, pushed the car back to Swinford Railway Station. His Grace wired for a special train to Westport, as the motoring party intended to dine with the Marquis of Sligo, but no train could be obtained, and at 10 o'clock the party had to travel by road to Balla Station, a distance of ten miles, to meet the train to Westport. The car was left at Swinford Railway Station, but before leaving for Westport the Duke engaged the services of a local blacksmith to see if he could do anything for it.

At the opening of the proceedings of the Athy Petty Sessions, the presiding Chairman, Sir A. A. Waldon, Bart., said a special meeting of the magistrates of the district had been convened to consider the advisability or not of issuing or granting occasional licences on the day of the motor-car race in July. They had unanimously resolved:—That it is our unanimous opinion that it would be most dangerous and most undesirable that any occasional licences should be granted to any parties in this Petty Sessions district for the day of the motor race." The Chairman said that the magistrates were of opinion that the granting of occasional licences would probably result in some very serious accidents happening to parties on the day of the contest.

DURING the first week the Go'fers' Hotel, Sutton, co. Dublin, will be the headquarters of the Midland Automobile Club, some of the members of which will travel *via* Bristol. Mr. Lancaster is going to Ireland with the view of making arrangements for the Club to have a special enclosure from which to view the race, and altogether it is evident that Midland automobilists will be well looked after. Sutton is a pleasant fishing village on the way to Howth from Dublin.

CONSIDERABLE discussion is taking place in Ireland with regard to the hour at which the race will start, the view of many being that a later beginning would enable thousands more people to see the event. It is no small privilege, says one leading Irish



Weighing the Trial Cars at Clipstone. Argent Archer.

journal, to have given over three hundred and fifty miles of public road for an entire day to a single club for a single race. No word of objection has been heard in the Emerald Isle, and its voices in the press are now urging some consideration of the convenience of the people in delaying the start to about ten o'clock. But what of the competitors? Surely they have some claim to consideration, and a later start would mean that they would be travelling in the hottest period of the day.

MOTOR MAY DAY.



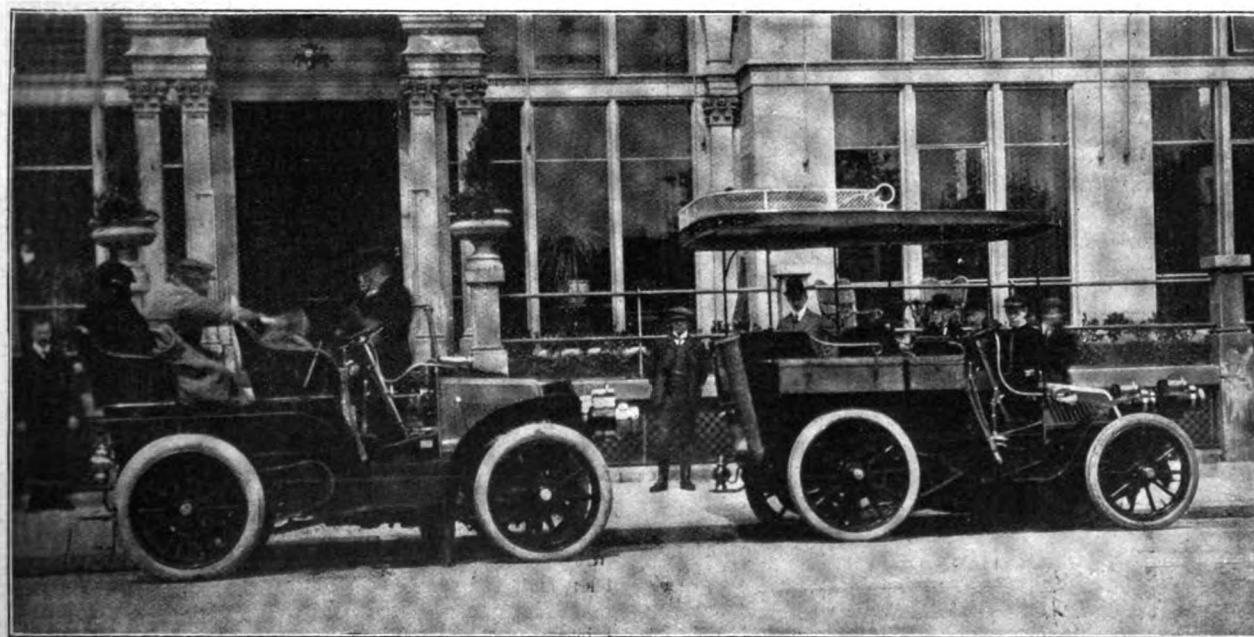
FROLICSOME were the gambols associated with the May Days of the past, but those of the present are mundane and miserable. Much of the gaiety of life has been dispelled by newer conditions, and London especially presents a sombre aspect on the opening day of springtide. Looking from a suburban window last Friday morning the outlook was depressing and the climatic conditions dampening. With piteous persistency the rain descended—to lay the dust for the men who walked from London to Brighton. What folly, when so many motor-cars were available! But it was not the pedestrians' venture that caused everybody to be astir so early on that particular day.

Others ventured forth because it was Motor May Morning—the first of what should be a long succession of growing parades of heavy vehicles actually serving the public interest. The idea had come suddenly into the heads of the promoters, but that did not prevent thirty huge vehicles taking part in the demonstration along the Thames Embankment. As they left West-

represented included the Lancashire Steam Wagon Company—and Mr. Spurrier seemed well pleased with the municipal inquiries that concern is obtaining—Messrs. Coulthard and Co., and the Thornycroft and Straker companies.

For the encouragement of drivers to keep their vehicles in good order three prizes were offered, the awards being based upon the cleanliness of boiler and mountings, as well as the gearing, the state of lubrication of gear, and the general appearance of the wagon. The Hon. J. Scott Montagu, M.P., and Mr. W. J. Bull, M.P., were the judges, their decision being in favour of the drivers of vehicles belonging to the following firms:—1, Messrs. Whiteley; 2, Messrs. Searcy, Tansley and Co.; 3, Messrs. Dewar.

Subsequently we adjourned to the Savoy Hotel for breakfast, and from the windows of the Pinafore Room looked out upon a grey morning, with a mist hanging about the river with all the insistence of a winter fog. The long procession of huge automobiles was re-started, and away went the vehicles on their daily rounds, just as a counter-procession of horse-drawn vans, all caparisoned with bedraggled bunting, passed by, the occupants of the various carts being as dejected as Father Thames. The only excitement was afforded by the passing of a motor 'bus, with the



Society Motorists at the Empire Hotel, Bath. (See page 200).

minster Boadicea's chariot seemed very antique. Here was a long string of modern motor-vans all employed in the arts of peace, although the grey hues of three wagons destined for the Congo reminded the spectators that only lately had the war drum been throbbing to the pulsations of a victorious army in another part of the great African continent. But the other vehicles looked amicable enough. The names of Dewar, Watney, and Fuller on the great lorries would prove delightful a few weeks hence could their presence be tolerated about Ballyshannon, Kildare, and Timolin, where the magistrates have just refused to give extra facilities for obviating thirst on the part of weary and travelled motorists during the Gordon Bennett contest. One lorry belonged to a firm that uses it in transporting ballrooms from place to place, another to a great "universal provider," others to borough councils, photographic dealers, wall-paper manufacturers, and equally diverse forms of industrial undertaking. A motor-wagon belonging to the Middlesex Hospital laundry was a notable feature—but the rain prevented anything like an adequate interest in the fine show of heavy vehicles, not so varied and representative as the show at the Agricultural Hall Exhibition, but in many ways the best display of heavy motor-vehicles yet seen in London. The makers

legend "General Omnibus Company," it having made its initial trip on May morning. Undoubtedly steam lorries require considerable water in the course of their peregrinations, but for the supply arrangements should be made with the local authorities, and not with the Clerk of the Weather. The weather was too profuse in its dealings for anything like comfort, a point which should be considered on the occasion of future displays—for these parades are to be annual parades. If Motor May Day is to become an institution, may not the automobile parade supplant the August Cart Horse Parade in Regent's Park? None dare controvert the implied suggestion.

THE Swiss Automobile Club will hold a series of kilometre trials on a level road in the Canton of Geneva, on the 18th inst. The competition is open for both cars and motor-cycles, and entries must be sent in by the 17th inst. at the latest.

MESSRS. BENZ AND Co. have just supplied two cars—of 7-h.p. and 17-h.p. respectively—to the German military authorities at Munich. Before being accepted the vehicles were subjected to a 500 kilometre trial over all kinds of roads.

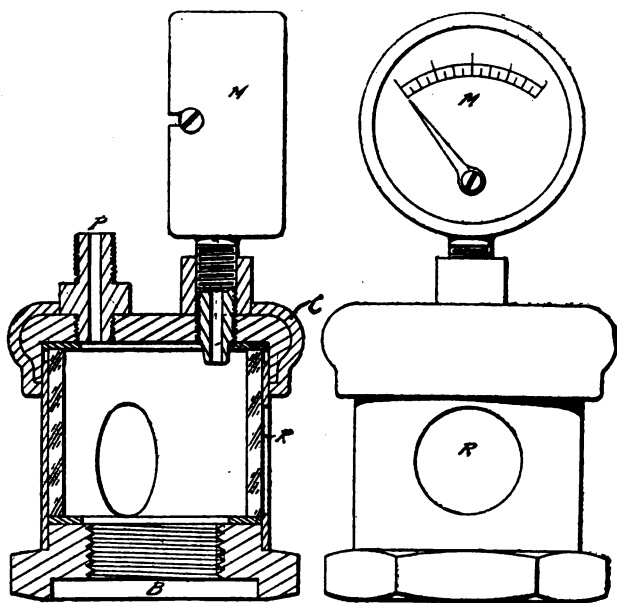
SOME USEFUL NOTES.

IN attempting to take off a cylinder head never drive any kind of tool between the cylinder and head.

EVEN with excessive lubrication, valves never become foul unless they fit their seating imperfectly. Hence a foul valve is a sure indication that it requires grinding.

ALMOST any cable will safely carry the low tension current, but no cable can be too well insulated or of too good a quality to carry the high tension current to the sparking plug.

A USEFUL little pressure gauge for testing the compression of petrol engine cylinders, sparking plugs and tyres has been brought under our notice by Messrs. J. Lacoste and Co. Its construction is clearly indicated in the illustrations, which show a sectional as well as a general view. To verify the compression the apparatus should be screwed in place of the sparking plug, and after having placed the cap on P the engine should be turned by the starting handle until the highest point of compression is obtained; the needle of the pressure gauge will then register the amount of compression and also point out any leak by the index finger gradually falling to zero. To test the sparking of the plug



under pressure, the plug should be screwed in B, an ordinary bicycle pump should then be connected at P, and the press raised by pumping to approximately the same compression as that of the cylinder; the spark can then be watched through the window R. If the index finger of the gauge falls, the joints of the plug are leaky. A rubber collar C is provided to the apparatus by which it is intended to be held to prevent the user experiencing any electrical shocks.

It should be remembered that exhaust gases contain ingredients of a highly poisonous nature. Therefore when the engine is run whilst in the stable, always have a door or window wide open so as to ensure free ventilation.

IN connection with the current scare anent the quality of petrol it may be as well to mention that the presence of water in petrol is, to a certain extent, inevitable, and it becomes an ingredient of petrol partly after it has left the refiners' hands. Thus the constant vaporization which goes on in the petrol tank of a car (especially when the car is in motion) produces a lowering of temperature sufficient to cause condensation of aqueous vapour, this condensed vapour collecting on the sides of the tank and forming droplets which ultimately collect at the bottom of the tank and may find their way to the carburettor.

A SPARE length of rubber-tubing (preferably several lengths of various sizes) may be very useful if the insulation of a wire should become damaged, or in case of a leak in a petrol or water-pipe.

NEVER run up to or near your stopping place at full speed and then put the brakes on hard, just to see how quickly you can stop. A motor-car should always be stopped as gently as possible, and started in the same way.

IT is well-nigh impossible to cover in any effective manner the subject of road repairs, for the reason that it is generally the unexpected that happens. Only a small part of the ills that a motor-car may become heir to can be predicted or treated of in a short article, and when anything goes wrong it is frequently found that it is just the particular thing that the motorist is not prepared to meet. There are always certain nuts upon every car which seem to have a special fondness for working off their threads. Even if they are provided with lock nuts, both nuts will sometime work off if the thread does not fit properly or if it is too coarse. When a cotter-pin is provided through the screw alone, beyond the nut, it effectually prevents the nut from being lost, but does not keep it from becoming loose. Cotter-pins, to prove really valuable, should pass through a hole drilled through both the nut and the screw.

AFTER a lost nut is replaced, it can be prevented from working loose by winding wire into the thread of the screw close to the nut and twisting its ends tightly together with the pliers, or the protruding part of the thread may be battered with a hammer, though this is hardly workmanlike. If no nut is at hand to take the place of the missing one, sometimes a crude process of riveting can be resorted to, which may hold things together for a while. The end of the screw or bolt can be cut off short with the cold chisel, and with the aid of a hammer or the head of a wrench and a convenient stone, the end of the screw may be upset and headed over so that it will hold. If the bolt happens to have been lost with the nut, it is sometimes possible to make a temporary "hitch" by passing heavy wire through the bolt hole several times and twisting its ends together with the pliers. Wire is one of the most useful things that can be carried.

UNFORTUNATELY, there are many cars in service in which complete precautions regarding the tightness of nuts have not been taken, and occasionally, despite inspection in the stable, a nut will be lost and something will suddenly break loose. It is then that the spare nuts in the tool-box become valuable. The manufacturer who can put his machine together and use only a few standard sizes and threads in so doing deserves credit, as a very small stock of nuts will then meet all emergencies, and, if they are of standard description, they may be purchased at almost any ironmonger's.

THE connections of ignition wires to terminals should be wrapped round with rubber tape, and a little solution, such as used for mending tyres, can be added with advantage. This wrapping up of cable ends and connections, as well as keeping the moisture and wet from entering along and down the insulation, also keeps the nuts securing the cable ends from working loose and getting lost, as they cannot turn round when wrapped up.

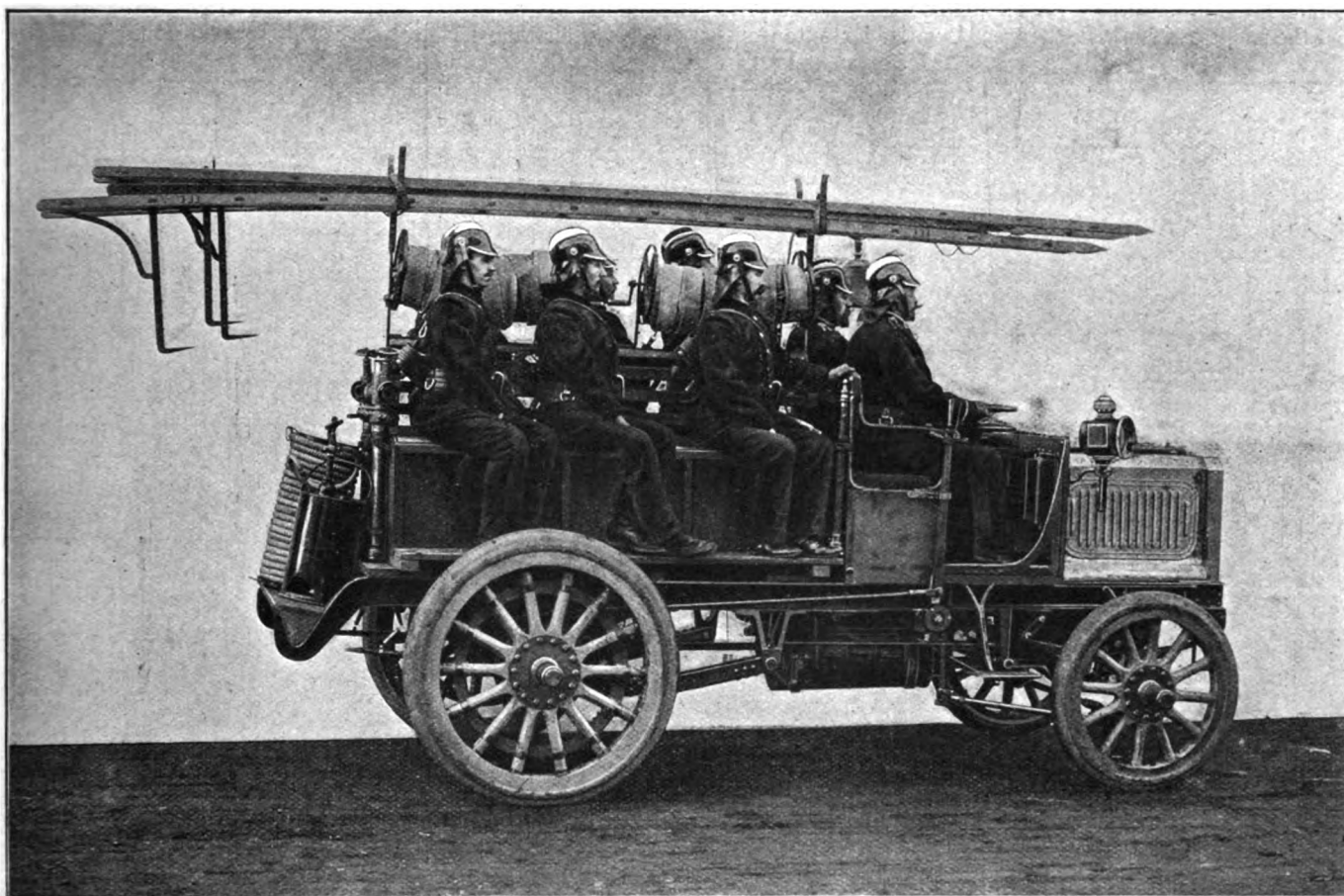
If you ever take your engine to pieces be very careful to get everything back in the correct place. One must be very well acquainted with a petrol motor to get the various parts back into the correct position. The work should not be attempted unless it is known that all the parts are marked, for if the pinions of the valve gear are only one tooth out the motor will not run, or, if it does, it will give practically no power.

THE Wilkinson Motor and Engineering Works have been opened at 31, Priory Park Road, Kilburn, N.W. The teaching of driving, as well as the execution of repairs is undertaken by the company.

CONTINENTAL NOTES.

By "AUTOMAN."

THE accompanying illustration shows a motor-fire service wagon lately completed at the Eisenach Fahrzeug Fabrik, Eisenach, Germany. The frame is of stamped steel, in the fore part of which is a vertical two-cylinder engine having mechanically operated inlet valves. It develops 14-h.p. at a speed of 680 revolutions per minute. The latest type of combined honeycomb radiator and water tank, with fan, is fitted. Three speeds forward and a reverse are provided, the transmission to the rear axle being by a cardan shaft and bevel gear. The change speed gear is controlled by a hand-wheel, while the road wheels are shod with solid rubber tyres. The vehicle is adapted to carry eight firemen, including the driver, in addition to ladders, hand-pumps, and a large quantity of hose.



The Eisenach Motor Fire Service Wagon.

THE special train from Paris to Madrid, which is to be run in connection with the race, will start from Paris on Saturday night, May 23rd, and will stop at Versailles, in order to allow the passengers to see some of the first cars off on Sunday morning. It will leave the "Gare des Matelots" at 4.30 a.m., and will arrive at Bordeaux at ten minutes past twelve, where it will stop opposite the place where the cars arrive. It is thus hoped that it will be in time to enable passengers to witness the arrival of the first car, which should not take place until nearly one o'clock, unless the average speed of last year is greatly exceeded, which is not very likely. On Tuesday morning, May 26th, at a quarter past midnight, the special train will leave Bordeaux from the Saint-Jean Station, and will cross the Spanish frontier and stop at Vittoria at eight o'clock in the morning, giving the passengers just eleven and a half hours in Vittoria, which will enable them to see the arrival of the greater part of the competitors after the crossing of the Pyrenees. At 7.30 in

the evening of Tuesday the train will leave Vittoria for Madrid, where it will arrive at eight o'clock in the morning. As the accommodation in the special train is very limited, Englishmen who wish to avail themselves of it should send in their applications as quickly as possible, together with a cheque addressed to M. Huet, 6, Place de la Concorde, Paris. For the information of those who have not already followed big international motor-car races in the special train, I would add that it is composed of sleeping and restaurant cars, and fully accommodates passengers in every way as far as Madrid; so it is needless for them to seek for hotel accommodation otherwise than at Madrid.

WITH regard to the introduction of tyres and spare parts, and all materials connected with automobiles, including petrol, alcohol, and oil, an arrangement has been come to with the Spanish authorities, whereby these will be entered free of duty

on the presentation of a certificate prepared by the A.C.F., where a guarantee must be given for the payment of duty on any of those goods not re-exported within forty days of the date of the race. The importation may be made from May 1st to 20th, and the certificate necessary for this purpose may be had from Mr. Hocmelle, Secretary of the Racing Committee of the A.C.F., Place de la Concorde, Paris.

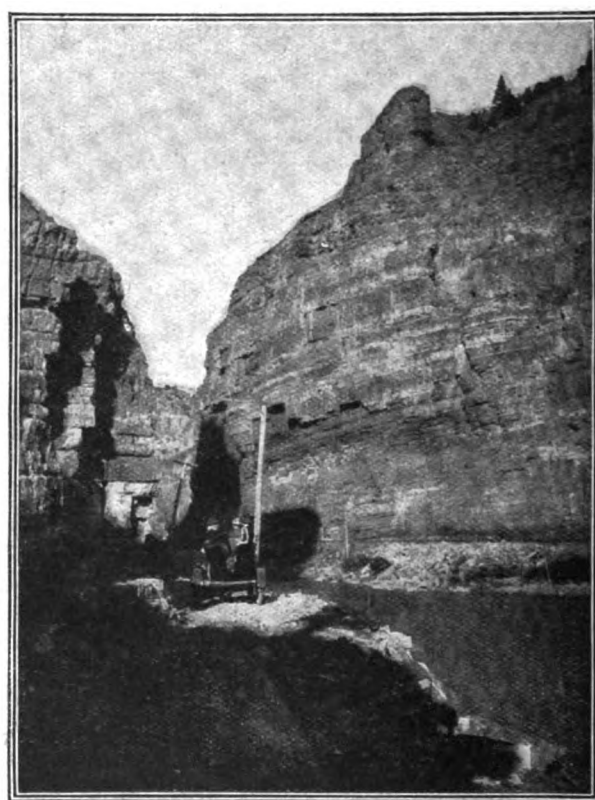
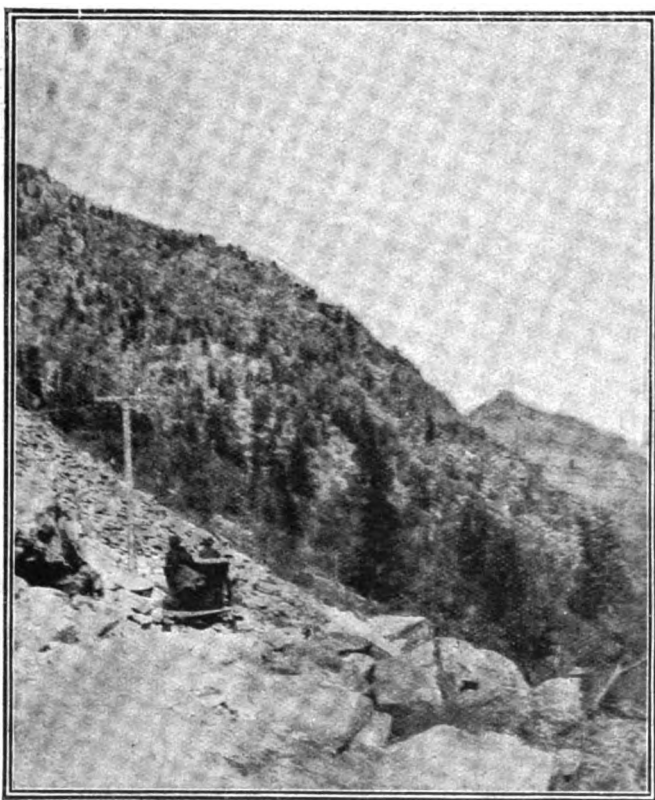
THE greatest mystery surrounds the different racing cars, and Mors still seems to be the only firm to have cars actually on the road. The new Mors cars are said to be as much faster as if last year's cars had a fifth speed added. This information is almost incredible. With regard to what Panhard and Levassor are doing, no one seems to know very clearly. The "Auto" has a story about them, which supposes that the engine is slanted downwards towards the front of the car, in order to give more room for the fly wheel, which seems more incredible than the

story about the Mors cars ; for it is difficult to see how they could possibly be efficiently lubricated in this manner. It is reported that the Gobron-Brilliés, which have four cylinders and eight pistons, have been reduced in weight, but are still 25 kilos over the limit, and they are working to reduce this. It is said that the motor gives 100-h.p., and only weighs 360 kilos, which would make it very light indeed.

At the Hotchkiss Works every moment of time is being utilised day and night to push forward the racing cars, and the first one is likely to be on the roads in a few days. The engine is exceedingly light and compact, and has four cylinders, each made from a block of forged steel, out of which both the inlet and exhaust openings are cut. The water jacket is of aluminium, and is placed over the four cylinders, which it unites in such a manner that there is no interior water joint. The motor weighs only 300 kilos, and gives 80-h.p. I was fortunate enough to see it running the other day on the testing bed, and was surprised to notice the facility with which the speed is varied instantaneously

just the same bearing surface between the two dishes. This arrangement has many advantages, and needs no attention or lubrication, and makes it very much easier for the springs, which in most of the live axle cars transmit the forward motion to the car. The Hotchkiss car has four speeds, and has a frame made out of stamped nickel steel. It is very low and long, and has quite a rakish look about it, which gives one the idea of high speed.

Most of the well-known *chauffeurs* are busy reconnoitring the road from Paris to Madrid, and M. Etienne Giraud has recounted his adventures in a journey made in a 15-h.p. C.G.V. from Paris to Madrid. M. Giraud is not very pessimistic about the Spanish roads, and seems to think that they are not as bad as they have been made out. He only had one puncture in Spain. He calls attention to the fact that in some parts of the country chains are drawn across the road at night. Fournier and Georges Prade have just started off to reconnoitre the road. Demester, who has just returned from a reconnoitring tour, tells



Snapshots of a Winton Car in the Rocky Mountains.

from 150 to 1,200 revolutions. The car will, it is said, come well under the limit of weight, and it will not be necessary to skimp it in any way. Amongst the novel features is the front axle, in which there is no pivot; it is particularly strong and has the advantage of allowing the wheels to turn on a point which falls exactly in the centre of the tyre, so that the tendency of the front wheels is to come back to the straight position, just as is the case in the wheels of a bicycle. Ball bearings are utilised in the wheels, in the change of speed gear, and also on the crank shaft, which is thus very much shortened. The transmission of the Hotchkiss car is by means of a live axle working through a cardan joint, which, however, contains no bolt or other fastening. The position of the back axle is fixed longitudinally by two powerful thrust rods, one on each side, and the only way in which it can move is in an arc which takes for its centre the centre of the cardan joint. This latter consists of a square dish, which fits inside another square dish in such a manner that, whatever be the position of the back axle, in the short arc which it can describe around the centre of the cardan, there is

how the steam rollers and rollers drawn by mules are busy preparing the Spanish roads, which are getting into very much better condition. He found no difficulty in the hill-climbing of the Guadarrama, with the exception of two or three dangerous turns ; but, on the whole, he reports the roads to be feasible.

THERE is trouble in Germany over the Gordon Bennett race. The truth of the matter is that Germany is a country very far behind in automobilism, and the fact that the Daimler Motoren-Gesellschaft in Cannstatt makes a very fine, perhaps the finest car in the world, has not even had the influence in Germany of propagating the sport ; for nearly the whole production of the Cannstatt firm is exported from Germany in to France, England, or America. Of course, the roads in Germany are not very good, and the further north one goes the worse they get. No doubt this has a deterrent effect on automobilism ; and perhaps, too, in Germany sport is not so sought after as in the countries above alluded to. The Cannstatt-Daimler Company blames, however, to a great extent the German Automobile Club, which, founded

by Society people in Berlin, has remained a social club, and excluded rigidly from the advantages of membership all those who could not lay complete claim to the title of amateur. This, it is said, has had a disastrous result on the trade in Germany, for there has been no central body occupying itself with the organisation of competitions and the popularisation of automobilism. This unfortunate situation has come to a head *a propos* of the Gordon Bennett race, for the Cannstatt-Daimler Company could not find amongst the members of the Deutsche Automobil Club drivers suiting their requirements for the race in Ireland. The drivers whom they have chosen refuse to become members of the D.A.C. under the existing regulations, which refuse them almost all the privileges entertained by members, and under these circumstances the Cannstatt-Daimler Company threaten to withdraw their cars from the Gordon Bennett race and not compete. An effort, however, is being made by some of the members of the D.A.C. to avert such a catastrophe, by asking the members of the club at their general meeting to alter the rules, so that they may conform with those of the affiliated clubs in other countries, and I think it is pretty certain, therefore, that the famous Mercedes cars will be seen in Dublin at the beginning of July.

THE announcement that during his visit to Paris King Edward VII. has honoured a French firm with an order for a motor-car has given much satisfaction in France. His Majesty examined the vehicle on Sunday at the British Embassy, in the courtyard of which it performed several evolutions under his observation. It is a Darracq four-cylinder car of 24-h.p. with a limousine body. His Majesty made a close examination of the car, and inquired as to its top speed, which was stated to be forty-two miles per hour.

ON Sunday last the Austrian Automobile Club held its annual hill-climbing competition up the Exelberg from Neuwaldegg. In the heavy car class Count Wimpffen was first, on a 10-h.p. Serpollet steam car, his time being 5 m. 52 sec.; Hieronymus, on a Mercedes, won in the 650-1,000 kilog. class (time 5 m. 32½ sec.); Schwertlenka, on a De Dion, was first in the voiturette class (9 m. 30¼ sec.), while Toman headed the motor-bicycle section, his time being 5 m. 53 sec. The record for the climb stands at 5 m. 28 sec., and was not beaten on Sunday.

THE Circuit National Belge, organised by the Automobile Club of Belgium, starts to-day (Saturday). Eight classes have been arranged, according to the price of the cars. The first day's programme comprises a run from Brussels to Antwerp, and a visit to an ocean liner. On Sunday, the journey will be made from Antwerp to Liege via Hasselt. On Monday the run will be from Liege to Arlon, via Houffalize, the next day's trip being to Namur, via Rochefort. On the 13th inst. there will be hill climbing and kilometre contests. On the 14th inst. the competitors will return to Brussels. Altogether the run extends to 571 kilometres.

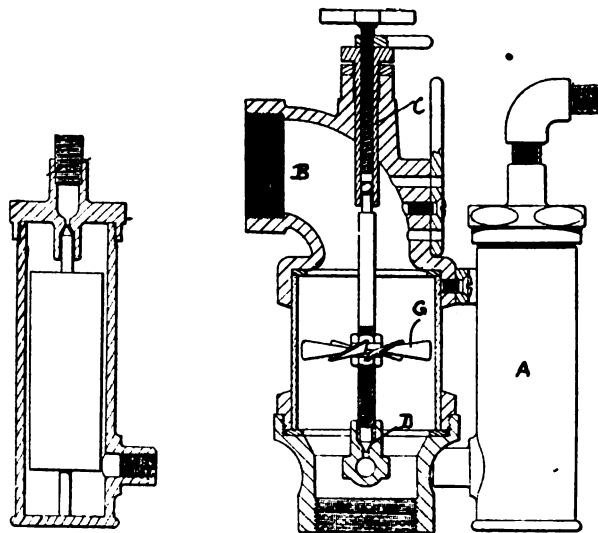
FOR the Paris-Madrid race, Messrs. Renault are preparing three 30-h.p. cars, to be driven respectively by Messrs. Louis and Marcel Renault and M. Grus. The engines have four cylinders and ordinary suction inlet valves. The wheel base is 7ft. 10in. and the track 4ft. Three cars of the Paris-Vienna type and four 10-h.p. light cars have also been entered by the Renault firm. De Dietrich's have built half-a-dozen powerful cars for the race. They are nominally rated at 45-h.p., but it is rumoured that this estimate is well within the mark; their drivers will be Messrs. Jarrott, Lorraine-Barrow, Stead, Gras, De Brou and Haentjens. Three 24-h.p. cars have also been entered by Messrs. De Dietrich, one of which will be driven by Madame du Gast.

MR. T. W. H. OLIVER, who was responsible for the construction of part of the Brighton line from East Grinstead, has become a motorist, having purchased a 10-h.p. Panhard car from Mr. John D. Hill.

THE MOSLER CARBURETTOR.

HEREWITH we illustrate a somewhat novel carburettor of American design; it consists of a float chamber, float, spraying nozzle, rotary fan, regulating valves and means for their adjustment. The petrol is admitted to the float chamber A at the top. Near the base is an outlet, which is lower than the spraying nozzle. The level of petrol in the float chamber is higher than the nozzle, so that it flows to the latter by gravity.

When the motor is running air is drawn into the spraying chamber and eventually passes to the motor through the elbow B. On its way up it induces the fan G to revolve rapidly. The latter rises against the pressure of the coiled spring C, and with it goes the needle valve D which allows the spirit to enter the spraying chamber. The fan serves not only the purpose of opening the valve, but mixes the petrol vapour with the air. To adjust the needle valve and the flow of petrol, the screw which presses on the coiled spring may either be set or a valve between the float and the space between the nozzle—not shown in the illustration—may be regulated. To prevent binding,



a ball is inserted between the stem to which the fan is secured and the pin on which the coil spring rests. The spring is surrounded by a sleeve, which may be adjusted so that a wide range of adjustment of the former is provided for. The chamber in which the fan revolves is a glass tube, which has joints that are packed with cork. To further regulate the mixture a plate with numerous small holes is attached to the elbow casting. By turning it to its proper position the speed of the fan can be regulated. The new carburettor is made in a number of sizes by Mr. A. R. Mosler, of 309, Broadway, New York.

MESSRS. EVART-HALL, LIMITED, have opened a new depot and garage at 105, King's Road, Brighton, under the management of Mr. Thornton Nixon, late of Messrs. Hewetsons, Limited.

CONSIDERABLE attention is being given to the St. Louis International Exhibition by motor-car builders in France and Germany. A number of French firms have already secured space, while now it is announced that the Cannstatt-Daimler Company will be represented by a number of Mercedes cars, and that the Opel and Cudell companies will send some of their latest models.

MESSRS. CLARKSON, LIMITED, of Chelmsford, have sent us an illustration of the radiators they have supplied to Messrs. Napier and Sons for use on their Gordon Bennett Cup defenders. It will be remembered that this concern fitted the radiator for the original Gordon Bennett winner last year, this being made up at twenty-four hours' notice. Messrs. Clarkson have installed a special plant for the manufacture of all description of radiators.

MOTOR-CYCLING NEWS.

THE Norfolk County Council have under consideration the question of providing their district surveyors with motor-bicycles.

LETTERS recently received from Messrs. Best and Towne, of Christchurch, the New Zealand agents for the Mitchell motor bicycle, show that motor-cycling is making good progress in that colony, they having disposed of no less than thirty-five machines during the past year. A five-mile standing start record for New Zealand has been established on a Mitchell, the time being eight minutes nine seconds.

MR. F. HULBERT, of Putney, writes :—"I send you a photo of a lady's motor-bicycle recently designed and built by the Booth Motor Company. It is splendidly finished in all details, quite rigid, and practically free from vibration. My wife, Mrs. Hulbert, who is seen on the machine, has ridden it over 900 miles without a breakdown, her longest journey in the day being



120 miles. The engine, bolted to the down tube, is a 2 h.p. Minerva, with mechanically-operated inlet valve; the petrol tank, seen in front, has a capacity for a run of 120 miles; the coil and accumulator are arranged under seat pillar, and a very neat guard protects the dress from the belt.

THE Motor Cycling Club have decided to fix upon Eastbourne as the rendezvous for their Whitsun tour.

THE Turin Cycling Club is organising a motor-cycle race on the road from Milan to Turin. The race, which will extend over a distance of 145 kilometres, will be run off on the 24th inst.

A LADY motor-cyclist, Madame Jolivet, is competing in the Paris-Madrid races. She will ride a 3-h.p. Griffon motor-bicycle, similar machines being also entered by Messrs. Demester and Lamberjack.

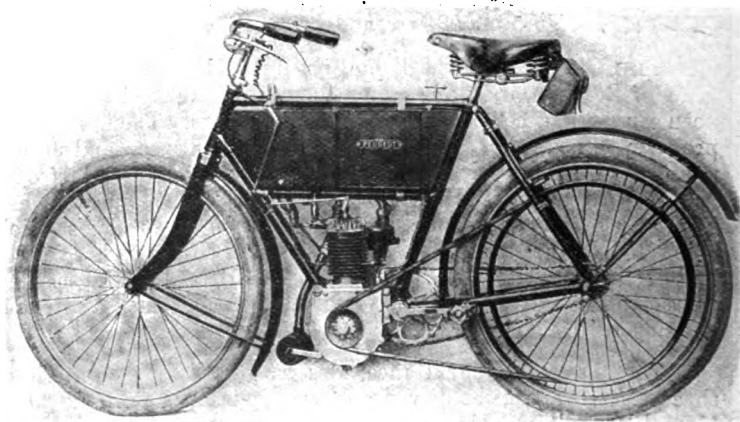
THE Motor-Cycle Committee of the C.T.C. propose to carry out a tour in France at Whitsuntide.

THE Belfast branch of the Motor-cycle Union of Ireland is arranging to hold a hill-climbing competition in Co. Down. The hill on the Castlewellsan-Clough road will probably be selected as the course.



The Excelsior Motor-Bicycle with Fora-Carriage.

HEREWITH we give an illustration of the Peugeot motor-bicycle which Messrs. Friswell, Limited, have lately introduced into this country. The 2-h.p. air-cooled motor is built in the frame in a vertical position, just forward of the bottom bracket. It is securely bolted to lugs forming a dovetail joint, thus securing perfect and permanent alignment. The mixture is furnished by a Longuemare carburettor, in conjunction with which is a throttle valve. The power is transmitted to a pulley on the rear wheel



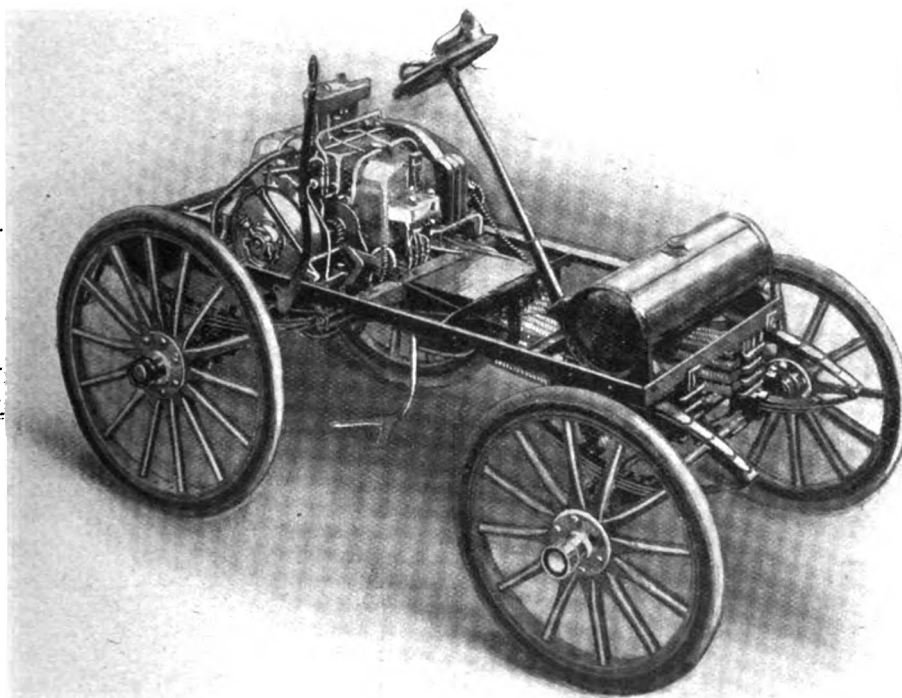
by a twisted leather belt. The accumulator, coil, petrol, and lubricating oil are contained in separate compartments in one tank, sufficient petrol being carried for a run of 100 miles. For lubrication a special oil pump is fitted, while there are brakes acting on both front and rear wheels. Although the machine is relatively light—under 80 lbs.—it is of substantial construction, and appears to be well finished as regards the various details.

THE Halifax Automobile Club has had a capital run to Southport; four cars, driven respectively by Mr. James Rhodes, Mr. Donald Sagar, Mr. Thomas, and Mr. Redman participating, while Mr. H. A. Lumb, of Triangle, was present on his motor-bicycle.

HERE AND THERE.

A TRACK for motor-car-racing is being prepared at Bexhill.

LADY MINTO, the wife of the Governor-General of Canada, is an ardent automobilist.



Chassis of Arrol-Johnston 12-h.p. Chassis. (See issue April 4th, page 92.)

AN extensive garage has been opened by Messrs. H. Beard and Co., at 20, Hill Rise, Richmond, S.W., and motorists will there find expert assistance always available.

On Saturday the Wolverhampton Automobile Club had a run to Bridgnorth, the "Star" car driven by Mr. J. Lisle being the most notable vehicle participating in the event.

THE Holland Park Motor Company, of Holland Park Avenue, W., have now added a motor-clothing department to their rapidly growing business.

ECHOES of the Agricultural Hall Exhibition continue to reach us, several firms having written of orders received as the result of inquiries first obtained at the Show.

It is reported that a syndicate is about to start a large service of motor omnibuses in London. The vehicles are to be built by the Durkopp Company, of Bielefeld, Germany; they will be of 16-h.p., and have accommodation for 20 passengers.

FOUR police traps, each 440 yards in length, have been established near Maidenhead, their location being as follows:—From Taplow station on the Bath road to Maidenhead Bridge; from the bridge into the town; from the top of Castle Hill to Punt Hill, and from Boulter's Lock to the bridge.

FROM Mr. John Lane comes the "Tramp's Handbook," a small volume by Mr. Harry Roberts, who has managed to get together much interesting information concerning life in the open country. Useful though they may be, some references to the specialities

of firms have a resemblance to advertisements. Otherwise the book is one which motorists, as well as those who tramp by road, will find useful, as well as good reading in spare moments.

LAST week we were able to briefly chronicle the outbreak of fire at the works of the Daimler Company at Coventry. Arrangements have been made to enable the work to proceed without appreciable delay.

THE World's New Accumulator Company, Limited, has been registered with a capital of £7,500 in 1s. shares, to carry on the business of manufacturers of electric accumulators, motor-cars, and carriages of every description.

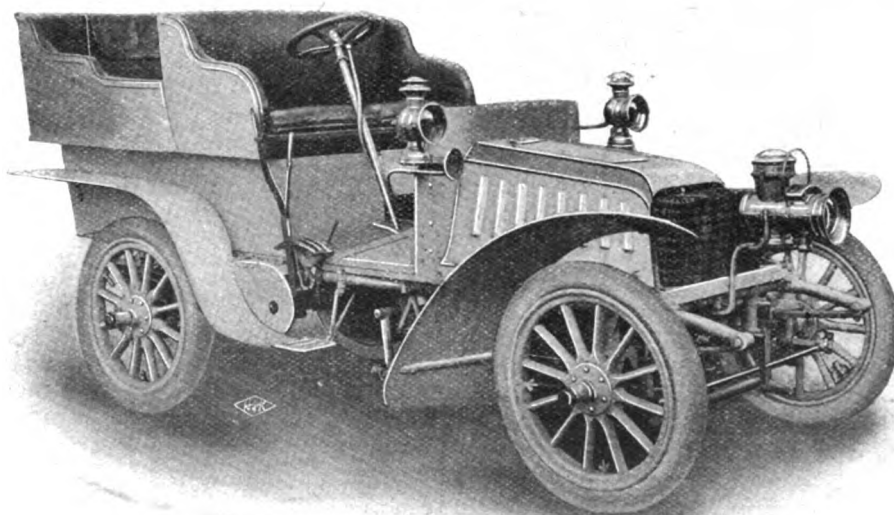
So many motor-cars were seen on the road during the Stock Exchange walk to Brighton, that the comparatively few horse-drawn vehicles specially chartered in connection with the event were almost objects of curiosity.

MESSRS. DRAKE AND FLETCHER, of Maidstone, have just completed a new agricultural motor. It is built somewhat on the lines of a traction engine, though on a very much smaller scale, and is driven by a three-cylinder petrol engine. The new motor will shortly be subjected to field trials.

A HOUSE of Commons Committee has commenced the consideration of a bill to incorporate the Stroud District and Cheltenham Tramways Company, with powers to run motor-cars worked on the overhead trolley system, without running on rails, along the road

through the valleys radiating from Stroud to Cheltenham, Stonehouse, Nailsworth, and Chalford.

MESSRS. SMITH, PARFREY AND CO., LTD., send an illustrated price-list of their motor-car lamps, and also of artillery motor wheels and springs. In the latter department they have several



Messrs. Pritchett's and Gold's 14-h.p. "Meteor" Car. (See issue April 4th, page 92.)

good designs, including motor axle forgings. At their works in Fulham Palace Road, Hammersmith, they have laid down an electric welding plant, which enables them to secure high-class workmanship.

A MOTOR-CAR works is about to be established at Willenhall.

MR. J. PIERPONT MORGAN, the son of the great American magnate, has just ordered a Lanchester car.

THE headquarters of the Kent Automobile Club will probably be at the Star Hotel, Maidstone.

MESSRS. SCAIFE AND PEARSON are leasing a garage which has been built at the rear of the White Swan Hotel, York.

MR. MAURICE HUNTER, of the Eastdown Works, Lewisham, is arranging to take out small parties for week-end motor-car trips.

THE nearest garage to the House of Commons is that of Messrs. Wolstencroft and Company, at Great Peter Street, Westminster.

INSTRUCTION in the working and manipulation of motor-cars is being given in connection with Harrod's Motor Department, Knightsbridge, W.

A DISCUSSION on the advisability of inviting the Government to deal with the alleged damage to the roads by motor-lorries is threatened at the next meeting of the Chorley District Council.

THE accompanying photograph was taken on the occasion of the opening of the Ryknield Engine Works at Burton, as



reported in the *Journal* a fortnight ago. Reading from left to right, the gentlemen seated in the front are Mr. C. J. Clay, Lord Burton, Mr. R. J. Morris (deputy-mayor), Mr. A. G. Clay (chairman), Mr. W. W. Worthington (vice-chairman), Mr. C. Cordingley and Mr. T. E. Lowe. Mr. E. Bagulay, the works' manager, is standing between the deputy-mayor and chairman. Standing close to the doorway on his right is Mr. W. H. Clay, one of the directors of the new concern.

AMONG the hotels of Messrs. Spiers and Pond is the Empire Hotel at Bath, which is a favourite resort of motorists in that locality. There is an excellent garage near the hotel, and the photograph on page 193 was taken as the Earl of Portsmouth and the Rev. Sir David Hunter Blair were leaving for Wells. The reverend knight is seen well muffled up against wind and dust. The Mors car to the right of the scene is that of Lord Berwick, who is standing on the pavement towards the rear of the vehicle.

THE annual report of Messrs. Brown Brothers, Limited, shows a profit for the year ending December 20th last, after making a provision for the depreciation of leaseholds, plant and patents, of £25,283. After making the necessary deductions and crediting the amount brought forward from the previous account, a net balance of £22,847 remains for disposal. Out of this sum, a dividend of 6 per cent. per annum has been paid on the preference shares, and a similar percentage has now been declared on the ordinary shares. Ten per cent. of the net profits available for dividend on the latter capital has been carried to the reserve fund as well as an additional sum of £5,000.

THE Auto Lubrine Company send a neat pamphlet of testimonials as to the value of Auto Lubrine in connection with automobiles.

A PHOTOGRAPH of lions in a motor car is one of the latest attractive advertisements issued in connection with a London place of amusement.

KRUPKAR, LIMITED, is the name of the latest concern to enter the motor-car trade in London, they being about to open a depot at Harrod's Stores, Trevor Square, Brompton Road, S.W. They are introducing a new car known as the "Krupkar," in 6-h.p., 10-h.p., and 16-h.p. sizes.

A 48-MILE run will be taken to-day (Saturday) by the Wolverhampton Club, the destination being the Wrekin Hotel, Wellington. Mr. G. Evans will act as captain. Next Saturday's outing will be to the Barley Mow, Newport, via Stafford, and on the 23rd inst. there will be an inter-club run with the Midland Automobile organisation.

THE Works Committee of Westminster City Council at their meeting on Monday, received a report from the city engineer advocating the use of motor vans to carry one ton, and to ply at ten or twelve miles per hour, for the removal of street sweepings from streets with heavy traffic. A motion in favour of tenders being called for the vans was adopted. The contractors will be required to provide one experimental van at first, and to maintain it for a given period.

FROM the Country Gentlemen's Association, Ltd., comes the Country Gentlemen's Estate Book for 1903—a splendid volume, well edited by Mr. W. Broomhall, who has had the assistance of many leading experts in estate work. Within six-hundred pages appears a quantity of useful and valuable information with regard to the management of estates and the work of farmers and gardeners. Sports and pastimes are also dealt with, and the omission of the automobile appears to be the one failing to make the work thoroughly complete.

THE Ordnance Survey have recently issued a folding pocket map of Brighton and the surrounding district. This is one of the series of maps of certain areas in England and Wales on the scale of two miles to one inch, the publication of which has just been commenced. The map is mounted on linen, folded outwards so as to admit of its being read without necessarily opening the whole map. Copies of the map may be obtained from the local agents, or, through any bookseller, from the Ordnance Survey Office, Southampton. Copies may also be ordered through head post-offices in towns where there are no agents.

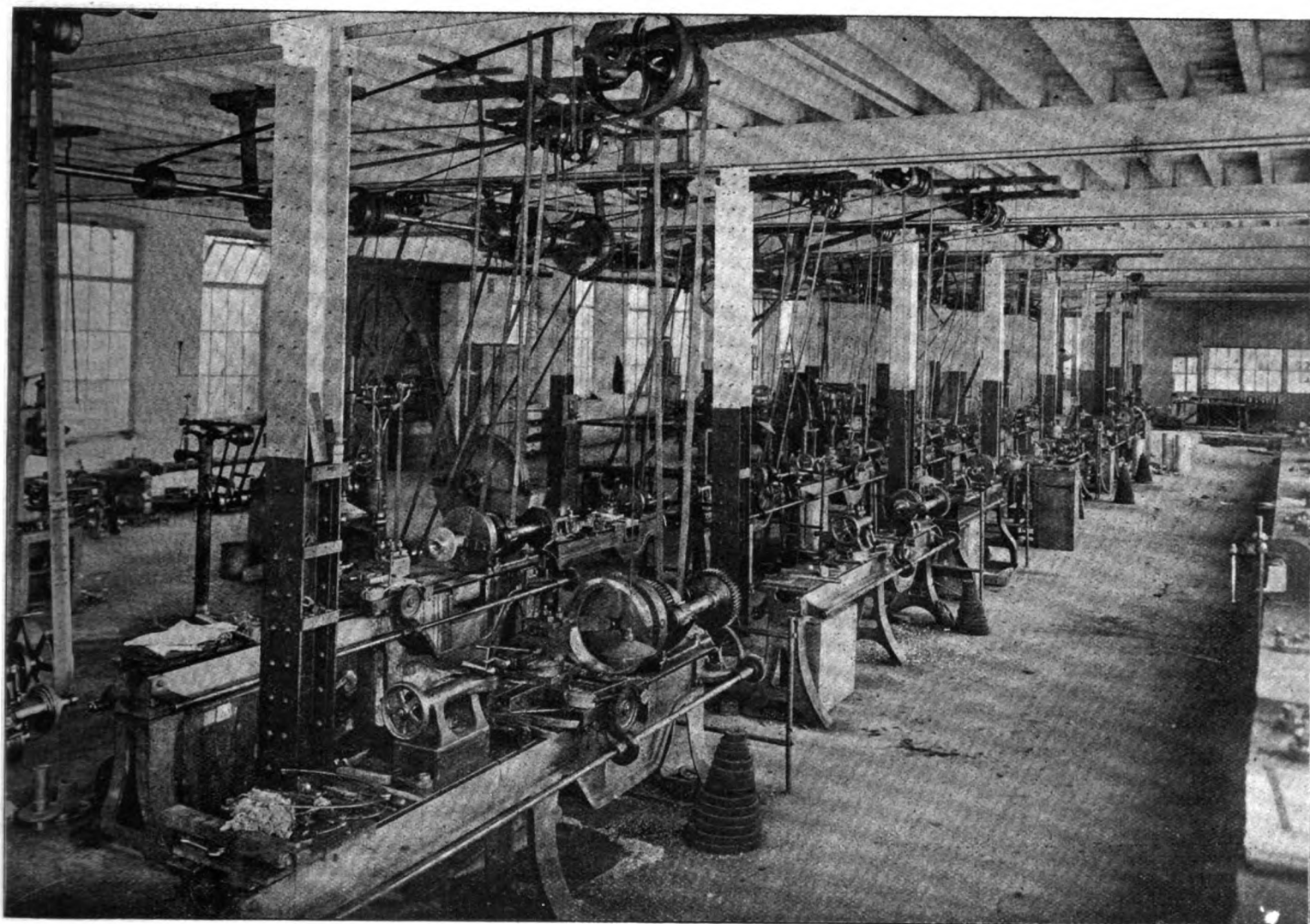
ON Saturday night a motorist was driving past the Imperial Theatre, Westminster, when two boys came down the street, at the side of the theatre, in a home-made motor-car, consisting of a starch box on four wheels. Having lost control of their vehicle, they went skidding across the road, and would have gone under the wheels of the automobile but for the driver's prompt and plucky action. He turned his car and charged into some heavy posts opposite the theatre. The vehicle was considerably damaged, and the driver thrown out, but he escaped injury. The boys were thrown from their box, and at Westminster Hospital were found to be suffering from shock, bruises, and a few minor cuts.

THE first combination petrol-electric omnibus built by the Fischer Motor Vehicle Company to the order of the London General Omnibus Company arrived in London last week, and is now at the Fischer Company's depot at Walnut Tree Walk, Kennington. The petrol motor and dynamo are carried in front, and are entirely enclosed in a compartment with movable sides under the driver's seat. Seats of the usual "garden" type are provided on the roof, and these can accommodate eighteen persons, while fourteen other passengers can be carried inside. The engine, which is of 20-h.p., comprises four cylinders. Directly coupled to its shaft is a 16-kw, six-pole dynamo. Current from this generator is taken to a pair of 10-h.p. motors which drive the rear wheels independently, while any surplus current is stored in a small battery carried beneath the inside seats.

THE MOTOR-CAR INDUSTRY IN SCOTLAND.

SCOTLAND is running the sister country a close race in the establishment of large motor-car works. Already North of the Border four concerns are turning out motor-cars on a large scale—the Hozier Engineering Company at Bridgeton, the Mo-Car Syndicate at Paisley, the Albion Motor-Car Company in Glasgow, and Stirlings Motor-Carriages, Limited, at Granton Harbour, near Edinburgh. Recently we had occasion to visit Edinburgh, and, through the courtesy of Mr. John Stirling, managing director, had the pleasure of visiting the extensive works of the last-named concern. The site of the

and lighting power purposes; the works throughout being driven electrically. Adjoining the power station is the battery house, furnished with E.P.S. storage batteries for lighting purposes after the engines have ceased running. On the north side of the works, close to the railway, and right in the centre of the main buildings, are situated commodious general stores and the despatch room. Here not only are all goods coming in either by road, rail, or steamer received, and thereafter distributed to the various departments of the works, but the cars, etc., are prepared for despatch to their destination. To the left of the stores is a substantial block of buildings, two stories high, 215 ft. long by 50 ft. wide. The ground floor of this contains a large, well-lighted erecting shop, the wood-working machine



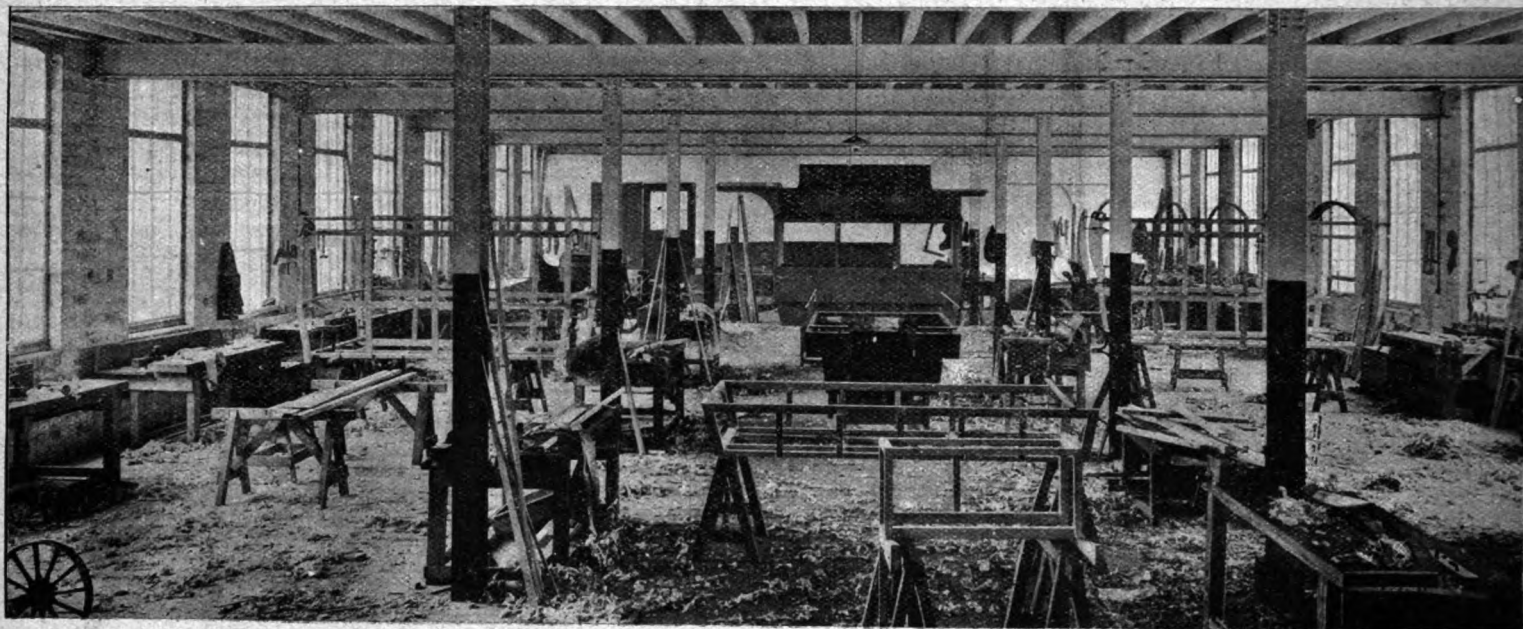
View of one of the Machine Shops in the Works of Stirling's Motor Carriages, Ltd.

works covers an area of nearly seven acres; it is situated close to Granton Harbour, adjoining the Caledonian Railway. The buildings have been specially designed for motor-car manufacture and built in a most substantial manner. After passing the Entrance Lodge a good block of buildings is met with on the right, built of fine English brick with red sandstone facing and artistic balustrading. This contains a suite of offices comprising managing director's office, board room, separate offices for the managing director, secretary, and works' manager, correspondence room, general office, etc. In the same block is the house of the resident works' superintendent. To the right of the offices and standing by itself is the power generating station, containing a large installation of gas engines driving dynamos for electric

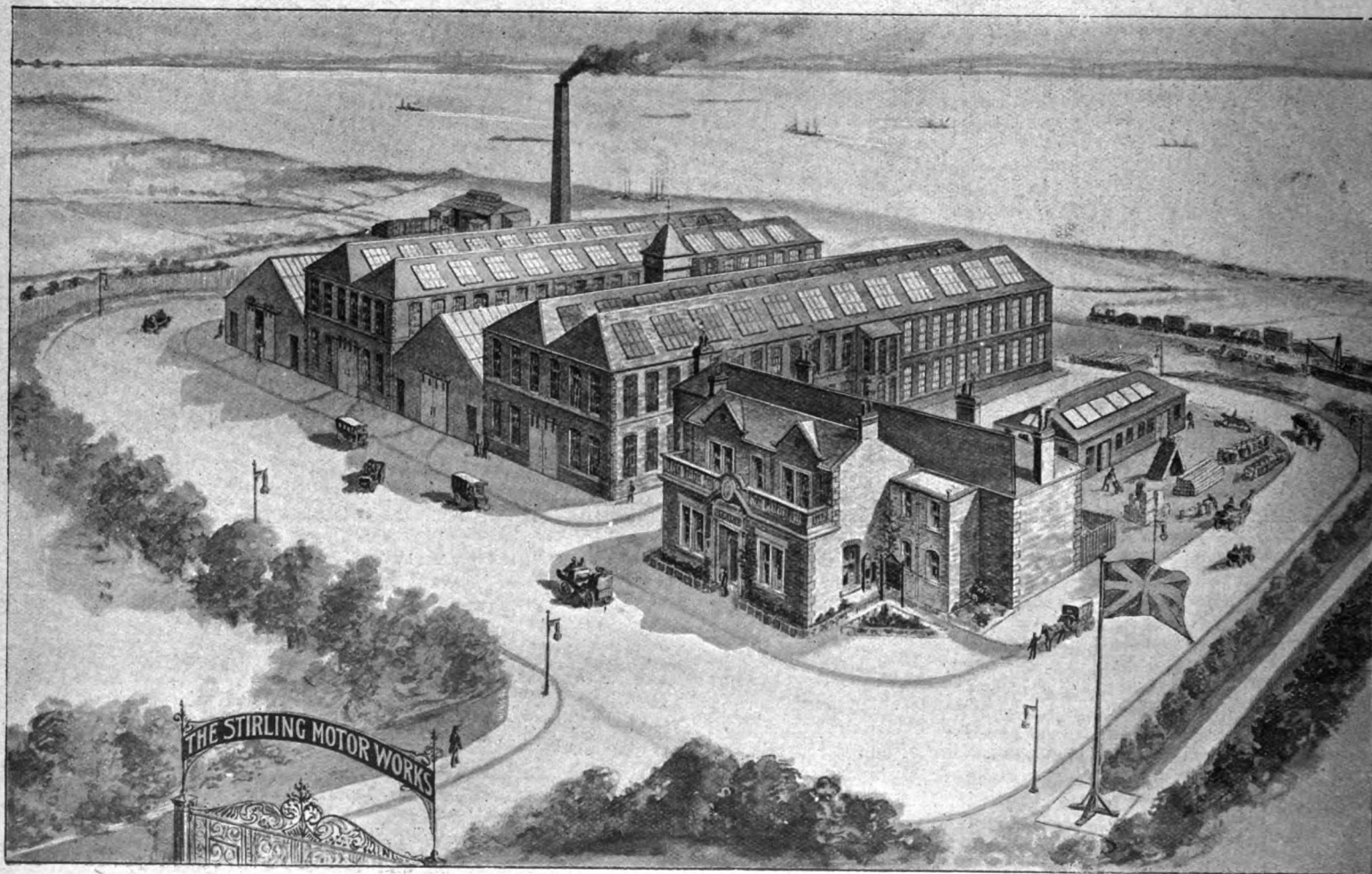
shop, equipped with the latest labour saving machinery in this line, and also a large smithy with tin and coppersmith's shop and case-hardening room. On the upper floor of the same block are located the drawing office, the pattern-making shop, motor erecting shop and workmen's mess room. Crossing a wide glass-covered bay, used as a running and testing shop, we enter the west block, which is similar in dimensions to the east, just described, and has two storeys. On the ground floor are a fine range of machine shops fitted with modern machine tools, and also the motor testing room. On the upper floor of this block are the large coachbuilding shops, adjoining which are the paint shop, varnishing room, and upholstery department. On the north-west corner of the site, and detached from the main works,

THE MOTOR-CAR INDUSTRY IN SCOTLAND.

(SEE PAGE 201.)



View of Carriage-Building Department in the Works of Stirling's Motor Carriages, Ltd.



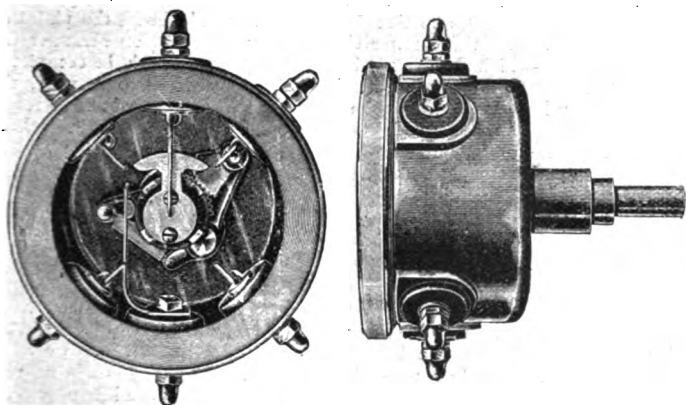
General View of the Works of Stirling's Motor Carriages, Ltd., Granton Harbour.

a very complete foundry has been established, while a broad testing track, three laps to the mile, encircles the main buildings.

Close upon 200 persons are at present employed, and the works, which are under the management of Mr. A. J. Drake, late works' manager of the Daimler Motor Company, have been running overtime almost continuously for the past six months to keep abreast of the large orders for public service omnibuses which the company have received, and which include 24-h.p. vehicles for the North-Eastern Railway Company, 27-h.p. omnibuses to the order of the Earl of Leitrim, for use in Ireland, and 24-h.p. omnibuses for South Africa, Western Australia, and New Zealand, as well as for Edinburgh and London.

THE "KING" AUTOMATIC IGNITION-TIMING DEVICE.

THE device illustrated herewith, which is the invention of Mr. Charles B. King, and manufactured by the Dayton Electric Manufacturing Company, of Dayton, Ohio, U.S.A., is stated to automatically vary the point of ignition, and is described as follows:—A throttle valve on the engine, controlled by the governor, indirectly acts upon the contact maker, which is automatically advanced or retarded, as the speed is varied. The device illustrated is arranged for a four-cylinder engine, using only one induction coil. The leads to each cylinder are plainly shown. The terminal for the high-tension current wire is directly opposite to that of the primary circuit, to which



is attached a spring brush which bears on the commutator. The other ends of the primary and secondary wires are "earthed" on the engine. The bearings and connecting rods of many automobile engines are frequently abused by the improper use of the hand-timing method, which can be obviated by the use of the automatic device; while by removing the spark control lever from the car the driver can give more attention to the road. The device, which is provided with a glass cover enclosing all the parts from dust and dirt, is so made that it can be attached directly to the engine or to the dash-board. In addition to the automatic timing, it also acts as a spark intensifier. The Dayton Company claim to be the originators of spark-gap intensifiers, they having made use of them for some years. The intensifier is formed by a spark-gap between the terminal points and the T-headed revolving sector. This gap increases the cumulative power of the secondary current and causes the spark to jump between the proper points of the sparking plug, although the latter may be partly short-circuited with oil and soot.

REPLYING to a question by Mr. H. Broadhurst as to the difficulty of M.P.'s finding accommodation near the House of Commons, Mr. A. Balfour has suggested more rapid transit as the only remedy. One hon. member interpolated the remark "Motor-cars," but whether he suggested these are to be provided from the Exchequer did not transpire.

CORRESPONDENCE.

THE ABOLITION OF CHANGE-SPEED GEARING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see that in your issue of the 25th ult. a correspondent has at last brought forward the subject I have been for some time looking for, viz., the abolition of change-speed gearing. So far as I could ascertain at the late exhibition at the Agricultural Hall, I saw really nothing good in change-speed gears worth much attention. I do not believe in sliding gears in mesh at all; this system may be very well in the hands of an expert, or those who are good judges of speed suitable to the gearing. On the other hand, suppose a gentleman buys a car so fitted; by the time he or his coachman, has properly learned to strike his gears, they are usually found badly stripped and torn on the side of the cogs: as a fact, they have done as much damage, say, in a month as an expert would do in a year.

To return to the subject of abolition of change-speed gearing, I have a strong idea that this can and will be done before very long in some way or other. One of the best ways to this end, I think, is by compressed air. Suppose you have a good De Dion or other engine running at say 1,500 revolutions per minute connected direct with an air pump or piston, the piston being suitable and up to the power of the De Dion engine, and the air being forced into a specially strong steel cylinder fitted with a safety valve. The waste air from this could go to cool the petrol engine, and this would most likely answer without carrying much water or radiators. The compressed air can then be fed to the compressed air engine, entirely independent of the petrol engine, the latter being simply used for compressing air.

By this arrangement the greatest flexibility can be secured. The compressed air engine would no doubt keep itself quite cool under all conditions, the rings being better lubricated, while using far less oil. The ordinary change-speed gears can be entirely done without and the car driven in exactly the same way as steam vehicles, but without boiler, furnaces, burners, etc. I should like to have the opinions of your expert readers.—Yours faithfully,

M. L. VEALEY.

HIGH-SPEED TREMBLER COILS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having experienced considerable difficulty at times in starting my 8-h.p. De Dion engine with De Dion contact breaker and dry battery, I propose to fit instead a high-speed trembling coil and accumulators, with a wipe contact.

I should be greatly obliged if any of your readers who have tried this would give me the result of their experience. I am informed that, although De Dion and Bouton still keep to the dry battery and trembler on contact breaker, yet most of their cars on coming to England have the other system of ignition fitted. I should also like to know if the change would detract from the power of the engine.—Yours faithfully,

ONE TIRED OF ADJUSTING THE TREMBLER.

THE JOHNSON TESTIMONIAL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—At the annual general meeting of the Club I announced with regret the resignation of the Club Secretary, Mr. Claude Johnson. His resignation has now practically taken effect, though until June the Club will have the advantage of a portion of his time each day. The moment seems now to have arrived for putting into effect the project mooted at the general meeting of presenting Mr. Johnson with a testimonial, and I therefore invite the co-operation of your *Journal* in bringing this matter before the notice of automobilists generally throughout the country. It is unnecessary for me to enlarge upon the great service Mr. Johnson has rendered to the automobile movement, yet I do not like to send this letter without paying a warm tribute to his energy, ability, and unvarying courtesy to all with whom he has come into contact. Further, I may mention that it is due to his foresight and energy that a road was found in Ireland over which it is possible to run the race for the Gordon Bennett Cup, and that the preliminary arrangements were initiated by him. At the meeting above referred to I announced that the Club would head the list by a subscription of 100 guineas out of its funds, and a list of other subscriptions will be found appended. I should be glad if you could see your way to receive subscriptions to the Testimonial Fund and to open your columns for publication of the amounts already subscribed.—Yours faithfully,

R. W. WALLACE, Chairman, A.C.G.B.I.

[Included with the foregoing letter was a list of subscriptions amounting to £347 14s.—Ed. M.C.J.]

FRICITION TRANSMISSION GEAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was much interested at the recent exhibition at the Agricultural Hall in a car in which the power was transmitted and the speed varied by means of friction discs, but am somewhat doubtful as to the efficiency of the same in practice. Much time and money have been spent by inventors in the effort to devise a practical variable speed friction transmission for motor-vehicles. Friction discs of various kinds have been tried with faces composed of compressed paper, wood, leather and other materials tending to increase the friction, but no device of this kind has

long remained in practical use. The size of the frictional surfaces required to transmit power sufficient to drive a car is generally so great that they become inadmissible on account of the room they take up. Le Pape, the French inventor whose carriage was described in one of the early issues of the *Journal*, practically exhausted the subject of friction discs, and was compelled to abandon them entirely for the reason above stated. He found it necessary to increase the dimensions of his surfaces time and again, until he was compelled to admit the case was hopeless. I believe, too, that a well-known London motor agent wasted a good deal of money on a friction transmission. If any reader has had experience of a friction-driven car, I feel sure a recital of the same would be of interest.

Yours truly,
BALLADEUR.

MOTOR-CAR SCHOOLS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to your correspondent "Would-be Motorist," I should like to say that he should have no difficulty in learning to drive, as most firms would be pleased to supply a driver to instruct him. I am employed by one of the leading firms in England, and have just returned from a customer who purchased one of our cars, and after one week's tuition he is able to drive very well.—Yours truly,

PETROL.

LUBRICATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to my article on "Lubrication" in the *Journal* of the 25th ult., Mr. Shackleton, in a letter in the last issue, objects to my advocacy of the introduction of petrol in an emergency into motor cylinders as a cleaning agent, and somewhat dogmatically recommends paraffin oil for this purpose.

The disadvantages of a temporarily deteriorated cylinder surface which your correspondent urges against the use of petrol is, I think, far outweighed by the following considerations:—

1. Possible difficulty in "starting up" engine after using paraffin in sufficient quantity to clean out all oil.
2. Deposit on valves and plug characteristic of paraffin after engine has been running a short time.
3. Visible and objectionable exhaust obtained with paraffin.
4. Superior cleanliness of petrol.

—Yours truly,

THE WRITER OF THE ARTICLE.

IDENTIFICATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I observe with much regret that it is becoming common to speak of "numbering proposals," "identification numbers," "numbering legislation," etc. Thus those who are in favour of means of identification are held up to scorn as being in favour of motor-cars being placed on a par with "street cabs and omnibuses." Now, Sir, I am strongly in favour of means of identification, and am equally strongly opposed to any legislation which will compel the motorist to place large figures on his car. If this is what is proposed I shall unhesitatingly vote against it.

While I hold that the misconduct of many persons driving motor-cars justifies the demand for means of identification, if the speed limit is removed, I think that the use of a name selected by the owner is the proper mode of providing for identification, although it may be convenient to have a number opposite the name in the register and in the licence issued.

Therefore I would earnestly beg of writers in or to the Press to abandon the word "numbers" in referring to the matter, and to speak of "means of identification" only. If the words "numbers" and "numbering" are constantly flourished before legislators and members of the public it will come to be assumed that this is what those who favour means of identification are willing to submit to, which is certainly not the case.—Yours truly,

J. H. A. MACDONALD.

THE ELIMINATING CONTEST.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Has it occurred to any practical motorist that the Eliminating Test in connection with the Gordon Bennett race was obviously inadequate? This is rightly pointed out in the *Daily Telegraph*, and when we consider that the course will be more than 350 miles in extent, it does seem absurd to select the team on a kilometre track, where the impossibility of cars getting to their best speed is apparent to the veriest tyro.

Suppose an Eliminating Test had been required in connection with the Brighton walk. Would the competitors have been content with a fifty yards sprint? No! I should have preferred to have seen the Clipstone course passed by, and a run of fifty miles taken either in Ireland or in the early daylight on some quiet country roads in this country. There are many estates where a circular course could have been obtained.

I hear that a protest has already followed the Eliminating Test, and that the Star Company are not quite satisfied with the way in which the decision was arrived at. Their reasons should be seriously regarded by the Club Committee.

By the way, how does the matter stand between the Napier and Wolseley

companies? Will the latter accept the offer made on behalf of the former cars, and is there likely to be a further match—this time between these two—for the honour of the third place? Or is the report as to the inclusion of the third Napier in the team quite official?—Yours truly,

A MOTOR SPORTSMAN.

THE LIGHT LOCOMOTIVES ACT, 1896.

AT Runcorn, Messrs. Thomas Rigby and Sons, corn millers, Frodsham Bridge, have been summoned that they, being owners of a locomotive, unlawfully failed to employ a sufficient number of men to work the same. Police-sergeant Bennett said the engine, weighing 2 tons 18 cwt., with a wagon attached, passed through Sutton with only one man in charge. Smoke and steam were emitted. Mr. Fletcher, of Northwich, defended. The engine had been specially constructed by Messrs. Tasker and Co., of Andover, to satisfy the requirements of the Light Locomotives Act, 1896. He called Mr. G. Hoare, managing director to Messrs. Tasker, who gave evidence to this effect, and said the engine was fitted with smoke-consuming appliances and brakes. Similar engines went to Covent Garden, London, every day, and there had never been a complaint. One man in charge was sufficient. The Bench decided that the engine was a light locomotive, and dismissed the case.

ALLEGED BREACH OF CONTRACT.

MR. JUSTICE KENNEDY has delivered judgment in the King's Bench Division of the High Court in the case of *Roots and Venables v. Alday and Onions*, of the Matchless Works, Birmingham. He said this was an action by the plaintiffs, who were engineers and motor-car makers of London, to recover damages from the defendants for breach of contract in connection with the delay in delivering six sets of motor-car engines. He should assume that if the engines had been delivered as expected the plaintiffs would have made a profit of £50 for each car, and therefore he would give plaintiffs £250 damages for the delay in the five engines and the return of the £100 paid as deposit. As to the counter claim, in his opinion there was no delay caused by any act of the plaintiffs, and therefore judgment would be for the plaintiffs on both the claim and the counter claim. He understood an arrangement had been made by which the five mechanisms in question would be completed by the defendants and delivered to the plaintiffs within two months, the plaintiffs to pay half the contract price for them. Judgment would therefore be for the plaintiffs for £350 with costs, except in regard to the first claim made by the plaintiffs, and in regard to the special damages which plaintiffs had claimed. Judgment accordingly.

TRAILER CASES.

AT Chertsey, Mr. S. G. Townsend, of Pinner, was fined £1 and costs for driving a motor with a trailer more than six miles an hour. Defendant said if the law required the pace to be not more than six miles an hour he would plead guilty. But the law was never intended for motor-bicycles with trailers. The Chairman: Whether the law is right or wrong we have to administer it. The fine was £1 and costs. The same penalty was inflicted in the case of Mr. S. P. Harrington, of Surbiton, for a like offence.

AT Wokingham, Harold Matthews, Great Marlow, was summoned for riding a motor-bicycle, with trailer attached, in the London Road, at a greater speed than six miles an hour, contrary to Rule 2 of Article IV. of the Light Locomotives on Highways Order, 1896. Defendant pleaded that he was a novice at driving a motor-bicycle, and was not acquainted with the law. Police-Sergeant Jannaway said defendant was driving at the rate of fifteen miles an hour.—The Bench did not think the defendant offended wilfully, and dismissed the case.

CLAIMS FOR DAMAGES.

JUDGE RUSSELL, at Croydon, has ordered Mr. S. F. Edge to pay £11 damages for colliding on January 24th with a van owned by Mr. G. Shepcott, of Croydon.

CAPTAIN DONALD NICOLL, D.S.O., brought an action against the Hon. Robert Beresford for personal injuries sustained through a collision between plaintiff's motor-bicycle and defendant's motor-car in Euston Road. The case for the plaintiff was that the car was driven at a furious pace on the wrong side. Plaintiff was knocked down, several teeth were broken and others knocked out. His dentist's bill amounted to 76 guineas. The defence was that the *chauffeur* was not on his employer's business, and that, in those circumstances, the employee was responsible. The jury awarded the plaintiff £150 damages.

At the Carmarthen County Court, a case has been heard in which Mr. J. N. Williams claimed £10 from Dr. R. D. Evans for damage caused to a horse and trap through the negligent driving of a motor-car by defendant's servant. Judge Bishop, in giving his verdict, held that from a legal point of view both motor-car and horse and trap were legally entitled to use the highway, if they used it with due caution. It was for him to be satisfied that defendant was exceeding the legal limit of speed, and therefore guilty of negligence, for which he would be responsible. He failed to be satisfied from the plaintiff's case that such legal limit of speed had been exceeded in this instance, and therefore found a verdict for the defendant, with costs. Judgment accordingly.

At the Burton County Court, Judge Smyly, K.C., was engaged for several hours in the case of William Deakin v. the Wolseley Tool and Motor Car Company, Adderley Park, Birmingham. Mr. Parfitt was for the plaintiff, and Mr. Vachell for the defendants. Plaintiff, a market gardener, of Lichfield, sued for £50, as compensation for injuries sustained through the alleged negligent driving of defendants' servants. The action arose out of an incident which occurred early on the morning of August 21st between Lichfield and Burton, during a speed trial, when the company's cars startled the plaintiff's horse and caused it to bolt, throwing the driver to the ground, and resulting in injury to both man and beast. The drivers of the motor-cars were summoned before the Burton Bench on that occasion, and substantially fined. The defence was that the accident was caused by the negligence and carelessness of plaintiff's own driver, but his Honour held that it was brought about by the unreasonable speed of the motor-cars, and gave judgment for the plaintiff for £30, costs to follow the event.

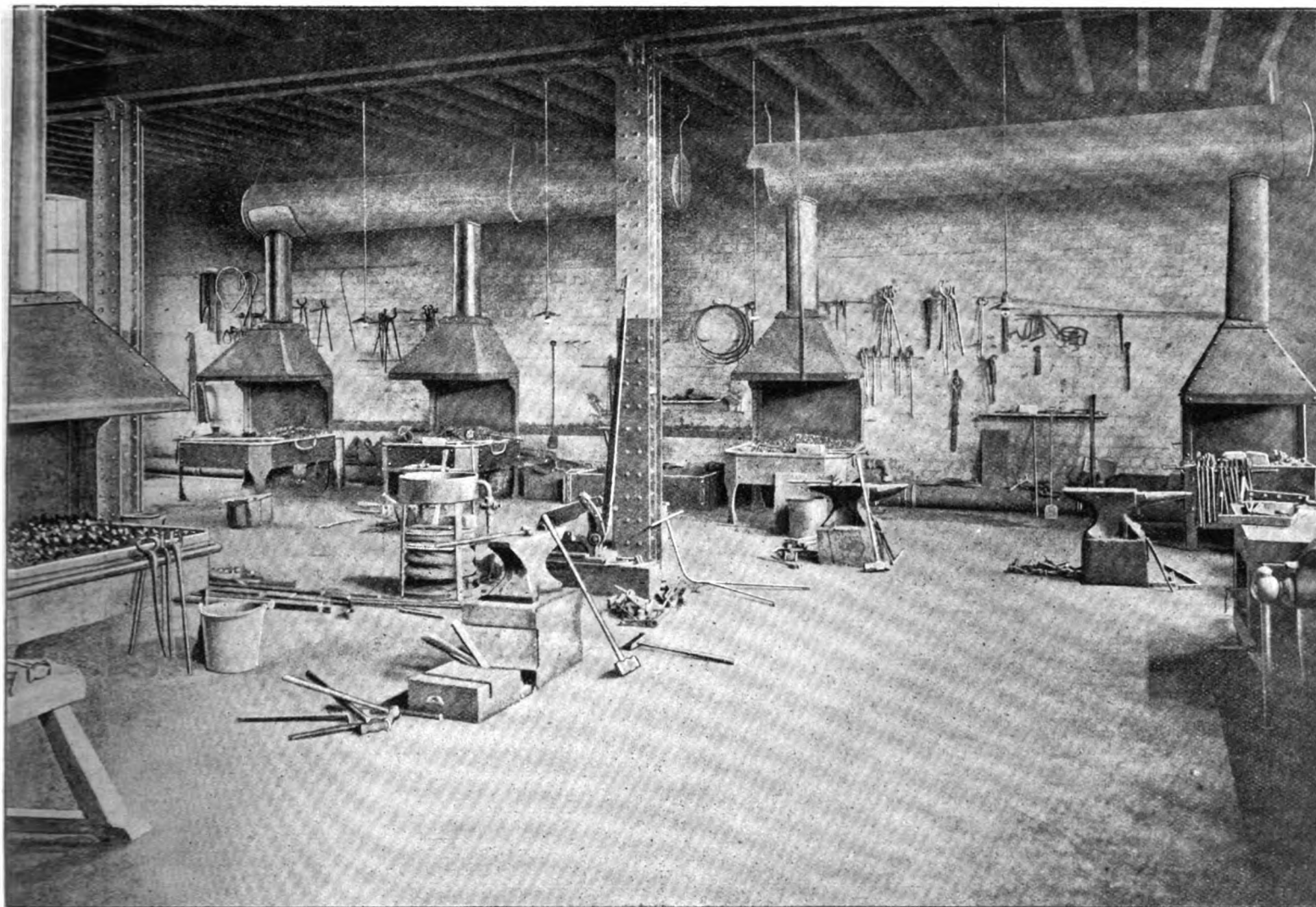
on a gate disguised as yokels. As soon as a motorist sweeps past, one of them moves a signal whilst another in hiding takes the time with a stop watch over a measured distance. Round a bend in the road is an uniformed officer waiting to pull up the victims.

SEVERAL motorists have again fallen into the Ripley trap, where Sergeant Jarrett is one of the best known M.C.'s. The actual measured distance is 176 yards, and is located in the parish of Send.

A QUARTER of a mile has been measured on the London Road, South-borough, and several traps are reported from the Tonbridge district.

MOTOR-CAR v. DOG.

At the Bridgend County Court, before Judge Williams, Frederick Harries, motor-car driver, Pwllandras, near Bridgend, was sued by Thomas



View of Smiths' Shops in the Works of Stirling's Motor Carriages, Ltd. (See page 201.)

POLICE TRAPS.

IN the centre of the winding village of Long Preston, near Settle, Yorks, a measured 220 yards is being watched, and many motorists have fallen victims during several weeks past.

AN elaborate trap for motorists is in constant operation in the Headingley Lane, Leeds.

WHITE HILL, running into Henley-on-Thames, on the London road, has been a centre of watchfulness on the part of the police.

AMONG new traps on the Bath road is one on the London side of Twyford.

THE traps on the North road, in the county of Huntingdon, include one near the village of Paxton.

A MEASURED distance on the Bath road, just after the thirtieth milestone from town, has been used for trapping motorists.

ON the London road, near Hare Hatch House, Wargrave, the Berkshire police have been very active. Armed with stop watches, they watch the journeying of motorists over a measured quarter of a mile. This trap is reported to be of an elaborate nature. Policemen are said to be stationed

Trevelyan, of the same place, for £10 for the loss of a fox terrier, killed by defendant's motor-car, on the 27th September. The evidence of plaintiff's witnesses was that the dog was in the road, about three yards from the kerb and near plaintiff's cart, when the motor-car, driven by defendant, came along at a rate of from fifteen to twenty miles an hour, ran over the dog and killed it. Defendant said he was driving at a rate of not more than six miles an hour. The dog was under the cart, but as the car came along it dashed out right under the wheels and it would have been impossible for him to avoid it. Judgment for £5.

REFUSING TO STOP.

At Willesden, Angelo Caprino, Hartland Road, Kilburn, has been summoned for driving a motor-car at an excessive speed and for refusing to stop when requested by the police. He was fined £2, with costs, on the first charge, and £3, with costs, on the second.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Witham	W. B. Lake, Braintree	—	£1, etc.
Colchester	C. Burchell, Manchester Square, W.	—	£1, etc.
Leeds	P. Hudson, Kirkstall	15 m. p. h.	£3, etc.
	F. E. Asquith, Leeds	—	£10.
Willersden N. W.	A. Caprino, Kilburn	—	£2.
Lambeth	*F. Bentley, Kennington	—	20s., etc.
Chapstow	C. Robinson, Chiswick	25 m. p. h.	£1, etc.
Reading	J. R. Sharp, Chiswick	33 m. p. h.	£5, etc.
"	S. Butler, Bristol	21 m. p. h.	£5, etc.
"	*G. Ballcock, Maidenhead	21 m. p. h.	£2, etc.
Chelmsford	W. Charles, Westbourne Park, W.	16 m. p. h.	£5, etc.
Aberdeen	A. Magham, Tullnessle, N. B.	—	£2.
London	A. W. Petrockokine, Bayswater	—	£5, etc.
St. Neot's	G. R. Smith, Leeds	35 m. p. h.	£6.
"	R. Eason, Clapham	20 m. p. h.	£7.
Newport (Mon.)	F. Evans, Pontypidd	—	20s., etc.
"	A. Elphinstone, Newport	—	20s., etc.
"	W. Wallen (driver to Mr. T. E. Dunville)	—	20s., etc.
Gloucester	W. Leggat (driver to Mr. Arthur Chamberlain)	—	£10, etc.
Hull	*F. Stamford, Hull	—	10s., etc.
Altrincham	A. Callum, Birmingham	—	£10, etc.
"	S. Girling, "	—	£10, etc.
Bristol	*F. Rowe	—	Dismissed.
Tadcaster	J. Hales, Leicester	—	20s., etc.
Kingston	E. West, 53, Long Acre, W. C.	17 m. p. h.	£1.
"	J. A. Haley, Norfolk Street, W. C.	20 m. p. h.	£2.
"	T. Lewin, Twickenham	—	£3.
"	W. A. Hodges, Kensington	20 m. p. h.	£3.
"	E. Sinclair, Clapham	23 m. p. h.	Dismissed.
Kirkcaldy	C. Gaulard (driver to Capt. Wemyss, of Wemyss Castle)	—	£5, etc.
Hythe	Capt. R. T. Dixon, Hythe	—	10s., etc.
Beaconsfield	W. Cox, Kilburn	—	£2, etc.
"	C. Whitelaw, Taplow	—	£2, etc.
"	R. Hargreaves, Reading	33 m. p. h.	£5, etc.
London (Marlboro' St.)	E. Soland, Bloomsbury	—	Remanded.
Winchester	L. S. Davies, Henley-on-Thames	23 m. p. h.	50s., etc.
Kingston	J. Restler, Southwark	20 m. p. h.	£2.
"	A. Gentilb, Oxford St., W.	—	Adjourned.
"	W. Munro, Sloane Street, W.	22 m. p. h.	£2.
Chertsey	A. Pazott, Addlestone	30 m. p. h.	40s., etc.
"	*H. C. Lafone, Walton	—	Dismissed.
"	G. Cabrera, London	—	£1, etc.
"	H. Simmons, Addlestone	—	£1, etc.
"	F. Rendle, Ascot	—	£1, etc.
"	R. G. Taylor, Surbiton	—	£2, etc.
Guildford	I. de Plain, London, S. W.	—	£3, etc.
"	*R. G. Humphries, Sutton	23 m. p. h.	£3.
"	Clifton Robinson, jun., Chiswick	—	£3.
"	V. Abraham, Notting Hill	—	Adjourned.
Neath	*J. J. Hughes, Swansea	18 m. p. h.	20s., etc.
Brighton	H. Lotery, Whitechapel, E.	—	Withdrawn on payment of costs.
Wokingham	Miss Gladys Davies, Henley	19 m. p. h.	£2, etc.
"	J. Parrott, Sonning	30 m. p. h.	£10, etc.
"	G. F. Glenney, Wimbledon	19 m. p. h.	£2, etc.
"	*H. Matthews, Gt. Marlow	15 m. p. h.	Dismissed.
"	P. Willis, Junior Naval and Military Club	32 m. p. h.	£6, etc.
Epsom	E. Roufell, Mayfair	21 m. p. h.	£1, etc.
"	J. Vinto, Paddington	19 m. p. h.	£1, etc.
"	A. Holl, Croydon	20 m. p. h.	£1, etc.
Slough	W. R. Rawlings	19 m. p. h.	£2.
Oxford	H. Mandrey, Farnborough	—	10s., etc.
Leeds	W. Passmore, Leeds	—	£3, etc.
Farnham	J. Ralph	—	10s.
Tonbridge	W. Mosenthal, London	28 m. p. h.	£2, etc.
"	do. do.	20 m. p. h.	£3, etc.
"	E. West	—	£1, etc.
"	S. Speakman	17 m. p. h.	Dismissed.
Witham	*H. C. Edmunds, Streatham	—	40s., etc.

Where no alleged speed is given it is understood to be above the legal limit.

* Motor-Cycle Cases.

MR. JOHN JONES HUGHES, of Sketty Isaf, near Swansea, was summoned for furiously driving a motor-bicycle at the rate of 18 miles per hour down Aberdulais Hill. A reporter, in setting forth the terms of the summons, says he was charged with "furiously driving a motor-bicycle to which was attached a chair, in which a lady was seated."

EMILE SOLAND, whose case was remanded at the Marlborough Street Police Court, was charged with driving furiously, and thereby injuring a man, who had to be taken to the hospital in consequence.

THE 100 MILES NON-STOP TRIAL.

THE Weston Motor Syndicate has addressed the following letter to the Club re the trial to which reference is made elsewhere:—We notice in the official report on the performance of our 10-h.p. Chenard and Walcker car, the following statements: On the one hand, under the heading "Speed," the words "up to legal limit" appear, whilst in the Official Observer's footnote the remark appears, "The car was driven very slowly, the engine being throttled the whole time," etc.

Seeing that in the regulations governing the 100 Miles Trial the following appears:—"Speed.—No speed in excess of 12 miles an hour will be recognised excepting in ascending Dashwood and Aston Hills," etc., and that since our car left the Automobile Club's premises in Piccadilly at 8.55 a.m., returning, after completing the 100 miles, to the starting point at 5 p.m., according to our representative's report, we submit that we conformed to the Club's regulations, and maintained a speed as near as possible equivalent to the legal limit. Either, therefore, the above rules mean nothing, notwithstanding their stringent wording, or other cars which have followed the latter course have been given an advantage over us, who saw fit to abide by them. Believing that the quarterly 100 miles trial was a consumption trial rather than a test of speed, we endeavoured by every legitimate means in our power to establish a record, and under these circumstances, therefore, we did not wish to exceed the legal limit. We request, therefore, that, considering the above circumstances, the Official Observer's footnote that the car was driven slowly, etc., should, in justice to ourselves, be omitted from the Club's certificate; as long as the car was driven up to the legal limit, it could not be termed "slowly" if the Club's rules are intended to be observed. We were entitled to take advantage of every bit of down grade where gravity would help us, which, by the way, never compensates by 30 per cent. of the additional fuel required for ascending up-grades. Notwithstanding this, however, we challenge any manufacturer to transport four passengers, in a car weighing complete over one ton, a distance of 59½ miles on one gallon of petrol, as we did on the 24th of April, whether he take advantage of every bit of gradient or not.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, MAY 16, 1903.

[No. 219.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



AT length the official voting paper in connection with the postal vote of the A.C.G.B.I. has been sent to members, who have been confused by the presentation of a triple inquiry where a simple question should have sufficed. Members are asked if they favour numbering, provided (1) the speed limit is abolished; (2) the legal ruling that a high rate of speed is to the common danger is altered and (3) the tare limit is raised. It is, however, generally felt that identification—whether by numbers or names—may be entertained by the Legislature without regard to any of the wished-for concessions; hence the proposal seems to place suggestions before the authorities who may decline to give motorists anything in return. Earl Russell asks for a vote on the small identification plate, the certification of drivers, and the increase of the penalty for serious offences. In view of the uncertainty caused by the first question and the want of necessity for the third we feel that an affirmative reply to the second will be most in consonance with the feelings of motorists on the subject, and hence we welcome this question, "Are you in favour of nothing further being done by the Club at present to promote legislation?" with a definite and emphatic "Yes."

"Yes"
to
No. 2.

The absurdity of the whole matter is made plain to the man in the street, and should be equally translucent to the man in the car, by the fact that Mr. Walter Long is premeditating action. What need for the Club to waste time and arouse friction by the promotion of legislation? The only wise policy is to await the introduction of the Government measure, and then seek to amend or adopt it. But to still further confuse the issue by the promotion of a fresh Bill seems almost as unwise as the course of procedure which has been adopted from the beginning of the agitation.

Electrical
v.
Petrol Cars.

We understand that makers of electrical vehicles are showing considerable opposition to the numbering proposals. They protest against the suggestion that "conspicuous marks of identification" should be placed on such carriages, and declare that to insist on "disfiguring numbers" being placed on vehicles would practically put an end to their use in London. What applies to electrical vehicles must also be urged in regard to petrol cars. There must be no differential treatment, and the makers of electrical vehicles will be well advised not to ask for eliminating clauses in regard to their special cars, but to reject the proposal to number any class of vehicle whatsoever. We are glad to hear that they agree as to the folly of numbering, and doubtless they will join with others in writing "Yes" opposite the second question of the Club.

A Run
to Watford.

RECENTLY we took a spin to Watford on a 12-h.p. Benz-Parsifal car—the new type described in our report of the Agricultural Hall Show, and illustrated in our issue of April 25th. Speeding away from the Tottenham Court Road, opportunities of seeing the easy control exercised by the driver were frequent, and then by Regent's Park and St. John's Wood we quickly got into Cricklewood, and over as bumpy a bit of road as any stage coach had ever to encounter. Verily the local authorities should be awakened to the fact that they should be as careful of the requirements of road users as of pedestrians. From the newer suburbs we quietly ran into the famous village of Edgware, whose broad wide street knew something of the glories of the coaching days of old—now apparently being revived by the automobile.

Road Obstructions.

THE Benz-Parsifal has the virtue of being particularly free from vibration, while its comfortable tonneau is well suited to a touring vehicle—and such this car is intended to be. Its speed we tested across Bushey Heath, and as no policemen were about and the road was clear our driver took advantage of the rare occasion and "let her go" up to a speed of—well, 'tis no matter. We did it; and the car was slowed down in good style. But why are great wagons drawn across the road to the possible danger of all who attempt to pass. Twice we nearly collided with vehicles that were placed sideways across the street, while the drivers were nowhere near the horses. Only the presence of powerful brakes on a car of easy control, and a wideawake driver can avert catastrophes in such circumstances. How we returned will be told next week.

The Supply of
Petrol in Ireland.

COMPLAINT reaches us of the difficulty experienced by several Irish firms to obtain supplies of petrol and motor spirit, and we would urge those responsible to see to the matter without delay. A dearth in Ireland next month would thwart many of the anticipations of prosperity that have been indulged in. In view of the international interest in the event in the Emerald Isle the matter assumes supreme importance; and we would advise local firms to prepare for the coming demand by giving orders well in advance. At the same time we would point out that those in the trade are not wholly to blame, for the railway and shipping companies do not appear to have shown much enterprise in dealing with the circumstances that have lately arisen.

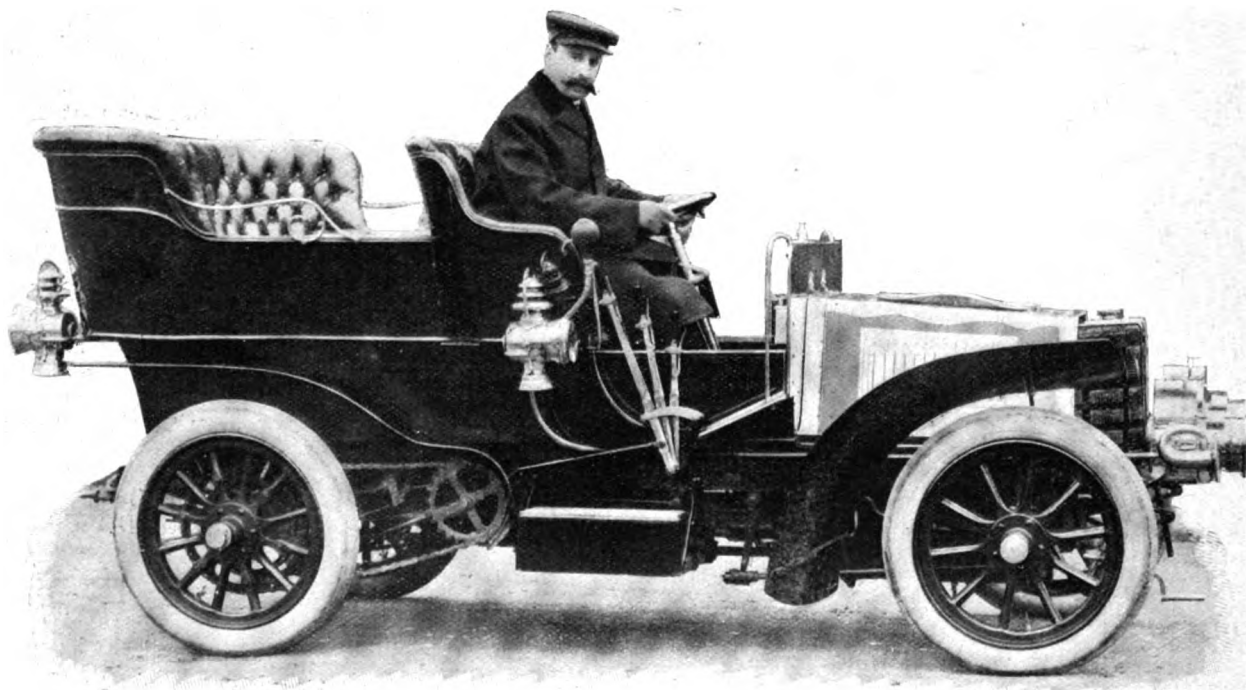
The
Westminster
Lectures.

MODERN innovations are being dealt with by able authorities in a series of Friday afternoon lectures at Caxton Hall, Westminster, the telephone, the traffic problem and the automobile, all being brought to the rays of publicity. Last week Mr. Mervyn O'Gorman was the speaker, and although his

lecture was a complete vindication of the potentialities of the motor-car, it did not strike us as being so successful as was his luminous and bright address on the motor-bicycle at the Automobile Club some weeks ago. There was scarcely that sympathy between the lecture and the animatograph that is essential in a popular lecture, but probably this was the weakness associated with a "first night." More frequent rehearsal will make the lecture—accompanied with some splendid moving pictures—one of the attractive items in the winter syllabus of the Lecture Agency, by whom this course is being organised.

Proposed Trials for Electrical Vehicles.

At the last meeting of the Advisory Committee on Electrical Vehicles of the A.C.G.B.I., it was decided that, in consequence of the pressure of business on the Club officials during the current year in connection with the Gordon Bennett Cup Race, and other contests, trials of electrical carriages shall be held in May, 1904, and that the Executive Committee be requested to reserve that month for the same. No definite programme has as yet been prepared, but the following



Mr. J. B. Joel on his 20-h.p. M.M.C. Car.

recommendations with regard to the main lines of the trials have been arrived at:—There shall be only one class of vehicle, which shall be run over a town route, with an optional long-distance run to test the capacity of the car on a single charge. There are also to be hill-climbing trials, in which speed will be a main factor; an average speed shall be fixed, based upon *the legal limit*. Marks will be deducted for speeds below the normal. Marks will be deducted for all stops other than compulsory ones, and marks will be deducted for every mile of the course which may be unfinished at the end of the day. Routes will be selected for six days for all the cars, and, after examination of the vehicles by the judges, a seventh optional long-distance route shall be selected, for which no marks shall be given, but the cars shall be under observation with a view to issuing a special extra certificate noting the distance, repairs, etc. In order to meet the views of those who wished to have trials extending over a long distance each day, a sub-committee was appointed to consider the question of arranging for quarterly trials for electrical vehicles, on the same lines as those for petrol vehicles, the distance to be from 50 to 100 miles.

British Cars in France.

THE Automobile Club has issued a circular with regard to the position of automobilists wishing to tour in France with their vehicles. Tourists wishing to enter France with a car not of French make (or of French make for which they cannot procure the necessary papers to prove French origin) have to deposit with the Customs authorities an amount equal to 50 francs per 100 kilos for cars weighing over 125 kilos. This matter can be arranged with the A.C.G.B.I. before leaving England. With regard to driving certificates, those issued by the British Club are accepted by the French authorities. An important agreement has now been come to by which "declarations" from British automobile builders will be accepted with the view of granting the "permit of free circulation" on the French roads. Makers in this country should take advantage of this arrangement and send their cars to Arras, near Boulogne, to be examined as types in order to obtain the approval of the French Service des Mines, and thus assist their customers. Full particulars as to the procedure to be adopted in connection with this matter will be supplied by Mr. J. W. Orde, the Administrative Secretary of the Club.

Motor-Car Imports and Exports.

THE returns relating to the British imports and exports of motor-cars and cycles during April are now available. To deal first with the imports, a new record has been established, no less than 588 cars and cycles having been imported into this country last month, the value of the same being returned at £138,566. The value of the "parts thereof" is given as £15,389, so that we get a combined total of £153,955, as compared with £206,296 in March last, and £121,180 (representing 434 cars) in April, 1902. Some of the imports were only of a temporary character, being reshipped to foreign destinations. Thus last month the reshipments comprised twenty-nine vehicles, amounting in value to £7,159, and £1,123 of parts, bringing down the net imports in April to £145,673, as against only £116,420 in the same month a year ago. For the first four months of the year the net imports of motor-cars, cycles, and parts stand at no less than £593,639, or more than double those during the same period of 1902. As regards the exports of automobiles of home manufacture, the

shipments during the past month amounted to 50 vehicles of a value of £21,830. Of parts the exports attained a value of £3,672, making a combined total for April of £25,502, as compared with £19,102 in March last, and £12,102 (representing twenty-nine vehicles) in April, 1902.

Deposits.

THE question of paying deposits when giving orders for automobiles is one that requires serious consideration from intending purchasers. Of course, when a firm is expected to make a car it is only right that it should have some guarantee that delivery will be accepted and the remainder of the purchase money forthcoming; but on the other hand the customer needs protection as well. Hence he would do well to withhold deposits unless substantial security is given. In many cases old and established reputations are probably sufficient, but there is a general feeling growing up that the guarantee of deposits is necessary in all business transactions.

The Fischer Omnibus.

ON Wednesday of last week the Syndicate controlling the Fischer motor-omnibus invited a full complement of passengers to take part in a trial run to Richmond. The route taken on the outward journey was via Oxford Street, Shepherd's Bush, Brentford, Twickenham, and Teddington, the return to town being through Richmond Park and over Hammersmith Bridge. The vehicle, although not fast, travelled the whole journey without a hitch, taking the steep gradients by Richmond Bridge and up the hill most comfortably—being stopped on the latter, and restarting with ease. The principle of the system consists in a combined petrol engine and dynamo—with one motor for each rear wheel and storage battery and controller—the running being most silent and steady. A company is being formed to introduce the 'bus, of which we understand Mr. S. F. Edge is the chairman.

An East Anglian Service.

UNDER the title of the East Anglia Motor Carriers, Ltd., a company is in course of formation which promises to do much for the eastern counties. The headquarters of the venture will be at Ipswich, with depots in London, Bury St. Edmunds, Chelmsford, Norwich, and Peterborough, and encouraging promises of support have been received from some of the largest manufacturers and traders along the routes proposed to be worked. It is intended eventually to run about thirty cars, of which a dozen will be heavy vehicles with a capacity of six tons per car and trailer, and sixteen smaller cars, carrying 1½ tons per car. Two large cars will run between London and Ipswich, a distance of 70 miles, touching at Chelmsford and other places en route; two smaller cars will run from London through Chelmsford to Bury St. Edmunds, a distance of forty-two miles; two cars will run from Bury St. Edmunds to London via Chelmsford, and two from Ipswich, also via Chelmsford. Two cars will run from Ipswich to Norwich, and from Norwich to Ipswich. Four cars will ply between Bury, King's Lynn, and Peterborough, a distance of fifty-five miles. The sixteen smaller cars will be employed in collecting and delivering goods in London, Chelmsford, Ipswich, Norwich, Peterborough, and Bury St. Edmunds. The district is a particularly suitable one for the enterprise, to which all motorists must wish well.

Brakes and Side Slips.

IN another column we give particulars of an accident which happened to Lord Alan Percy at the foot of Kingston Hill. The facts are correct as stated. The back of the car swung round, a wheel striking the kerbstone and breaking, while the passengers, except the driver, were flung out, one going through the window of a draper's shop. The body of the vehicle was wrenched right off, one passenger retaining his position in the seat, and skidding along the ground for some little distance. The body was broken into numerous pieces,

the two back seats being separated, the door also becoming a separate entity. One spring fastening was broken, and all wheels had spokes smashed, but the frame of the vehicle was substantially unhurt, the bonnet and front seats being absolutely uninjured. The spectacle of the wrecked car was altogether unique.

London Police Activity.

METROPOLITAN policemen stationed along the main roads leading out of London were particularly vigilant on Sunday as to the speed of motor-cars. Stretches of road were measured off, and automobiles seen advancing were timed by plain clothes officers, who did not hesitate to stop all cars travelling at what they regarded as beyond the legal speed and to take the names and addresses of the drivers. The police achieved most success, from their point of view, on the High-road, Kensington. The quarter of a mile between the Albert Hall and the De Vere Hotel was kept under observation by several plain clothes men, whose attention was divided between motor-cars and stop watches. Between nine and ten o'clock they found it necessary to interrupt the progress of about fifteen cars and obtain the information which usually precedes a summons. The "bag" would have been larger, perhaps, but for a warning which was issued very early in the morning by the Automobile Club. Members of that organisation were not surprised, therefore, when they reached the Albert Hall, and did not allow their cars to go at full speed over that particular piece of road, but drove with particular care.



Whitechapel Road, London, in 1830.
(Caricature by Aiken, published in "Modern Philosophy," in 1828.)

The Earl of Wemyss on Legislation.

WHILE automobilists generally are awaiting with interest the production by the President of the Local Government Board of his promised Bill affecting them, the Earl of Wemyss has raised, in the House of Lords, the question of their grievances. He has intimated to the Secretary for Scotland his interest in the revision of the regulations now in force in that country with reference to motor-car traffic, and suggests bringing these more in accord with the policy suggested in the resolution submitted to him in November, 1899, by the County Council of Haddington. This declared "that it is inconsistent with sound and enlightened policy in the matter of motor-car traffic to lay down any hard-and-fast rule as to speed, it being ordered and understood that when driving through towns, villages, turning corners, or passing branch roads motor-car drivers shall not exceed the ordinary speed in like circumstances of horse conveyances, and that they shall, further, when passing or meeting any horse-drawn vehicle, slow down, and, if needs be, stop, so as not to frighten the horse or horses drawing the said conveyance; but that, subject to these conditions, a motor driver shall be left free to exercise his own discretion as to speed when the road is clear, on the understanding that the driving be not reckless. For the purpose of identification, a large number shall be attached to the motor, before and behind, and illuminated at night."

On the Road.

BARON BARRETO's letter in our correspondence columns draws attention to the bad manners of many drivers of horses who have too long been accustomed to regard the public roads of the country as a monopoly of their own. In the particular case cited such gross conduct deserves not only censure but punishment, and by giving publicity to matters of this kind Baron Barreto is rendering good service to the Norfolk motorists, of whose Club he is a distinguished leader.

The Gordon Bennett Race.

A MEETING of the Races Committee of the A.C.G.B.I. has been held to consider the protest of the Star Company, with regard to the Eliminating Race, but it was decided that the company had no cause of complaint. The members of the Committee present were Mr. Mark Mayhew (in the chair), Messrs. Alfred F. Bird, S. F. Edge, Staplee Firth, Roger H. Fuller, E. H. Cozens Hardy, J. E. Hutton, C. Johnson, Major Lindsay Lloyd, Captain Bowman Manifold, Messrs. Mervyn O'Gorman, R. E. Phillips; the Hon. C. S. Rolls, and Mr. R. W. Wallace, K.C., with the club secretary in attendance. Mr. Mark Mayhew, L.C.C., will act as pilot in the Gordon Bennett race.

The Specific Gravity of Petrol.

UP to the present Messrs. Carless, Capel and Leonard have maintained the standard quality of their petrol, and all they have sent out has had a specific gravity of .680 to .685 at 60° Fahrenheit. Now, however, the standard quality of their petrol will have a specific gravity of .695 to .700 at 60° Fahrenheit. The change in specific gravity does not represent a change in the quality or efficiency of the spirit, but is due to the firm being compelled to manufacture petrol from a different kind of petroleum. This is owing to a great increase having taken place in the demand for the crude naphtha from which the petrol has hitherto been manufactured, and also to a decrease in its production. The new petrol, sp. gr. .695 to .700, corresponds in its boiling points and other physical characteristics with the old petrol of .680 to .685 sp. gr. The difference in specific gravity is not due to a difference in the volatility of the spirit or in its purity, but to slight differences in its composition. It is said to be as easy to get perfect combustion and maximum efficiency with the new standard petrol as with the old. Messrs. Carless, Capel and Leonard could manufacture petrol of .680 to .685 specific gravity from this new kind of petroleum, but the quality of the product obtained would not correspond nearly so closely with the old standard of .680 to .685 specific gravity as does the new standard, and the price would be considerably higher.

Glasgow to Leeds.

THE first stage of the non-stop run from Glasgow to London, promoted by the Western section of the Scottish Automobile Club, was covered on Wednesday. Out of the twenty-five cars entered, all but three appeared at the starting point, and seven of the nine motor-cycles. The cars which started were:—14-h.p. Chenard-Walcker; 12-h.p. Gladiator; 24-h.p. De Dietrich; two 10-h.p. Lanchesters; two 10-h.p. Wolseleys; two 12-h.p. Sunbeams; 10-h.p. Argyll; 12-h.p. Gardner-Serpollet; 14-h.p. Brooke; 9-h.p. Argyll; 24-h.p. Rochet Schneider; 12-h.p. Georges Richard; 24-h.p. Georges Richard; two 12-h.p. Arrol-Johnstons; 10-h.p. De Dion-Bouton; 12-h.p. Argyll; 6½-h.p. Peugeot; and 24-h.p. F.A.C. The motor-bicycles were two 2½-h.p. Triumphs; 2½-h.p. Quadrant; 2-h.p. Ariel; 2½-h.p. Brown; and two 2½-h.p. Humbers. At Leeds, a great throng of spectators awaited the motorists. The Humber motor-bicycle and the 24-h.p. De Dietrich were the first to put in an appearance, but speed counts for nothing in this trial. All the cars, however, arrived at Leeds, having covered the longest stretch of the journey within the maximum time appointed of 18h. 10min.

Incidents on the Way.

THOUGH he managed to finish the journey, the driver of the Brooke car had a mishap. One motorist found himself storm-bound at Kendal, and went into Leeds by train. Mr. D. Edwards, the driver of a 24-h.p. Georges-Richard car, was the victim of a singular mistake. When near Leeds he found it necessary to turn on a fresh supply of petrol. This, as he supposed, was done; but presently the engine stopped and refused to move. An examination revealed the mystery, and it was found that the cask had contained not petrol, but water. Fortunately a friendly passer-by threw him in a tin of the much-coveted liquid, and once again he was able to pursue his journey, after much valuable time had been lost. One or two drivers lost their way, among them being Mr. J. W. Stocks, who was in the front rank up to Skipton, but who there took a wrong turning, and did not find out his mistake until he was a mile beyond Keighley. The detour cost him something like forty minutes. At Hellfield the police laid a trap, and took the names of five competitors. On arrival at the premises of Mr. Rowland Winn and Messrs. A. Dougill and Company (Limited) in Leeds, the cars were handed over to officials, whose duty it was to see that nothing was repaired, lubricated, or adjusted. On Thursday the start for London was made at 6.30 p.m., and next week we shall publish further particulars of the run.

TO-DAY (Saturday) the Norfolk Automobile Club will visit Bury St. Edmunds and District.

FORTY-FIVE touring cars started from Paris on Wednesday in connection with the Paris-Madrid motor-car race.

THE rights for France and her Colonies in the Parsons Non-Skid have been taken over by the Société Française de l'Antiderapant Parsons, of 9, Rue de Rocroy, Paris.

PRESSURE on our space this week prevents us dealing with the new regulations with regard to the storage of petroleum spirit, just issued by the Home Secretary. We shall, however, give them in our next issue.

THE National Circuit of Belgium, organised by the A.C.B., started on Saturday, forty motor-cars and cycles leaving Brussels for Antwerp. On Sunday the journey was continued to Liege, on Monday to Arlon, and on Tuesday to Namur.

IN the Tottenham Court Road, London, W.C., some large shops and warehouses are being erected with over a hundred feet depth and exits into Alfred Place. One of these has been taken by a motor-car firm for the sale of light and heavy vehicles.

MANY of the daily press have been drawing attention lately to the fact that a large art warehouse in Shaftesbury Avenue, W.C., had been taken for the purposes of a motor depot. This we can confirm, and believe that the chief cars on sale will be Panhards and Mercedes.

CAPTAIN DEASY left the Automobile Club in Piccadilly, W., a few minutes after midnight on Saturday on a 24-h.p. Rochet-Schneider car for a non-stop run to Glasgow. He reached York at 9 a.m. on Sunday morning, Edinburgh at 7.50 p.m., and Glasgow at 9.30 p.m., the non-stop run of 427 miles having occupied 21 hours 20 minutes.

THERE can be no doubt that the manufacture of motor-cars in England will quickly and largely increase, and Sheffield would seem to be particularly well suited for the establishment of manufactories, being the centre of the steel industry. There is a large quantity of available labour, and suitable premises are to be found near the Midland Railway station.

SIR JOHN HIBBERT, who presided at the annual meeting of the County Councils Association on Wednesday, described the President of the Local Government Board as having been "very laggard" with respect to the motor-car question. He was glad to see that a Bill was at last being drawn up to deal with it. The present speed limit was ridiculous, as it was too low for light cars and too high for heavy vehicles.

THE IRISH FORTNIGHT.

WE hear that the English representatives, Messrs. S. F. Edge, Charles Jarrott, and J. W. Stocks, will be quartered near Athy, the first named having taken Castle Rheban House, Athy, from June 7th.

COMPETITORS from Europe and America will have to remember the rule of the road when struggling for supremacy in the forthcoming race. Here we keep to the left and pass on the right; but in France and Germany drivers are accustomed to the right-hand side—a fact which is one of the most difficult thing; English competitors in Continental contests have to remember. As the American experts who will race have had experience on a race track, where the British rule of the left of the road prevails, there will be, fortunately, less difficulty in overcoming the awkwardness which necessarily follows such an alteration from fixed methods; but outside a race track they have been accustomed to the American rule of driving to the right, and it is precisely in this particular that they, in common with the German and French teams, will have to be exceedingly careful.

IN connection with the events of the tour some interesting offers of help have been received. Captain Dyke Acland will act as interpreter in French and German; Sir Coleridge Kennard, Bart., has volunteered as a motor-cycle steward; Mr. R. A. Lucy, F.R.C.S., will be available in case of accidents or emergencies; Mr. W. H. Clay will be a road steward on a 10-h.p. Ryknield car; and among public men who will serve in an official capacity are, Earl Russell, Captain Arthur Hill, M.P., Mr. J. Gretton, M.P., and Mr. W. Carlisle, M.P. Col. Magrath, who was a popular participant in the historic 1,000 miles trial in Great Britain, will also act as a steward on the Athy-Kilcullen section of the Gordon Bennett Cup course.

THE suggestion made last week in the *Journal* with reference to the laying of dust by means of salt water has aroused considerable attention both in Ireland and among borough and county surveyors in England. Mr. G. Ball, the Borough Surveyor of Bexhill, is of the opinion that salt water for street watering purposes is a great advantage over ordinary fresh water, inasmuch as the roads keep moist much longer, and therefore less watering is required.

MR. C. P. REDMOND has written "Beauty Spots in the South East of Ireland," and his pen, with the aid of some capital photographs, has resulted in a very readable volume published by Messrs. C. P. Redmond and Company, at Waterford—where motorists will be well received this year, for is not Mr. W. G. D. Goff, J.P., a resident in the locality? The routes are well planned and much information is given with regard to hotels, etc., which we hope will be as accurate during the Irish Fortnight as it undoubtedly is in an ordinary season. Being designed for those who go by road, the Guide will be far more useful to motorists than many of the books to which they will be introduced in the Emerald Isle.

THAT the Gordon Bennett race will prove of permanent benefit to the country we have never doubted, and proof comes in a discussion at a special meeting of the Carlow County Council. It was decided to authorise the County Surveyor, Mr. Qulton, C.E., to expend such sum of money on the roads in the county as might be granted by the Automobile Club, subject to any order made by the Irish Local Government Board. Mr. Engledow thought as the Club were prepared to spend so much money on the roads it was a great chance for the Council to grant a similar amount and make a thorough work of it by steam rolling and improving the roads generally. It would be an experiment as to how steam rolling the public roads would work in the county. They had now the chance of getting half the amount necessary, and he thought it would be a very good thing

for the Council to add £150 and make a good road which would last for five or six years. In this way they would have four or five miles of road permanently improved. The County Surveyor pointed out that if they set a good example it was very probable that the Kildare County Council would follow in the same line, and ultimately it was unanimously resolved to hire a steam roller for use on that portion of the county roads over which the Gordon Bennett Cup Race will be held, the cost of the same not to exceed £125 (provided the Automobile Club make an equivalent grant towards the improvement of the roads), subject to the sanction of the Local Government Board.

AFTER leaving Killarney many participants in the great tour will visit Tralee, twenty-two miles away, and at the base of the Bantreggan Mountains. It is the largest town in the county of Kerry, and as a result of the popularity of the district as a touring ground, Messrs. Thomas Galvin and Sons, who are leading local merchants, keep a stock of motor spirit.



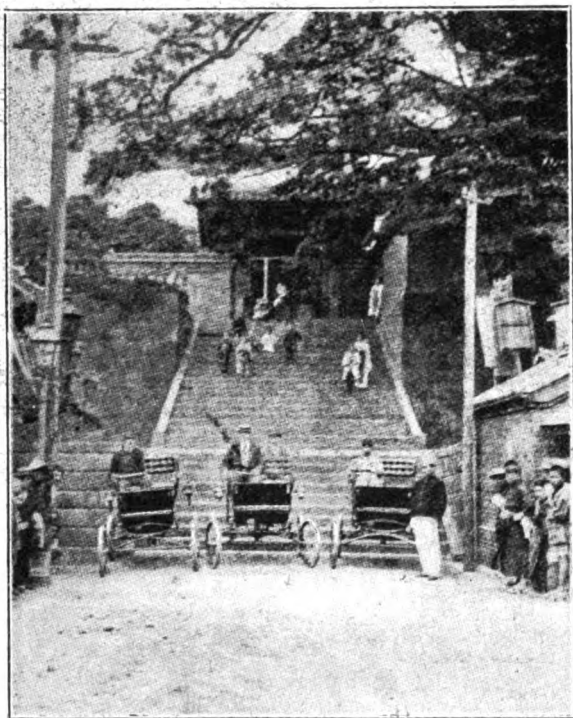
An Interesting Reminiscence.—Messrs. Jarrott & Edge on the Panhard Racer of 1899.

THE Department of Agriculture and Technical Instruction in Ireland have been examining the prospects of motor-car services in the country, and their expert has visited Mayo and Sligo, specially going over the Ballina and Belmullet routes. The Department regards the scheme as one which they would be justified in considering favourably, provided a portion of the capital necessary (say one-fifth, or £1,000) were invested in the undertaking by the locality. The estimate of the expert goes to show that a Ballina-Belmullet scheme, properly worked, should cover expenses and depreciation, and result in a reduction of thirty per cent. to forty per cent. on present carriage rates, and a still higher reduction on passenger fares. The Department would thus be in a position either to consider favourably themselves the idea of supporting a scheme for Ballina and Belmullet, if there was no other agency for doing so, or of bringing it to the notice of those who may be ready to invest capital in such projects. The latter is the course they can adopt under present circumstances, for since Lord Iveagh and Mr. Pirrie, as the Chief Secretary has recently explained, have undertaken to promote motor transit services in Ireland, assistance from public funds is now happily rendered unnecessary. The experts whom Lord Iveagh and Mr. Pirrie have appointed to make preliminary inquiries have seen the Hon. Horace Plunkett, Mr. T. P. Gill, and others, and their attention has been directed to the Ballina and Belmullet scheme, as well as to other parts of the North Mayo and North Sligo project into which the Department had not examined, so that it would appear that we are on the eve of a really great development.

THE PROBLEMS OF TRAFFIC.

NOT the least valuable of the services which the development of automobilism is likely to render the Country is the revival of the prosperity of the old roadside inns, and the resuscitation of the great high roads to the position of importance they held in the early Victorian days. In towns the congestion of traffic will be relieved, and the slow-moving, lumbering locomotion of to-day will be quickened into something like energy. But these problems, and the many associated therewith, can only be solved as the Local and National Authorities recognise their duties and obligation with regard to the highways.

At the outset, we would deprecate piecemeal reform and look with little favour upon the departmental schemes that have been brought forward. These are too restricted to be of practical value; the whole question has become complicated and complex—the tram-car, the motor-bicycle trailer, the railway crossing, the lumbering lengthy timber lorry, the hooded van, and other



Locomotives at the Zotokinn Temple, Yokohama, Japan.

modern innovations having made the situation at once acute and difficult of solution.

For instance, any attempt to raise the speed of motor-cars in towns would be rendered futile unless that of horse-drawn vehicles is considered. The speed of a Navy is controlled by the slowest vessel, and so the rapid progress of the motor vehicle would be restrained by the crawling cab which is supposed to maintain a speed of about six miles an hour. This is a small illustration of the great difficulties in the way. Motor and bicycle tracks have been suggested as capable of carrying the quick traffic, leaving special paths for horse-drawn vehicles and pedestrians. These look well on paper, but their execution would appal our County Councils if they were expected to find the money. Unfortunately it is frequently forgotten that the Act of Parliament governing the highways "in that part of Great Britain called England" was passed in 1835, when railways were curiosities, and people were only just beginning to realise that the locomotion that had done duty in the time of Noah might be superseded. Legislation passed in such a transition age could only be trammelled by narrow views and an incomplete survey of the future. No one then dreamed of the Mono-Rail, the Tube, and the Electric Tram, hurtling through

the streets at twenty miles an hour, and the motor-car even more effectually reducing distance. Developments of locomotion since then should have been followed by legislation as to the highways and street traffic. The passing of the Light Locomotives Act, 1896, made such a course absolutely imperative. But, as usual, shortsightedness prevailed and no regard was paid to the newer conditions that would result. These are becoming apparent; hence the urgency of the problem that now confronts all interested in the regulation of traffic both in urban and in rural districts. Some of the provisions in the Act of 1835 are particularly interesting, and we would suggest that local authorities should be called upon to enforce those relating to the misbehaviour of drivers in obstructing the passage of vehicles—both when drawn by horses or in such circumstances as are referred to by Baron Barreto in another column. In many places roads have been allowed to become narrow lanes owing to the neglect of the local authorities, and next week we shall show how the provisions of the Highways Act have been ignored. So that the demand for a thorough and complete examination of the whole position can be supported by ample evidence as to the need. Sectional proposals will not help the matter, and suggestions for differential treatment in regard to rows of variously moving traffic will not meet the case.

Not to the provision of separate tracks do we look for improvement in the present state of things. All that is required is the adoption and stringent carrying out of a few common-sense notions and wise regulations by which the progress and universal adoption of the automobile should be encouraged instead of hindered. Attention should also be given the extension of tramway tracks. There has been quite a rush in recent years to connect large centres of industry by tramway lines; but this is only a temporary excitement. The motor-car service is coming with cars that can deposit passengers outside their own houses and pick them up from side streets with a regularity that will contribute greatly to success in business. Still the tramway lines are a very tangible flaw in the surface of our streets and highways, and a real danger to the automobiles now running in and about the suburbs of all great towns.

These few considerations show the complications that exist; and how can such a vast topic be dealt with in any narrow spirit? A Commission is required to investigate and experiment? As a rule commissions only question and cross-examine; we should like to see one allowed to spend a substantial amount in the conduct of investigations calculated to ease the strain of the present position. Unfortunately doctrinaires generally make up the composition of such bodies; the experts who have given years of study and the men who are practically engaged in the problems to be inquired into, are left out in the cold or called in to be examined at the invitation of the committee. What is wanted is that heads of the police who deal with the traffic problems of great cities, the County Surveyors who know the dangers that lurk in the village street, the directors of the great parcels companies, the managers of bus companies and others should confer regarding the matter from the national point of view. Such deliberations would be more productive of sound and practicable suggestions than any number of Commissions issuing Blue-Books and doing little else.

MR. C. W. POTTER, of Leeds, has been fined £2 and costs for driving a motor-car on the footpath at Harewood.

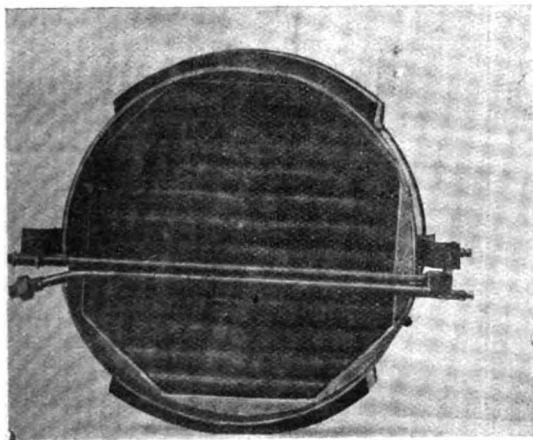
MR. DAVID NUTT, whose publishing house is in the new motor-car thoroughfare of Long Acre, has issued the "Song of Speed," by Mr. W. E. Henley, in book form.

ARRANGEMENTS for the opening of Kew Bridge on Wednesday, the 20th inst., have been completed. The new bridge has a span of 133 ft., with outer arches of 116 ft. span each from the piers. The roadway has a width of 55 ft. On either side are footpaths 10 ft. in width, and the builders in the making of carriage and footpath width have, it is stated, allowed for the growth of traffic, both vehicular and pedestrian, for the next eighty years.

THE STANLEY STEAM CAR.

THE brothers Stanley, who, it will be remembered by old motorists, were the introducers of the steam car now known as the Locomobile, have recently again taken up the construction of steam motor-cars. Their vehicles are now being introduced into this country by Messrs. Joseph Cockshott and Co., Ltd., who exhibited the same at the recent show at the Agricultural Hall. We have already published a brief description together with a general view of the car (see issue of April 4th, p. 98), but as the vehicle comprises a number of special features a more detailed notice may be of interest.

boiler by carelessness in the maintenance of the water level, a fusible plug (see Fig. 4) device of a novel character has been adopted. One end of a small pipe is tapped into the boiler at a point near the bottom of the water space and the other end communicates with the water space at a point a few inches higher. There is a small T in this pipe, which is closed with a plug of fusible metal. In the normal operation of the boiler there is a constant circulation of water through this pipe from its lower to its higher extremity, but if the water level falls below its upper termination the circulation ceases, the water evaporates from the pipe, and the fusible plug, previously kept relatively cool by the water circulation, immediately melts



Figs. 1 and 2.—The Stanley Burner, Showing Covered Bottom.

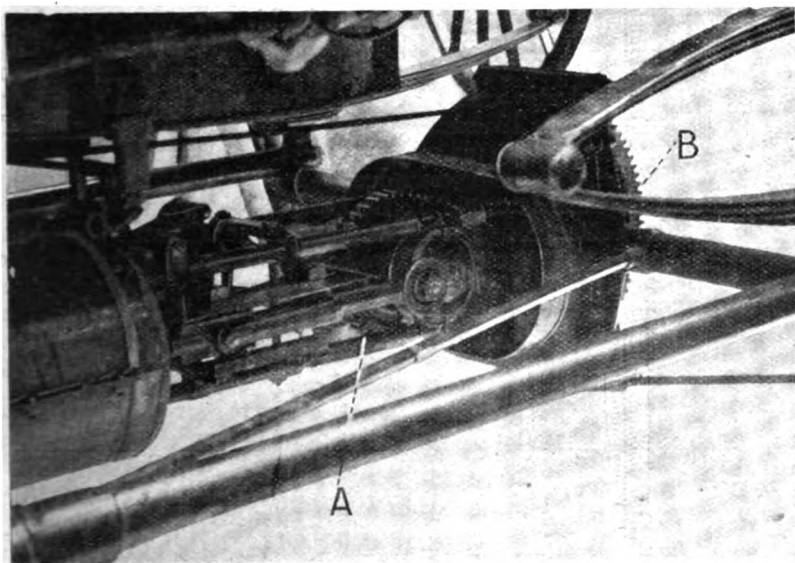


Fig. 3.—The Stanley Transmission.
A, Driving pinion on engine. B, Driven wheel on rear axle.

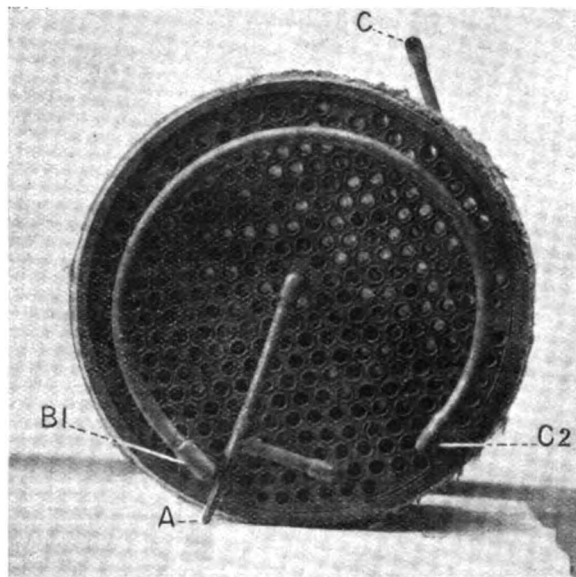


Fig. 4.—End View of Stanley Boiler.
A, Fusible plug which projects through side of burner. B1, Superheating steam pipe. Steam passes from the boiler to B1, thence to C2, up through the boiler and across the top, finally out at C to engine.

Superheated steam is generated by the boiler, a high degree of superheat being obtained without recourse to intensely heated metallic surfaces. The boiler (Fig. 4) consists of a copper shell 14 in. diameter, bound by copper-plated steel wire. As the use of the traditional form of gauge glass is rendered almost prohibitive by the high pressures and degrees of superheat employed, the water glass has been discarded and an automatic indicating float has been adopted which instantly shows by the position of a small index on the right hand side of the driver whether the water level is low, normal, or high. This index can be read by the sense of touch, thus rendering a gauge lamp or mirror superfluous. In order to provide against the burning of the

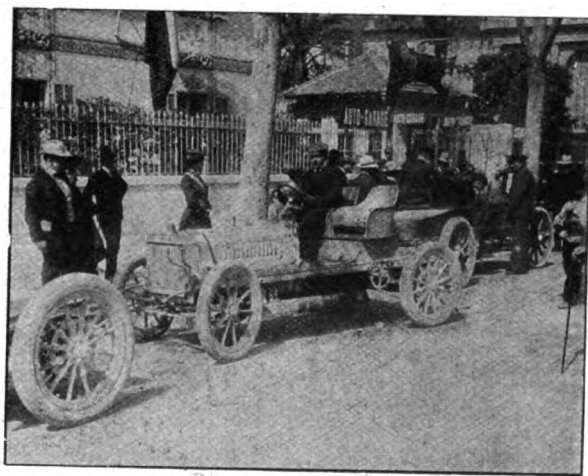
and warns the operator. The plug is accessible and easily replaced without it being necessary to remove the burner. Within easy reach of the driver are the valves controlling the main burner, pilot light, and pump by-pass. The throttle is of the conventional form, but the reverse is controlled by means of a pedal. The burner is made of steel, and is provided with a pilot light. A distinct departure from the ordinary practice is found in the engine and transmission. The engine (Fig. 3) is of the double-cylinder horizontal type, the head being supported by a metal strap from the body, and the crank end being concentrically supported upon the rear axle. The cylinders are 2½ in. diam. by 4 in. stroke. A steel pinion on the crank shaft meshes directly with

a phosphor bronze gear on the differential casing on the rear live axle. It is claimed that the combination of steel pinion and phosphor bronze gear secures the minimum of noise and wear. A detachable copper case completely surrounds the engine, transmission, and differential. The lubrication of the cylinders is effected by means of a mechanically forced-feed lubricator, operated by a ratchet and pawl mechanism. The feed water pump has a variable stroke which can be adjusted to suit the requirements of the boiler. The brake, operated by a pedal, acts upon an extension of the differential casing. The weight of the vehicle with tanks full is 9 cwt. It is claimed that the Stanley car can cover fifteen miles per gallon of petrol under fair conditions, and can travel two miles on each gallon of water, speeds up to thirty miles per hour being attainable. The petrol tank has a capacity of 14 gallons, while 19 gallons of water can be carried. The car has a long wheel base—6 ft. 6 in.—the track being 4 ft. 3 in.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE spring weather, so ardently desired by automobilists, both amateur and professional, seems this year to be heralded in very slowly. It is true that all the signs of spring are with us, and the country roads are beginning to look their best with the fresh green foliage and the new blossoms, giving ever new and refreshing colour to the scene.



M. Juvanon on his Rochet-Schnelder Racer, fitted with Continental Tyres.

All these and many other of Nature's signs annually announce to all and sundry that the spring time has arrived. There is now, however, a new sign by which everyone, great and small, whether living in town or in the country, can say to himself "The spring time has arrived." The airships (not the swallows) have arrived and may be seen veering and tacking in the skies. The same day, the 8th inst., brought out "La Jaune," belonging to the Lebaudy brothers, the sugar refiners, and run by Messrs. Juchmes and Julliot over the plains down the River Seine in the direction of Mantes; and also the Santos-Dumont No. 9, which is, so to speak, a toy balloon, and in which the plucky little Brazilian played all sorts of practical jokes on the legal guardians of the Bois de Boulogne.

It is needless for me to describe at great length the Lebaudy navigable balloon. Suffice it to say that the *aeronef* in question is about 60 yards long by 10 yards wide, contains a volume of some 3,000 cubic yards of gas, and is driven by two propellers which are revolved by a 40-h.p. Mercedes motor. The balloon is somewhat cigar-shaped, and with a *nacelle* suspended by steel ropes from a platform which is rather nearer the stern than the bows of the balloon, if I may be permitted to use these nautical expressions. The weight of the *nacelle* with its machinery and

passengers, ballast, etc., is about two tons. "La Jaune" started out from its shed at Moisson with M. Juchmes and a mechanic named Rey on board, and made straight for Mantes, passing over St. Martin la Garenne, Dennebont, and Gassicourt. Arriving at Mantes the balloon crossed over the town, and rising over the cathedral, turned round towards home. At this point the wind was felt, and it was necessary to increase the revolutions of the motor, which secured the desired result, enabling the balloon to sail against the wind, and to make for the Chateau de Rosmy, where all sorts of evolutions were performed over the grounds. Afterwards the ship was headed for home and arrived safely, after being 1 hour 56 min. in the air, and making the record journey of 37 kilometres (23 miles).

THE Santos-Dumont No. 9 is the smallest navigable balloon that has yet been attempted. It is made to carry only one person, and is propelled by a 3½-h.p. Clément two-cylinder motor, the power of which is transmitted direct to the fan by means of a cone clutch. The fly-wheel is made from a bicycle wheel, with the rim weighted. This curious little ship executed all sorts of difficult manoeuvres with and against the wind, and seemed to float above the Bois de Boulogne like a butterfly, landing here and there, and sailing off again with the greatest ease. Whilst amusing himself with this toy balloon, M. Santos-Dumont is hard at work preparing his No. 7, which is to be a racing balloon, with cubical contents of about 1,500 cubic yards, and which is intended for the competition at the St. Louis Exhibition next year.

THE general meeting of the A.C.F. took place last week, and was in many ways a remarkable meeting, for the note of the whole proceedings was success, financial and social. The Baron Van Zuylen in his presidential speech quoted the words of Levassor in 1893. Levassor was the founder of the great firm of Panhard and Levassor, and in those early days his great difficulty was to find customers for his cars, whereas to-day the difficulty is to find cars for the customers. In 1893 he remarked to Baron Van Zuylen, "Our cars are very good, but they won't sell; nobody wants them, notwithstanding that they run splendidly." In commenting on the marvellous progress that has been made in ten years, the Baron asked himself the question, "To whom is this success due?" and replied to his own question in unqualified terms, "To the Automobile Club of France." "On every side the success of automobilism has followed by leaps and bounds the big races that we have organised. After each of our races and each of our exhibitions thousands of new customers have come to us and brought grist to our mills, so to speak, and enabled us to found the works that at present supply our marvellous cars to the whole world."

I CANNOT help making a special mention of the words of the Baron Van Zuylen, as I have so often in these columns advocated the promotion of road racing under safe limitations in the United Kingdom. The Gordon Bennett race, I have no hesitation in saying, will be followed and be the direct cause of an immense increase in the automobile trade in the British Isles. It will, I hope, open the eyes of the general public and of those more particularly interested in the industrial welfare of our country, and show them that if only they will put aside for a moment their insular prejudice and look the question fairly and squarely in the face, they will find that the encouragement in future of one or two road races annually under proper safeguards in the British Isles will bring about colossal results from the point of view of the national prosperity in this special industrial branch.

THE Brothers Fournier, accompanied by Georges Prade, have just made a journey by motor-car from Paris to Madrid, and Prade writes to the *Auto* in glowing terms, praising not only the roads but the hotels and general reception in Spain, and comparing circumstances generally in that country most favourably with the similar circumstances in Austria last year. The general conclusion to be drawn from the various accounts and the different persons who have tried the roads

seems to lead up to the fact that the Spanish roads have been very much maligned, and that the race seems to promise a colossal success from every point of view.

M. HUET, the General Commissaire of the Paris-Madrid race, has sent a letter to all competitors, from which I take the following:—The different formalities of weighing-in, marking, custom-house, etc., will commence on the 19th inst. in the Tuileries Gardens, in Paris, at the Place de la Concorde entrance, and the cars must present themselves in the following order:—

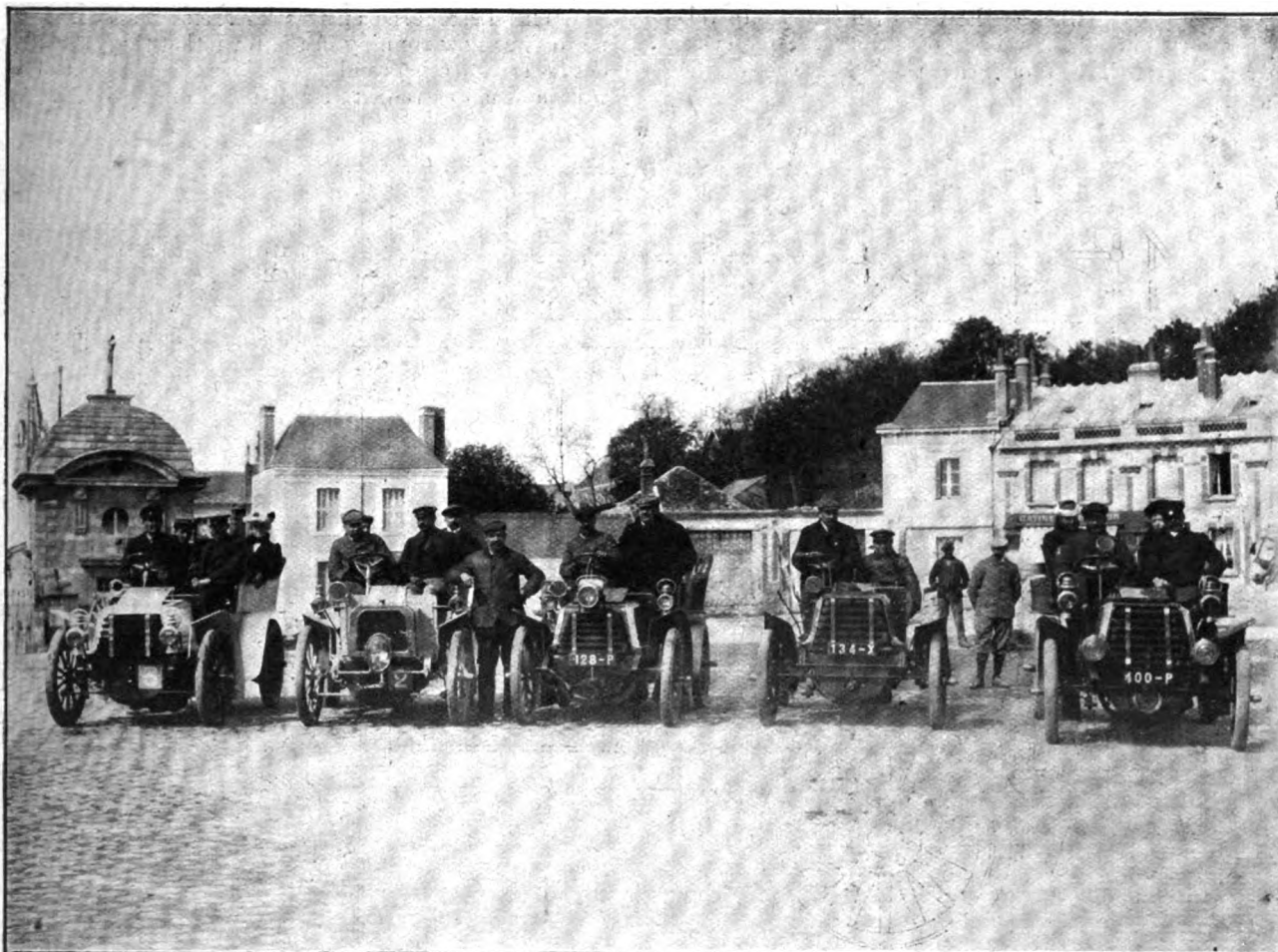
May 19th, from 9 till noon	..	..	Nos.	1 to 30
from 2 to 5	..	..	..	31 to 75
May 20th, from 9 till noon	..	..	..	76 to 105
from 2 to 5	..	..	..	106 to 150

who is more than twenty-four hours in making the journey from Paris to Bordeaux will be disqualified for the remainder of the race.

For the Paris-Madrid race the Decauville Company have built four cars of 45-h.p. They have each four cylinders and three speeds, and will be driven respectively by Captain Genty and Messrs. Thery, Mestayer, and Uhlmann.

Owing to the date clashing with the Circuit des Ardennes, the Automobile Club de Rhone has postponed its kilometre race at Aix-les-Bains to the 26th June, and its speed contest to the 27th June.

THE Wolseley Company, which, it will be remembered, was



The Fleet of Brouhot Cars which Competed in the Recent Reliability Trials of the A.C. de Touraine. (See issue April 25th, page 157.)

[La France Automobile.

May 21st, from 9 till noon	...	..	..	151 to 180
from 2 to 5	..	..	..	181 to 225
May 22nd, from 9 till noon	..	..	..	226 to 255
from 2 to 5	..	..	..	256 to 300

The driver of each car must be present at the weighing-in, and must sign a declaration to be made to the Spanish Custom Houses. He must bring with him: (1) A sufficient sum to meet the Custom House duties for Spain—that is to say, £12 for motor-cars, and £2 8s. for motor-cycles; (2) the sum of 10 fr. (8s.) for a control box; (3) his *permis de conduire* and receipt for the declaration of his motor-car, which must be transmitted to the Commissary of Police, who will also be present in the Tuileries Gardens. As to the method of starting the cars, it has been decided to send them off at minute intervals—first, the heavy and light cars in order of entry; second, the voiturettes, ditto; and third, the motor-cycles in pairs and in order of entry. Any competitor

one of the two English firms to exhibit their cars at the last Paris Salon, have now gone a step further in their attempt to open up a trade in Wolseley cars in France by establishing a depot in the Rue Pergolese, Paris, under the direction of M. G. de la Neziere.

THE Automobile Club du Gard, of Nimes, is organising an automobile fete to extend from June 12th to 15th. On the 13th there will be a hill-climbing competition on Mont Aigoual, and on the 14th a series of kilometre trials on the Boulevard de la Republique, Nimes.

So far, 46 heavy cars, 14 light cars, 7 voiturettes, and 22 motor-cycles have been entered for the Circuit des Ardennes, which will be held on June 20th and 21st. The last date for entries is the 30th inst.

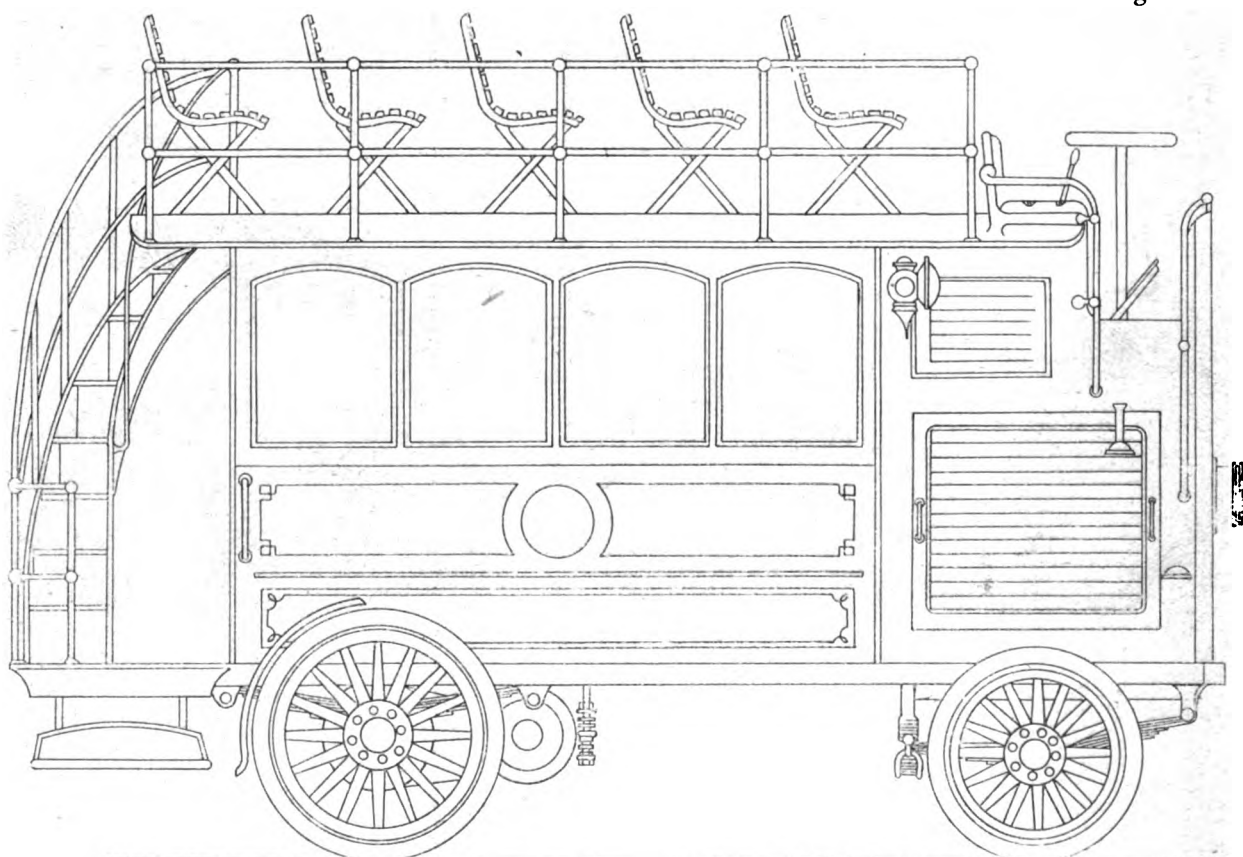
DOCTORS AND MOTOR-CARS.

NOW that the fad stage of the bicycle is past, thousands of persons still make use of the machine in a sane, conservative and useful way, because there is in it an inherent degree of utility. The bicycle has survived because it has been proved to be an easy, cheap, and pleasant agent for the transportation of a single passenger. As it has been with the bicycle, so must it be with the motor-car. It must stand or fall according to the measure of its utility. If it were to take its place merely as a vehicle of pleasure it would have its little day and would go the way of all fads. If it were to retain the form of a complicated and fragile vehicle, requiring the constant attention of the expert and the repairer, then its use would necessarily be limited to those who either possess the mechanical ability or the wealth necessary to take care of such a luxury. As a vehicle of utility the motor-car has already taken such a prominent place as to make its future assured.

The qualities which recommend the motor-car to the physician are those of endurance, comfort in travelling and moderate expense of operating. In addition to these merits there should be moderate first cost, simplicity, strength, and durability. As to the question of first cost, there should certainly be no objection to paying £200, more or less, for a vehicle, provided it be one that will last a reasonable length of time and not be a constant source of annoyance from breakages and expense for repairs. At the present state of development a physician may find in the market cars which will answer his purpose, and it is folly to wait until they "get cheaper" or attain nearer to perfection.

MR. CHAS. E. MILLER, of Reade Street, New York, has sent us a copy of his latest catalogue of motor-car and cycle accessories, which contains practically everything, from a complete car to a bolt.

THE Eastbourne authorities are so well satisfied with the motor-bus now running in the town that they are about to give out orders for others and to consider the adoption of motor dust vans and motor vehicles for street cleansing work.



The 20-h.p. Fischer Combination Petrol-Electric Omnibus built for the London General Omnibus Company. (See page 209.)

Coming to the point as to the use of motor-cars by the public in general and by the medical profession in particular, it is safe to say, remarks Dr. Jas. A. Mallock, in the "Horseless Age," that such general use will surely come about, but it must be preceded by a further development of the motor-car itself. There is no class of men who are watching with keener interest the progress of the automobile than the physicians of the country. No class of men are more dependent on individual means of locomotion. Almost every physician in the land must keep one or more horses, and upon the mileage of these horses largely depends the professional income. The average doctor spends considerably more time in travel than he does at the bedside of his patients. Many physicians, especially in the country, are liable at any time to be called on to drive fifty or sixty miles a day, which travel is a good day's work in itself. To most persons driving is a pleasure; to doctors it is hard and monotonous work.

MR. J. A. W. RATTY, of Duke Street, Henley-on-Thames, is a local dealer in petrol, and will be willing to help motorists during Henley week, which, unfortunately, clashes with the Irish Fortnight.

THE Central Motor Company, Limited, have moved from Tottenham Street to commodious premises near King's Cross Station, at 124, Euston Road, London. Mr. W. C. Birney, the managing director, has a competent staff in the repairing and other departments.

THE Automobile Club of Minneapolis is taking a firm stand with regard to reckless driving, a motion having been passed providing that any Club member who is known to have been guilty of driving at such a speed as to endanger life or limb shall be reported to the secretary of the Club. Upon the second complaint the matter shall be brought before the governors, and a third complaint shall be cause for the expulsion of the offender.

HERE AND THERE.

MESSRS. HUMBER, LIMITED, are bringing out a new 12-h.p. three-cylinder car.

LORD CARNARVON has just been elected a member of the French Automobile Club.

MESSRS. T. CROSS AND COMPANY, of the Mortfield Bleach Works, Bolton, employ a motor-wagon for the conveyance of cloth from their works to Manchester.

In the House of Commons, Mr. J. W. Phillips has presented a petition from Pembrokeshire County Council in favour of adequate taxation of motor-cars and cycles used for the purpose of pleasure only.

THE mechanical engineering department of the University of Illinois is conducting a series of tests upon a Packard petrol motor-car. From these tests the mechanical and commercial efficiency of the car will be determined.

WE recently had an opportunity, at the depot of the British Automobile Commercial Syndicate, of inspecting a 12-h.p. Clement car, fitted with a special body known as the Shrewsbury phaeton, designed and built by Messrs. J. Rothschild and Fils, Ltd. We give an illustration of the vehicle herewith, and may

MR. E. MIDGLEY has been recommended for appointment as an officer in the Motor Volunteer Corps.

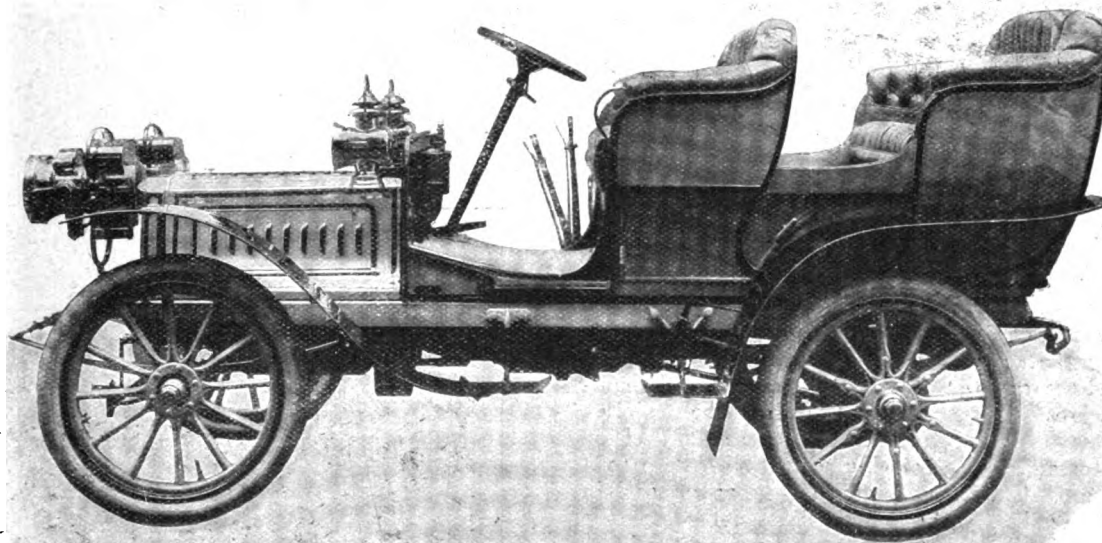
THE Daimler Motoren Gesellschaft of Cannstatt has issued a notice that it is intended to prosecute all infringers of its patents relating to honeycomb radiators.

LORD HASTINGS, Sir Forrest Fulton, the Hon. Ailwyn Fellowes, M.P., and the Hon. Louis Johnstone have lately ordered cars through Messrs. Mann and Egerton.

THE Kreiger Electric Carriage Syndicate, Limited, has been registered with a capital of £30,000, to carry on the business of manufacturers of and dealers in motor-cars, etc. There will be no initial public issue.

THE Carlton Motor Company, of Cricklewood, have just opened a depot for their motor cycles, engines, and carburettors, at 27, Endell Street, Long Acre, W.C. Arrangements are also being made for the repair of motor cycles.

THE third of the series of engineering conferences organised by the Institution of Civil Engineers has been arranged for June 17th, 18th and 19th, at Westminster. The proceedings will be inaugurated on June 16th by the delivery of the "James Forrest" lecture by Mr. W. H. Maw, on the subject of "Some Unsolved Problems in Engineering," while among the



The 12-h.p. Clement Car, with Special Shrewsbury Phaeton Body.

mention that the principal feature is the novel way of entering to the rear seats. The left front seat is so connected by sliding joints to the front half of the lower panel, which acts as a door to the rear seats, that by pulling open the latter the front seat is swung round, thus giving the rear passengers access directly from the footpath, without the necessity of stepping into the roadway. The body of this fine vehicle is finished in brilliant chrome yellow, with black mouldings, the wheels and frame being similarly treated and picked out in black. The upholstery, which is of the most luxurious description, is in buttoned tan morocco.

DR. P. DVORKOVITZ has been lecturing on the "Petroleum Fields of the Far East," which now include those of Japan, Java, Borneo, and Sumatra. All those four fields have during the last four years developed to a very large extent, and last year the latter-mentioned field alone produced no less than 400,000 tons. The total production of the fields of the Far East was about 925,000 tons, which really came to about 5 per cent. of the world's yearly output, but the present progress of the fields show that in the near future they are destined to play an important part as oil centres.

topics to be discussed are the following:—"The Use of Petrol Motors for Locomotion" and "Applications of Electricity to Driving Carriages in Towns."

AN association called the Electric Automobile Club has just been formed at Buffalo, N.Y., for the storage of electric vehicles. The articles of incorporation state the purposes of the Club to be "the delivery of automobiles from a central station, where they will be kept charged and stored, to the residences of private owners of such automobiles; the repairing of electric carriages, and to keep and maintain electric carriages for hire, etc."

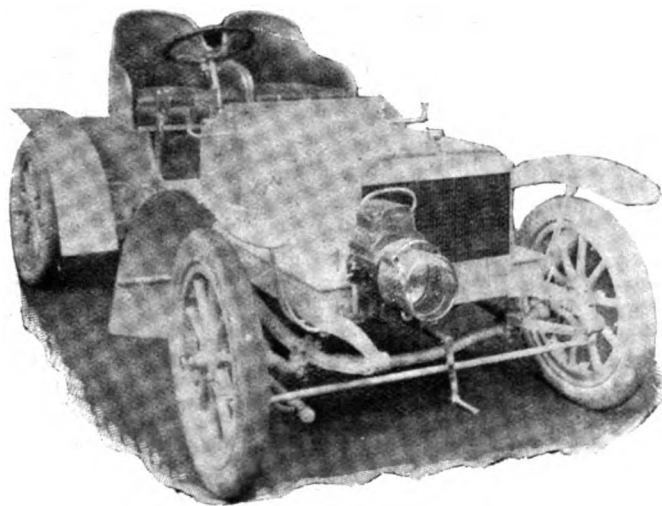
THE assistance of the Institute of British Carriage Manufacturers was recently obtained by Mr. Sanderson, coach builder, of Newcastle-on-Tyne, in order to obtain a reversal of a County Court judgment, which decided that he must bear the loss of injury to a dog-cart lent by him and damaged by the servant of one of his customers. The Council of the Institute, realising that the case was one which would establish a precedent detrimental to the interests of the trade, decided to co-operate in the proposed Appeal to the Divisional Court. This was successful, and the decision of the County Court Judge was reversed, therefore showing that customers are liable for damage caused by their servants.

A NEW list of agents for Pratt's motor spirit has been issued by the Anglo-American Oil Co., Limited.

MESSRS. TURGAN, FOY, AND CO. are building three steam omnibuses for a public service about to be started at Saas, Bohemia.

MR. W. F. THOMAS, of Inkerman St., Vauxhall, Birmingham, is putting on the market a new 10-h.p. double-cylinder car with a novel friction transmission gear.

MOTORIA, LIMITED, has been registered with a capital of £1,000 to acquire the business of an exhibitor and salesman of



The New 15-h.p. Brooke Light Car. (See issue April 18th, page 146.)

motor-cars carried on by Mr. F. Jessett. The registered office is at 2, Staple's Inn, W.C.

THE difficulty between the German Automobile Club and the Cannstatt-Daimler Company has not yet been settled, and there seems no immediate likelihood of a compromise. The whole trouble lies around the question of admitting professional chauffeurs or mechanics into the German Club, and the majority of the members at a general meeting have backed up the decision of the executive committee in refusing to admit Werner as a member of the Club. They have made a counter-proposal in suggesting that Mr. Foxhall Keene should pilot a Mercedes in the Gordon Bennett Cup in place of Werner. The Cannstatt-Daimler Company replied that Werner is their most skilled driver, and that they will not allow any Mercedes machine to run in the international race unless he steers one of them, as it would be risking a defeat to bar them from the services of their most skilled driver. Both the French and Austrian Clubs admit technical members or mechanics for the purposes of racing, although they have no power to vote, and none of the social privileges; but the German Club remains obdurate, and will not even make this concession, which seems to be a regrettable, unsportsmanlike position.

IN order to prove to the municipal authorities that the regulation which forbids motor-cars to exceed a speed of 12 kilometres an hour in Paris and the Bois de Boulogne is an unreasonable one, and that the limit might be considerably raised without the slightest danger, the French Automobile Club on Tuesday organised an excursion through the streets of Paris to show what can be accomplished by skilled motorists when driving at a high rate of speed. As those who had been invited arrived they were placed in the cars, which went off at intervals. The experiments were considered entirely satisfactory, and to have clearly demonstrated that motor-cars can very safely be manipulated in crowded thoroughfares. The experiments were continued in the afternoon in the Bois de Boulogne, and some novel tests were made. Baron Henri de Rothschild brought a 70-h.p. car, travelling at 50 miles an hour, to a standstill in about 40 yards, and an 8-h.p. car, going 20 miles an hour, was pulled up in 8½ yards.

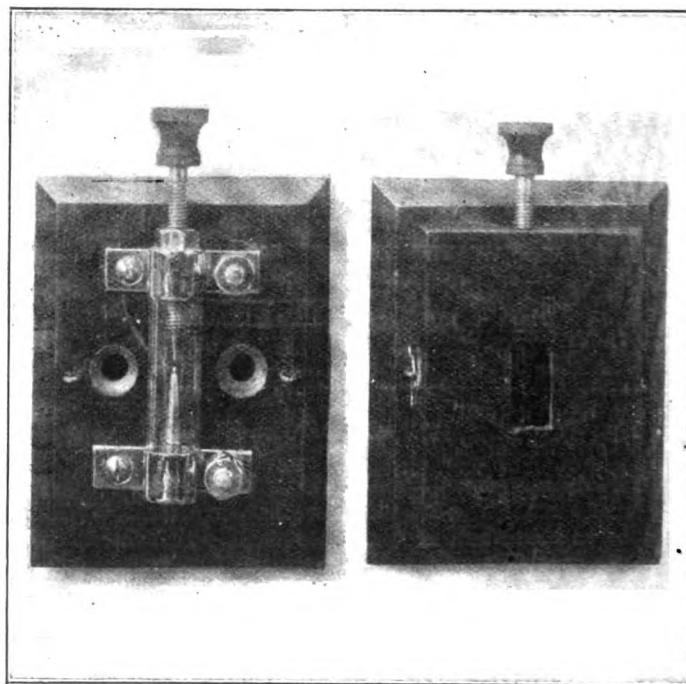
THE King was a spectator of the races at Kempton Park, travelling to the course from London by motor-car.

MR. POTTER PALMER, of Chicago, has purchased a 60-h.p. Mercedes, to be delivered next month in Paris. Mr. Palmer is arranging for a European tour in his new car.

THE South Wales and Monmouthshire Automobile Club is to have a run to-day (Saturday) to Tintern. On May 23rd they go to Brecon, where they will be entertained to luncheon at the Castle Hotel by Captain Hughes Morgan, who is himself an ardent motorist.

THE Naas No. 1 Rural District Council has adopted a resolution protesting against the high rate of speed of motor-cars, and calling on the Local Government Board to bring in regulations so that cars might be numbered for purposes of identification. This is in consequence of the excessive speed recently indulged in by motorists in the district of the Gordon Bennett race course.

IN connection with the sparking plug "discovery" Mr. R. A. Glindon has sent for trial a specimen of the "Intensicator" he has recently put on the market. As will be seen from the accompanying illustration, the device is adapted to be fixed to the dashboard or any convenient part of a motor-car for intensifying the spark, and also indicating whether the electric ignition of an internal combustion motor is working correctly. When placed on the dash, those in charge of the car have always in sight the means of instantly localising the cause of almost any failure in the ignition, such as—(1) short circuit or leakage, (2) damaged sparking plug, (3) faulty contact, (4) unsuitable carburation, etc. It also prevents the batteries being run down without the driver's knowledge, for as soon as they are getting



low, the spark in the "Intensicator" becomes weak and intermittent. The points of the "Intensicator," which are enclosed in a glass tube, are platinum tipped, so that they cannot cause failure through corrosion. After having screwed the "Intensicator" to the dashboard or other convenient part of the car, where it can be easily seen by the driver, the wire conveying the high tension current from the coil to the sparking plug is to be connected, first from the coil to one terminal of the device, and then by means of an extra length of wire connect the other terminal of the "Intensicator" to the sparking plug. The gap can be adjusted by means of the vulcanite handle projecting at the top. The device is neatly finished and can be quickly fitted on any car.

MOTOR-CYCLING NEWS.

THE police in Belfast have been demanding the names and occupations of all persons using motor-cycles, and the Irish Attorney-General has informed Mr. Sloan, M.P., of the reason. Complaints have been made that motor-cycles were being driven at an excessive speed through the streets, and that the riders refused to stop when requested to do so. The police have accordingly taken the names of persons using these cycles in order to supply them with copies of the regulations issued by the Local Government Board on the subject.

THE hill climb arranged by the Irish Motor-Cycle Union to take place at Glenamuck Hill, about eight miles from Dublin, on Saturday, came to a sudden ending owing to the interposition of the Royal Irish Constabulary. The course was well lined with spectators, and two machines had made the ascent when the police interfered. At the top of the hill someone had drawn a trap completely across the road, just round the bend, and the competitors being unable to see this until over the mark, failed to check their speed completely, with the result that they collided with one another and the obstructing trap.

WE understand that Mr. A. Wright, who rode an Ormonde motor-bicycle successfully throughout the reliability trials last year, will ride one of the machines of this make in the Paris-Madrid race.

THREE motor-cycle races were included in the sports meeting held on Saturday last by the Midland Cycling and Athletic Club at the Aston Villa grounds. The rain which fell in the morning had the effect of making the track somewhat slippery, but, in spite of these unfavourable conditions, some interesting contests took place. A three miles motor bicycle handicap (engines not exceeding 2-h.p.) resulted as follows:—Heat winners: E. H. Humphreys, Bert Yates, W. L. Cook (45 sec.). Final: 1, Bert Yates; 2, W. L. Cook; 3, Humphreys. Time, 6min. 16sec. The one mile motor bicycle (not over 3-h.p.) time trials handicap brought out sixteen competitors. Owing to the greasy condition of the track there were two or three spills, resulting, happily, in no injury to the riders. The winner, W. W. Kennedy, who had a start of 8sec., covered the mile in 1min. 26 2-5sec. Martin and Coleman also gave creditable exhibitions. Each competitor was started separately from a mark about 80 yards behind scratch, the time being recorded from the instant the line was crossed. The winners of the heats in the five-mile motor-bicycle open handicap were Harry Martin, Bert Yates, Frank Arthur (50 sec.); A. E. Colman (35 sec.); S. Wright; T. H. Tessier (20 sec.); N. H. Burdin (40 sec.). In the final Yates and Martin started exceedingly well, but, to the great disappointment of all, both were compelled to drop out consequent upon mishaps to their machines. Wright maintained a remarkable pace and won in 6 min. 58 1-5 sec., Tessier being second and Coleman third.

MR. F. STRAIGHT has been appointed secretary of the Auto-Cycle Club, of which Mr. R. W. Wallace, K.C., is president, and Mr. R. Todd chairman.

At the Canning Town track, on Saturday, G. A. Barnes made an attempt on the hour motor-bicycle record from a standing start. From the first mile he commenced to beat previous times. His first mile was ridden in 1 min. 24 3-5 sec., which beats Martin's by 1-5 sec. In the second and third miles Rigal's figures were eclipsed, and from the fourth mile to the end of his ride Barnes beat F. W. Chase's records. Owing, however, to the rain, Barnes was compelled to retire after he had completed 27 miles in 31 min. 55 sec. In the half-hour Barnes covered 25 miles 690 yards. Ten miles were ridden in 11 min. 58 1-5 sec., 20 miles in 23 min. 40 sec., and 25 miles in 29 min. 33 sec.

CAPTAIN RUTHVEN, D.S.O., Messrs. O'Gorman, Sharpe, Basil

Joy, and F. Straight have been appointed a sub-committee of the Auto-Cycle Club upon matters in connection with the Irish Fortnight.

THE pastime of motor-cycling is making rapid headway in Austria, being fostered by the various trials and competitions that are being organised. On the 21st inst. the motor-bicycle section of the Austrian Touring Club will hold a meeting on the Prater track in Vienna, when races of one, ten, and a hundred kilometres will be run off. The Styrian Automobile Club is also organising a 100 kilometre road race for motor-bicycles; it will be run off on the 24th inst. on the Gratz-Trieste road, and will be followed by a hill-climbing trial.

THE Southampton County Motor Club held a run to Bournemouth on Saturday, the only mishap being a solitary puncture. The Club now numbers thirty members, and to-day's



run is to Andover, via Winchester, and home via Romsey. Our illustration is from a photograph taken on the Beaulieu and Lymington road, and depicts a scene on one of the Club's recent runs.

THE joint committee appointed by the motor-cycle trade and by the Auto-Cycle Club for the purpose of organising the trials of motor-cycles in August next, at a meeting held at the Automobile Club, decided that the trial fortnight shall extend from Monday, August 10th, to Saturday, the 22nd. The first day will be spent in assembling, checking and marking the machines at the Crystal Palace. The next four days, from Tuesday to Friday, will be devoted to daily runs of about 100 miles. No programme is arranged for the Saturday and Sunday, but the daily trials will commence again on the Monday and extend to the Friday. One day will be devoted to a long run, so as to bring the total mileage to about 1,000. On the final Saturday a race meeting will be held at the Palace, the first event being a speed contest for all machines taking part in the trials. The previously arranged standard of 3-h.p. was, after considerable discussion, abandoned, and the new method of classification by weight advocated by the Auto-Cycle Club adopted. A class will be included in the trials for private owners, who must be either members of the Auto-Cycle Club, or be introduced by a member, and who must not be connected, nor be about to be connected, with the trade.

At the North Ormesby and Middlesbrough Cycling Club sports on Saturday last A. A. Chase and C. F. Barden decided three matches on motor-cycles for £50. Chase won, but Barden's cycle went wrong, and he had to use a strange machine. Chase won the mile race in 2 min. 1-5 sec., and the two miles in 4 min. 2 1-5 sec. The five-mile event was won by Barden in 10 min. 49 4-5 sec.

CORRESPONDENCE.

NUMBERING PROPOSALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice that Earl Russell, after opposing the Bill introduced by Mr. Scott Montagu for numbering vehicles, has introduced one himself which provides for numbering and also for the drivers of cars being required to have certificates. So that he provides in his Bill what he professes to consider objectionable in Mr. Montagu's, and provides another serious obstacle to motoring in addition. Now I trust that all motor men who have any interest in anything except racing will do all they can to oppose the latter clause. No doubt to the men of large means who possess powerful and fast cars and a craze for speed, certificates are no disadvantage. At least, they do not think they will be. They do not care much what they spend on them, and of course drive themselves or only exceedingly skilled persons drive them. Consequently there is no inconvenience in the matter. On the other hand, as this type of car is the one that offends the public, of course its occupants wish to be recognised as little as possible. On the other hand, to people who require to use cars in the way that horses are used for ordinary daily work it is a very serious disadvantage indeed. Every person who for five minutes is going to touch the wheel even to take his car round from one door to another is to go to a private track, stay there till he has learnt to drive, and then presumably go to London to get a certificate. Further, it will naturally place the position of chauffeur in the hands of a closed profession, with of course a great increase in wages. This is a very serious thing to a comparatively poor man and a tremendous handicap to the use of motors of any kind for trade purposes. In fact, a man would be a fool who bought a motor van which could only be used at the will of a small body of certificated men, who might strike for unlimited wages at any moment, when he can get horses and carts, which can be driven by anyone.

On the other hand, there has never been shown to be the very slightest necessity for certificates at all. No accident that I know of would have been prevented by their use. One has just happened in Kingston. Would that driver have been refused a certificate? Of course not.

There is the further consideration of how it is to be enforced. Well, the only apparent way is for any policeman to be able to stop a car at any time and see the certificates. So that anyone who did not care about motors and had any control of the police would have every car stopped every time it passed a policeman for its driver's certificate to be examined. Jolly riding it would be on a nice cold day with a lot of rain and one's gloves to get off to reach into one's pocket every time, wouldn't it?

As to numbering, it is obvious that it is only of real disadvantage to those who do not wish to be recognised because they are ashamed of what they do. Consequently it is clear that as from the special circumstances motor men cannot be recognised like other drivers on the road, Parliament will take some means to have them recognised. So it is not much use bothering about whether we like it or not, and we had better make the best of it; but to add restrictions to free use of the roads is absurd.—Yours truly,

F. STRICKLAND.

THE IRISH FORTNIGHT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the supply of petrol in Ireland during the Gordon Bennett race and tour, I feel sure that purveyors of petrol in that country do not in the least sufficiently realise the enormous demand that will be made upon them. From my previous experiences of Ireland I know that it is impossible to obtain petrol in any quantities except in Dublin, and unless the wholesale houses make very serious preparations there will be a petrol famine. I believe that on a very low estimate there will be at least 500 automobiles imported into Ireland during the Irish tour, and I believe that the consumption of these cars will amount at least to 250 tons of petrol, or approximately 60,000 gallons. Taking my own case alone, as I intend driving a 60-h.p. Mercedes, I expect that my consumption of petrol will amount to between two and three hundred gallons.

I think it would very much facilitate the arrangements of those intending to tour in Ireland during this period if the wholesale purveyors of petrol would make a statement as to where they propose to have their depots, and exactly how much spirit they will have at each depot. We shall then be able to let them know how much we shall probably require, and thus avoid the terrible calamity of a petrol famine, which will certainly happen unless the most elaborate and careful preparations are made to deal with it.—Yours faithfully,

J. ERNEST HUTTON.

[In corroboration of Mr. Hutton's view we may mention that Mr. C. Cordingley will be in Ireland at least three weeks with his Star racer and his 40-h.p. Mercedes. His requirements will probably amount to between 600 and 700 gallons of petrol.—Ed. M. C. J.]

THE ABOLITION OF CHANGE-SPEED GEARING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The idea suggested by Mr. M. L. Vealey for a compressed air

driven car is not new, although, in my opinion, it is one that would well repay any firm to experiment with. I am chief draughtsman to one of the leading motor-car builders in Great Britain, and some time ago designed a car on these lines; my directors not seeing their way to take up the suggestion, I did not feel justified, owing to my position, in taking any further steps in the matter.

There are many points in favour of the air engine; but economy in lubricating oil is not one of them. Mr. Vealey must bear in mind the petrol engine has still to be lubricated under very much the same conditions. The chief advantages are economy in wear and tear, easy control, having the use of the reverse as a brake, and being able to reserve power for hill climbing.—Yours faithfully,

RELIABILITY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We notice under this heading in your issue of the 9th inst. that your correspondent, Mr. M. L. Vealey, does not believe in sliding gears at all, on the plea that after a certain period of use by an amateur they are stripped, and generally damaged. We would point out that this is not the case by any means, and it seems a pity that such an idea should prevail concerning the Panhard type of gears. The gears on the 7-h.p. car that we supplied to the Automobile Club are not damaged in any way, notwithstanding the fact that forty-five novices have learned to drive in this car. We think this will show your correspondent that a good sliding gear is manufactured.—Yours faithfully,

THE STAR ENGINEERING CO.

HIGH-SPEED TREMBLER COILS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to "One Tired of Adjusting the Trembler," I may say that I have driven a De Dion for nearly three years and was also tired of adjusting the trembler. I bought an Auto-trembler from Messrs. Riches, and inserted in the present wiring of my primary circuit. I then screwed up the platinum-tipped screw below the trembler so as to make good contact. Result: No misfires at any speed, and I am inclined to think I get a better explosion. Since then I have exchanged my trembler plate for a pear-shaped "Nil Melior" contact maker, not of necessity, but because my plate was worn out. I shall be pleased to show my arrangements to your correspondent if he wishes it. The Auto-tremblers are fine.—Yours truly,

G. WASHINGTON ISAAC.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If you will be kind enough to put "One Tired of Adjusting the Trembler" into communication with me, I shall be pleased to tell him of a little addition, costing 30s., which will convert the De Dion mechanical trembler into a high-speed electric trembling ignition without having to discard the existing induction coil or the contact breaker. I am delighted with the effect of this little affair on my 8-h.p. De Dion, and find that the power of the engine is distinctly increased. I now have no trouble at all to start the engine. Your correspondent would be pleased with the device, which is quite small.—Yours faithfully,

N. J. ASTLE.

[We believe Mr. Astle refers to the "Auto-trembler" mentioned in the preceding two letters.]

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Like your correspondent who is "tired of adjusting the trembler," at one time I could have subscribed myself in the same fashion.

But four months ago I had fitted on the primary circuit an "Auto-trembler," and though using my 8-h.p. De Dion car daily, and very frequently during the night, I have not the slightest trouble. The contact screw can be put well forward to make practically a positive contact—without a tremble—and though put to the severest test of stopping and starting thirty or forty times a day, it is very unusual to have to pull over the starting handle, even a second time. Misfires when running, due to cleaning and attention to the ignition, are of rare occurrence.

I have fitted the neat little "Auto-trembler" to the dashboard at the side of the water tank. I may add, I first tried a high-speed coil, but found it markedly slowed the engine, and consequently lost power.—Yours faithfully,

JOHN McCLEYMONT, M.D.

THE QUARTERLY 100-MILE TRIAL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see that Mr. Cohen takes exception to the note appended to my report on the running of the 10-h.p. Chenard-Walcker car in the Quarterly 100-Miles Trial. I did not in any way suggest that the car should have been driven faster, but I certainly consider that the rules were broken by the stopping of the engine on every possible occasion. I told Mr. Cohen's representative that to earn a non-stop certificate it was necessary for the whole distance to be run without either the engine or road wheels being stopped except, in the case of the latter, for traffic. In spite of this

the engine was at rest for at least 25 per cent. of the total running time. I think, therefore, you will see that my note was only fair comment; and, indeed, was a necessary addendum to my report to the Club committee.—
Yours faithfully,

ERNEST DE WILTON.

THE MANNERS OF HORSE DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Yesterday (Sunday) I witnessed what I consider most disgraceful conduct on the part of some persons driving a horse-drawn vehicle—a two-wheeled trap, rarely seen in any part of England except in Norfolk, which consists of a square covered-in box on two wheels, the reins entering the front window. I was passing along the London Road just outside Dereham, and the vehicle was just in front of me and proceeding in the same direction. A motor-car containing four men was coming in the opposite direction, the driver sounding his horn warning his approach, but the person driving the box-like cart made no attempt to pull to one side of the road, and persisted to keeping in the middle. When almost opposite to the car, which had then approached, it seemed as though the cob was purposely pulled towards the car, with the result that the driver of the car, to avoid a smash, turned to one side, which caused the car to shoot into the ditch all four wheels, no attempt being made by the persons in the trap to stop or even ask if the occupants of the car had been injured. They drove off at a faster rate than before. I quickly overtook the trap with my car, and it was with considerable difficulty, and some distance was travelled, before they would pull out of the centre of the road to allow me to pass. Having got in front of the trap I then found it was not necessary to stop them, as by then the four occupants of the upset car were all standing up apparently uninjured, and shouted that they required no assistance.

This type of horse-drawn vehicle is a very dangerous one, many of them having no windows at the sides, and owing to the reins passing through the window in front a whip cannot be used; there is, therefore, no possible control over the horse. We hear so much with regard to the conduct of motorists that I think we should hear something about the conduct of persons driving horses on the road.—Yours truly,

BARRETO.

THE ELIMINATING CONTEST.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have noted in your columns a letter from "Motor Sportsman" dealing with the inadequate character of the eliminating trials, and I am writing to state that I think exactly the same. I do not at all wonder that the Star Company have protested, as your correspondent states, and I hope their protest will bear good fruit, and also that their challenge will be accepted by Mr. S. F. Edge.

As a spectator at Clipstone, and as a designer of cars, I think that it will hardly be fair if the Napier are allowed to put three cars in the Gordon Bennett Race, in view of the excellence of both the Star and Wolseley machines. A great many people said to me, "I wonder why they race for only a mile?" "How do we know that if they raced for twenty odd miles that the Star wouldn't have beaten the Napiers?" I will not trespass further upon your space, but I should like finally to say that I should be pleased to see a Napier, Star, and Wolseley in the Gordon Bennett without any further "Club arguments," or, if this is objected to, at least to test these three for a distance of about fifty miles.—Yours faithfully,

ANOTHER MOTOR SPORTSMAN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the letter appearing in your last issue under the *non de plume* of a subscriber calling himself "Motor Sportsman," would it not be more sportsmanlike if this gentleman advised the Automobile Club of the locality of one of the many estates where he states a circular racecourse could have been obtained to run the eliminating trials on? The Automobile Club did the best thing possible under very difficult circumstances owing to the law in this country, and it seems to me scandalous that a gentleman who calls himself "Motor Sportsman" should know of parks where races could be held and never tell the motoring world.

If he is not satisfied that the Napier is the best car to represent the three places for Great Britain for 1903, he might note that I shall be very pleased to run against any English car at present made, in August, every day from the 1st, for a stake, the whole of which is to go to the winner, of not less than £500 per race per day; so that he, the "Motor Sportsman," would not have the slightest difficulty in settling once and for all which is the best car at the moment in Great Britain.

Referring to Mr. Lisle's letter in your last issue, suggesting that he wishes to race a Napier car, I shall be very pleased to race him after August 1st—every day if he wishes it, up to thirty or forty days—but the race each day must be for a sum of not less than £500—the winner to take the full amount.—Yours truly,

S. F. EDGE.

MR. A. WINTER writes: I have a Peugeot car (8-h.p.) which, when throw into top speed, makes a lot of knocking in the engine. I have just had new crank and shaft brasses fitted. I am wondering if any of your correspondents could give me some idea why this should happen.

DRIVER LENT TO CUSTOMER: WHOSE SERVANT IS HE?

At the Brompton County Court (London), last week, before Judge Stonor, Mr. J. Best, butcher, Montpelier Street, South Kensington, W., brought an action against Messrs. Rawlings Bros., Ltd., electrical engineers and motor-car manufacturers, Gloucester Road, W., claiming £22 in respect of injuries to a horse and damage to a cart, said to have been caused through the negligent driving of a motor-car by one of the defendant's servants. Mr. Attenborough appeared for the plaintiff, and Mr. Vaughan Williams defended. A. W. Ebsworth, in the service of the plaintiff, stated that on 19th January last he was driving a horse and cart down Montpelier Street in the direction of Brompton Road, W. On his reaching Brompton Road two vehicles going along that thoroughfare waited for him to get across to the farther side, but the motor-car suddenly shot out from behind the two vehicles and "lashed" into the horse and cart. Witness was driving at about five or six miles an hour, while the motor-car came along at from ten to fifteen miles an hour on its wrong side of the road. Mr. J. Ovey, Park Place, W., stated that he was the owner of the motor-car in question, which he entrusted to the defendants to mind and keep in repair for him. He had been in the habit of telephoning to Rawlings or leaving a message at their office when he required the motor, and they charged him at the rate of £1 a week, and made a small additional charge for sending the car to his flat. The man who was driving the motor-car at the time of the collision was not his servant, for he paid him no wages, although on one occasion—and only one, he believed—he gave the man a "tip" of a couple of shillings or so. This man was employed by Rawlings Bros. Mr. Vaughan Williams (to witness): Do you know it is the universal custom of the trade that when a man goes out from a firm to drive a car for another person he is under that person's orders? The Judge: But it is a question of common law. I don't see how trade custom can affect the case. Mr. Vaughan Williams read notices upon billheads of certain motor-car manufacturing firms to the effect that the firms would not be responsible for anything which might happen when their men were driving other persons' cars. His Honour came to the conclusion that the driver of the motor-car became frightened and dashed across the road to his wrong side. Mr. Vaughan Williams submitted that even if that were so his friend could not succeed in the present action unless he was able to show that the collision was caused wholly through the fault of the driver of the motor-car. The evidence, however, showed that the plaintiff's driver was not free from negligence. But he would ask his Honour to hold that the keynote, so to speak, to the question was this: Whose vehicle was it? It was quite immaterial that the man driving the motor-car was in the general service of another firm. His Honour: No, I cannot agree. I do not think so. Mr. Vaughan Williams: I do not wish to be unduly persistent, but this question of custom is of great importance to the motor trade. His Honour: I think that the plaintiff's driver was also guilty of negligence, and I find for the defendants, therefore, but I shall allow no costs.

MOTOR-CAR ACCIDENTS.

An alarming accident occurred at the foot of Kingston Hill, Norbiton, on Saturday morning. Lord Alan Percy (second son of the Duke of Northumberland), the Hon. Myles Ponsonby, and Major Russell were returning from London to Pirbright on a motor-car, and when they were near the bottom of the hill a carrier's cart came out of a side street. The driver stopped the engines and applied the brake, but at the moment one of the tyres burst, the car swung round, and dashed into the window of a draper's shop. All the occupants were thrown out, and the Hon. Myles Ponsonby received the more severe injuries, and was detained at Kingston. Lord Alan Percy sustained some cuts, but was able to return to London. Major Russell and the driver escaped injury.

ALBAN GENTILH, eighteen, a motor-car driver, surrendered to his bail at the Marlborough Street Police Court, before Mr. Denman, to answer the remanded charge of furiously and recklessly driving a motor-car in Hyde Park, and causing serious bodily harm to William Smith, of Vauxhall. The injured man said on March 17th he went for a bicycle ride with a friend in Hyde Park. He was riding on his right side of the road. After he got to Apsley Gate he remembered nothing till he found himself in St. George's Hospital. At the time of the accident he was only going at the rate of about six miles an hour. Mr. Staplee Firth cross-examined the witnesses at great length, and in defence urged that the accident was caused through Smith running into the motor-car. Mr. Denman committed the defendant for trial, allowing bail in the sum of £100.

NO LIGHTS.

MR. W. R. SPENCER, manager of the Royal Hotel, Grimsby, was summoned at Grimsby on a charge of riding a motor-bicycle without a light. The defendant was ordered to pay 7s. 6d. costs.

CHARGED with driving a motor-car without a light after nine o'clock in Princes Street, Edinburgh, on a recent evening, a motor-car driver stated that the vibration of the car put the lights out coming from Waterloo Place, and as he was only going to the hotel he thought it would be all right, if he lit up again there. Sir Andrew McDonald imposed a fine of half-a-crown.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Leeds	F. Asquith, Leeds	—	£10, etc.
Nottingham	*T. Humber, Nottingham	—	10s.
	A. Callan, Birmingham	16 m. p. h.	30s.
Loughborough	G. Burton, London	—	£5, etc.
Accrington	*A. Ratcliffe, Haslingden	20 m. p. h.	To pay costs.
Weymouth	F. Martin (driver to Mr. J. H. de Mattos, Weymouth)	16 m. p. h.	Dismissed.
"	C. Stewart, Weymouth	—	£1, etc.
Ayr	A. Pratt, Monkton	20 m. p. h.	£3.
Barnstaple	*A. Comerford, London, W.C.	—	Adjourned.
Grimsby	*W. R. Spencer, Grimsby	—	Withdrawn
Shoreham	E. Boll	24 m. p. h.	£10, etc.
Linton (Cams.)	C. L. Freeston, London	—	5s., etc.
Windsor	H. J. Ball, Catford	—	£1, etc.
Chichester	*A. T. Humphry, Chichester	30 m. p. h.	10s.
"	*F. G. Pratt, Chichester	30 m. p. h.	10s.
Newport, I. of W.	*T. A. Tillard, Cambridge	—	£1, etc.
Winchester	E. W. Janson, Drayto Park	—	£3, etc.
Wetherby	T. Pryne, Harrogate	—	£1, etc.
"	S. H. Holmes, Harrogate	—	£2, etc.
Garstang	C. Hunter, J.P., Durham	—	£5, etc.
"	G. Roper, Sunderland	—	£5, etc.
"	R. W. Wearing	—	£3, etc.
"	Dr. F. Stephenson, Blackburn	—	£3, etc.
"	J. Staveley, Preston	—	£1, etc.
Leicester	T. B. Browne, London	—	£5, etc.
Reigate	H. Lindop, Hyde Park, W.	—	£2, etc.
"	E. Lee, Peckham	—	£2, etc.
"	F. Parish, Regent's Park, N.W.	—	£3, etc.
"	G. Mathias, Westminster	—	£2, etc.
"	A. W. Heard, Broudesbury, N.W.	—	20s., etc.
"	C. A. Tisdale, Tower of London	—	£2, etc.
"	W. Williams, Surbiton	30 m. p. h.	20s., etc.
"	G. Cuthbert, Hanwell	—	20s., etc.
"	C. Smither, Addiscombe	—	20s., etc.
Woking	E. E. Ryle, Egerton Crescent, S.W.	21 m. p. h.	£3.
Croydon	A. Perman, Battersea	—	10s., etc.
Settle	J. Holgate, Leeds	—	£2, etc.
"	S. Trafford, Nelson	—	£2.
Odiham	H. D. Lewis, London, E.C.	33 m. p. h.	50s., etc.
"	H. Evans, Winchfield	21 m. p. h.	50s., etc.
"	C. F. Wahl, Hampstead	25 m. p. h.	£2, etc.
Oakham	J. Smith, Grantham	32 m. p. h.	£5.
York	E. P. Caporn, Harrogate	—	10s., etc.
"	G. Teece, Warrington	—	£3, etc.
"	W. N. Drew, Sheffield	—	£3, etc.
"	S. K. Baines, Bradford	—	£3, etc.
"	G. Tennant, Leeds	—	10s., etc.
"	J. McKelvin, Kirknewton	—	£6, etc.
"	A. H. Walker, Whitby	—	£2, etc.
"	F. E. Washing, York	—	20s., etc.
Shrewsbury	E. C. Smith (driver to Lord Berwick)	—	£1.
Basingstoke	J. M. Gorham	25 m. p. h.	£3, etc.
"	C. King	30 m. p. h.	£3.
Sedburgh	*H. W. Thompson	—	2s. 6d., etc.
Steyning	H. H. Barrett	—	£2, etc.
Nottingham	*F. Widdowson, West Bridgford	—	50s., etc.
Norman Cross	Lord Castlereagh, Regent's Park, N.W.	26 m. p. h.	£1, etc.
"	Foxhall Keene, Melton Mowbray	38 m. p. h.	£10, etc.
"	A. Foster, Queensbury	—	£3.
"	C. Hardy, Bulwell, Notts.	—	£1.
"	C. P. Sinclair, Roxburgh	—	£1.

Where no alleged speed is given it is understood to be above the legal limit.

* Motor-Cycle Cases.

Just for a change there was only one case of a motor-car being driven at an improper speed at the Shoreham Court one day recently, Ernest Boll being so accused. This occurred so far back as February 16th last, Superintendent Hooker explaining that it had not been possible to serve the summons before. Police-constable Bristow stated that on the day

in question defendant travelled through Southwick at the rate of twenty-four miles an hour. He gave the name of Boll, and his address as Piccadilly, this being false. Witness saw him again on April 20th, and on the following day served him with the summons, personally, at 15, Blatchington Road, Hove. Defendant then declared he was in Paris on the day in question. Witness, however, was certain as to his identity. A witness living at Southwick said that on the day in question defendant passed him at the rate of at least twenty miles an hour. Defendant, whose real name was said to be Bernard Barthelmy, was ordered to pay £10 17s., including costs.

ALFRED RATCLIFFE, a working youth, of Haslingden, was summoned at Accrington for furiously riding a motor-bicycle. Police-constable Clarkson and Police-sergeant Bale said the defendant was riding a motor-bicycle at the rate of twenty miles per hour. Defendant said it was his first time on a motor-bicycle, which he had got on the hire system, and he was trying it. The Mayor told the defendant that he had acted in a straightforward way, and they didn't wish to press unduly upon him. Defendant would have to pay the costs.

At Nottingham, Arthur Callan, of 23, Ash Road, Saltley, near Birmingham, was summoned for having furiously driven a motor-car along Lister Gate, on the 25th April. The evidence showed that the defendant, who was in charge of the 50-h.p. Wolseley car belonging to Lieut. Mansfield Cummings, which had been to the Automobile Trials at Clipstone, was driving in the direction of the Midland station, at the rate of sixteen or eighteen miles an hour, and had to be followed there in order to obtain his name and address. Callan denied that he was driving fast, and urged that it was a case of mistaken identity. Defendant was fined 30s.

In the cases at Settle the officer stated that he was on duty in plain clothes, and, standing at the finishing point of the course, he timed them over a distance of 220 yards, starting the timing the moment he saw them round the curve at the beginning. The alleged speed was fifteen miles an hour. The defence pleaded it was impossible that the officer could tell the position of the advancing car from where he stood, as the time of coming into sight would vary according to which side of the road the car was on. The road averaged eight yards wide round the curve, and the line of sight from the point of obstruction to the opposite side measured 39 yards. It seems unreasonable that a conviction should follow on the evidence of a single officer armed with a stop-watch.

In regard to Mr. Foxhall P. Keene, who was fined £10 and costs, it was stated that he was travelling at thirty miles an hour, and refused to stop when hailed by the police. The chairman of the Norman Cross (Hants) magistrates said it was the worst case that had come before the Bench.

POLICE TRAPS.

AT Hartley Wintney, on the main road from London to Odiham (Hants), is a police trap of the orthodox quarter of a mile in length.

THERE is a measured track of highway *en route* from Preston to Lancaster and Windermere, and on a recent day five motorists were trapped, the victims including Mr. J. Wearing, a nephew of Lord Ashton.

AT Selsey, near Bognor, on the south coast, the police have a measured quarter of a mile.

JUST beyond Hook, on the way to Basingstoke, is a measured distance and motorists should beware of the activity of the police in that direction.

OBSTRUCTION.

At the Newcastle Police Court, Walford Bodie, commonly known as Dr. Bodie, has been charged with having, on April 25th, in Grey Street, wilfully obstructed the thoroughfare by means of a motor-car. Police-constable Thompson stated that about 2.15 p.m., on April 25th, he saw defendant bring a motor-car to a standstill. He then went into a shop, and left the car outside from 2.15 to 3.15. Meanwhile a large crowd gathered, and vehicles could not get past. Superintendent Findlay: He was here in 1896 for obstructing the police, and fined 40s. and costs. A fine of 10s. and costs was imposed. Defendant did not appear.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, MAY 23, 1903.

[No. 220.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

SATURDAY was a drizzling uncertain sort of a day, the copious weeping of the clouds in the early morn dampening the enthusiasm for a day's motoring, so far as the fair weather devotees were concerned. Venturing as far as Salisbury we managed to find some dust, which apparently surprised many of the people of Old Sarum who had experienced an early deluge. The old Close looked delighted with the early greens of spring flowers,

and very few people disturbed the cawing of the rooks, whose harsh grating sounds were in strange contrast with the aspect of seclusion. On oneside of St. Anne's Gate, leading from the busy road to the Cathedral, were ladies sketching; on the other a very modern painting on a newly placed notice board to this effect:—"Motor cars are not allowed in the Close except on business and only when driven slowly. It is forbidden to drive them up and down or to use the Close roads for practising purposes. By order of the Dean and Chapter." Why does not the same thoughtful spirit characterise the local authorities, and lead them to prohibit the exhibition of trunks and portmanteaux and other "utilities" under the Poultry Cross to the annoyance of photographers and the disfigurement of a beautiful memorial of a past age? As the advertisements say, "local papers, please copy."

Legislation Looming.

IN the agricultural town of Trowbridge on Saturday Mr. Walter Long made an announcement with regard to his views on automobile legislation which must have shocked the bucolic wiseacres of the county. He declared that the limitation of speed to twelve miles an hour gave no security to the public; that the present law was a farce, and that the present police methods ought not to be adopted. Such a threefold condemnation of the present state of things must surely be followed by an early reform. Mr. Long referred to the resentment felt in agricultural districts to the suggestion for the removal of the speed limit and clearly indicated how completely he was at variance with their view. Evidently the removal of the speed limit is in contemplation in the proposed Bill and some means of identification will also be required. Let us hope—in facing what is apparently the inevitable—it will not take the form of the conspicuous numbering about which so much has been heard. Reasonable means of identification will not be stoutly opposed, and hence the Government will be well advised in not humiliating the pioneers of the new locomotion too much.

The Lords and the Bill.

THE Earl of Camperdown suggests that the new Bill of the Government should be introduced into the House of Lords before discussion in the Commons, where Mr. Cathcart Wason will probably be prominent in opposition. Lord Balfour of Burleigh thinks well of the suggestion, and the matter is under the consideration of the Secretary for Scotland and the President of the Local Government Board. Whatever is done

will have to be done quickly, for, as was made clear by the discussion in the Upper Chamber on Tuesday, the present state of affairs is unsatisfactory to motorists, police, and magistrates alike. The Earl of Wemyss initiated a brief discussion on the lines indicated in last week's *Journal*, and the Marquis of Granby followed with a plea for the abolition of the speed limit and the licensing of drivers. In reply Lord Balfour of Burleigh agreed that, while there must always be some limit of speed in populous places and narrow roads, it was obvious that, if they put distinguishing marks on motor-cars, so that those who did wrong might be easily identified, there ought to be a much more liberal allowance in the matter of speed. He attached the greatest possible importance to having distinguishing marks; but the whole fraternity of motor-car users should not be penalised for a small minority of their number. It was the desire of Mr. Long to introduce the Bill at the earliest possible stage.

Mr. Jarrott to visit America.

SOME interest will be created by the announcement, which we are able to make on the best authority, that, during August, a series of International races will take place in the United States. Mr. Charles Jarrott, having performed doughty deeds in the Gordon Bennett race, will journey to Syracuse, for the purpose of taking part in some motor-car races, which are being arranged by Mr. C. A. Benjamin, the representative of the H. H. Franklin Manufacturing Co. in that city. It is also probable that a race will take place between Messrs. Jarrott, Winton, and Fournier, near New York, so that, in a small way, the Americans will be treated to something like a repetition of the International event, which is at present exciting so much interest.

The Portsmouth Club.

ON Saturday last the Portsmouth Automobile Club opened its second season with a run to Hind Head. Although the weather was still a little cold a dozen cars and as many motor-bicycles started from the George Hotel, Portsmouth, amongst the passengers being the Mayor and Mayoress (Sir William and Lady Dupree) together with several of the Portsmouth Corporation. At the Royal Huts Hotel, Hind Head, tea awaited the motorists and his worship presided over a party of fifty. On the return trip the cars dispersed, several following an alternative and longer course home. Among those present were Mr. Knight on a 9-h.p. De Dion, Mr. F. Blake on a 10-h.p. Dennis, Mr. H. Blake with his 12-h.p. Daimler, Mr. Cox on his 11-h.p. Clement, on which also rode the Hon. Sec., Mr. C. Sapp, Mr. B. Isaac on his 9-h.p. Clement, and Mr. Ashley, on his Lanchester.

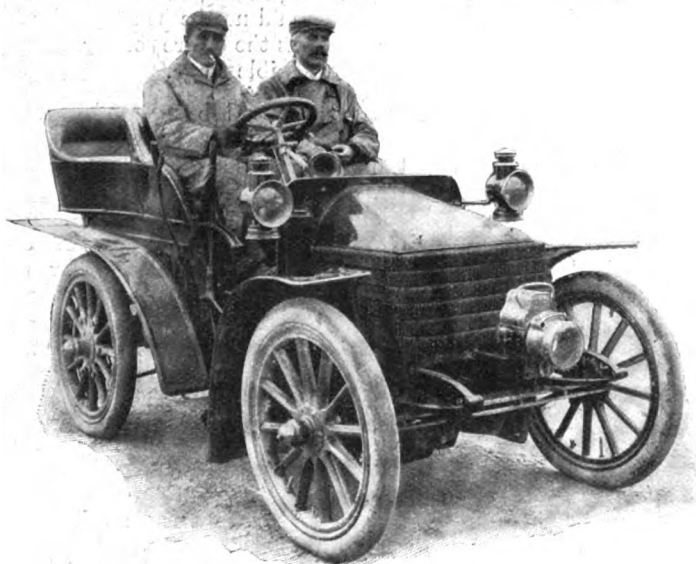
Roads to Prosperity.

THE Gordon Bennett Race will have the effect of improving the roads of Ireland, not only within the area of the route, but also of the counties lying near. This movement is likely to be extended throughout the country, and the increase of roads built with easy gradients, and communicating with

cross roads and farm lanes, should open up a profitable artery of traffic from places now quite inaccessible, so far as the railway is concerned. We give prominence to this at the present juncture because there is a feeling in some quarters that the forthcoming race will be of transitory value to the country. This is a wholly inadequate view of its influence. There is no doubt that it will not only popularise automobilism, but also inspire some of the local authorities to follow the example of Eastbourne, for instance, and develop municipal services for goods as well as for passengers. Not only that, but private enterprise will also be encouraged, and the new prosperity that seems to be coming for Ireland will be considerably aided by the general adoption of self-propelled vehicles for agriculture and for all other traffic.

For Market Gardeners.

ONE of the great difficulties of the British fruit grower is the risk of losing the market. By missing the train by a few minutes a delay of several hours may result, and when the produce reaches London it is practically unsaleable—certainly it cannot be disposed of profitably. But with the advent of the motor-car such losses can be obviated, the motor-car rapidly recovering lost ground and bringing the fruit to the market in good condition and in good time. Every morning three motor-lorries may be seen in Covent Garden, having brought produce from the market gardens of Essex, and the punctuality of their appearance has been a matter of comment to those depending on the rail and horse, and of gratification to those who send their goods by that means.



The Glasgow-London Non-St p Run—Mr. H. Prosser on the 10-h.p. Wolseley.

Ladies as Drivers.

AN advertisement in the columns of the Journal for young ladies for driving motor-cycles has attracted some attention, and has been welcomed in some quarters as a new profession for our daughters. There is no doubt ladies have become enamoured of the automobile, but whether their attraction will be so great as to cause them to take it up as the serious work in life remains to be seen. We doubt whether it will prove to have so magnetic an influence as that.

Motor-Wagons in the Soudan.

AUTOMOBILISM is going ahead in the Soudan, and, although the first steam van sent out proved too expensive and the working parts were too near the ground, a later vehicle has done extremely well. This is the Milnes-Daimler lorry that took part in the War Office trials at Aldershot. In Egypt it has done

good work at Halfa camp, and at Barber. At the latter place it was inspected by the Sirdar and the leading officers of the army after conveying the Atbara memorial stones to the battlefield, a distance of 65 miles. The lorry carried five tons, and made the double journey with only one stop. Altogether it would appear that the work of the British authorities in Egypt will be materially assisted by the modern automobile.

M.P.'s and Motor-Cars.

A CIRCULAR was lately sent out by the agent for the Doncaster Conservative Association, intimating that Mr. Fison, M.P., would visit certain parishes in his constituency in a motor-car on certain days. Five days were set apart for the tour, and during that time nearly every place in the division was visited. "It will be much appreciated by Mr. Fison if you" (the recipient of the circular) "can see your way to gather together any friends who may be desirous of meeting the member, and who would be glad to have some conversation with him during the time he will be making a call in your parish." This is a new development of political interest made possible by the automobile. But care must be taken, and the motor-car must not be made the subject of jokes, as Mr. J. A. Fyler, the recently-elected M.P. for the Chertsey division, has just discovered. The other day he presented first-aid certificates to members of the St. John Ambulance Association at Addlestone, and in doing so he made some chaffing remarks about the value of ambulance men in respect of motor-car accidents. Subsequently the hon. gentleman proceeded by motor-car to Frimley, near Camberley, to address a meeting. When half the distance had been covered, his hat blew off, and the driver slackened speed. Mr. Fyler essayed to leave the vehicle while it was still in motion, with the result that he was pitched head foremost on to the ground, his right hand and wrist being severely cut. Although in great pain, he continued his journey, and kept his engagement at Frimley. But no more jokes were made.

The Sheffield Hill Climb.

ON Saturday the Sheffield and District Automobile Club held a hill-climbing competition at Padley Wood Hill. Mr. E. F. Coupe, the treasurer of the Club, acted as chief marshal, the other officials being as follows:—Timekeepers, Messrs. T. H. Woollen and W. E. Cope; assistant timekeepers, Messrs. T. Lonsdale and Cooper Pearson; umpire, Mr. J. Hoyle-Smith (secretary to the Manchester Automobile Club); hon. secretary, Mr. J. R. Wade. There were in addition some twenty or thirty observers. Below we give the marks obtained by the leading competitors, these being calculated on the number of passengers carried, price of car and rate of speed.

H. Cooper, Wolseley, 10-h.p.	963
F. G. Smith, Locomobile, 4½-h.p.	870
James Barber, Belsize, 12-h.p.	856
A. Truelove, Belsize, 12-h.p.	854
J. H. Pickford, Wolseley, 10-h.p.	787
H. F. Hobson, Century, 3½-h.p.	778
W. N. Drew, Wolseley, 7½-h.p.	757
P. W. Fawcett, Humber, 12-h.p.	658
F. Churchill, Hallamshire, 10-h.p.	623
T. G. Revill, Boyer, 6½-h.p.	623
P. B. Thomson, M.M.C., 8-h.p.	572
Ben Hind, Clement, 9-h.p.	551
J. Ellis, M.M.C., 8-h.p.	405

There were three competitors in the cycle section, and after the event tea was partaken of at the Maynard Arms.

"Motoria," Ltd.

LAST week we recorded that "Motoria Limited has been registered with a capital of £1,000 to acquire the business of an exhibitor and salesman of motor-cars carried on by Mr. F. Jessett. Now comes the prospectus of a "universal motor-mart," in which the prominent position of the automobile.

is set forth and a "boom" is foretold. The company—which must not be confounded with the firm of similar name in Balderton Street, W.—proposes to establish a motor-mart in the West End and makes a special point of the fact that it "has secured the services, as managing director, of Mr. Fredk. Jessett, who for many years has been engaged in promoting trades' exhibitions, and who has for some time past actively interested himself in automobile matters. Mr. Jessett was recently invited by the principal Association of Omnibus Proprietors to advise as to, and submit the best build of, a self-propelled omnibus for their requirements, and was similarly requested, in respect to a motor-tricycle, for tradesmen's delivery purposes."

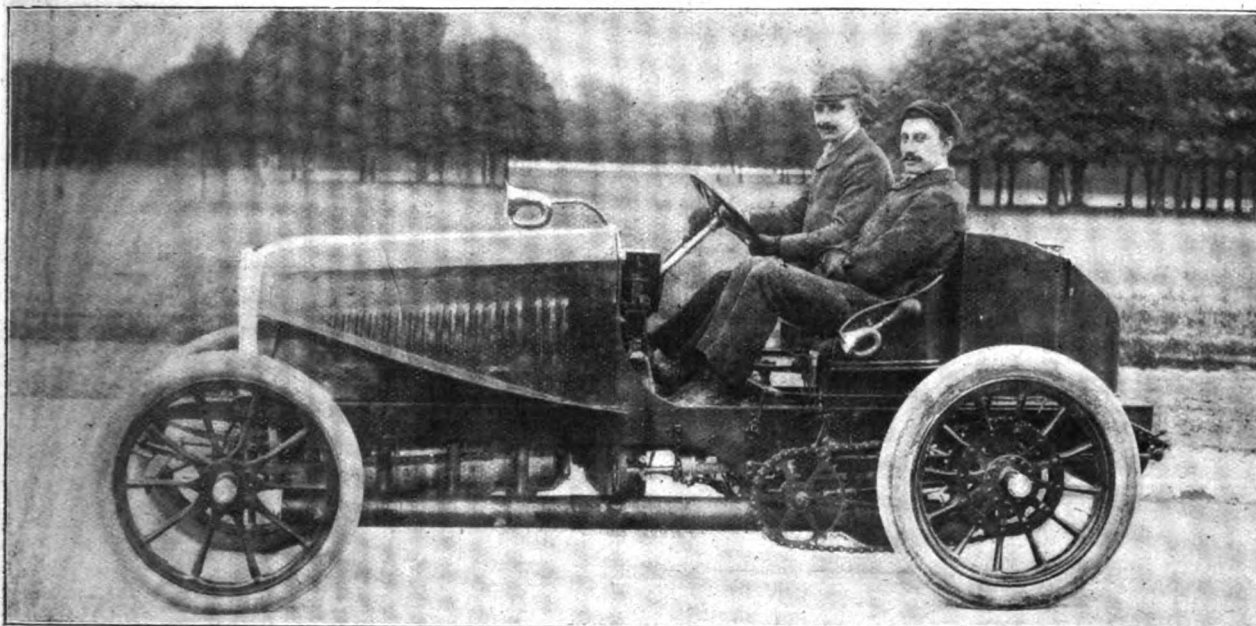
Deposits Wanted.

SPACE in the Mart will only be guaranteed to those applicants who send ten per cent. of the amount of their applications, and commission on sales effected by firms associating with the venture will be chargeable at the rate of five per cent., payable monthly. Proper books of accounts of such sales must be kept to be produced on demand to auditors appointed by the concern.

which is not usually meted out to servants in his capacity. There are at present no recognised conditions of motor service, but the new employment will gradually work out its own course and something like custom be established. Hence the necessity for those employing drivers and others in connection with their cars to be thoroughly explicit in all their engagements.

The Storage of Petrol.

FROM the regulations of the Home Secretary with regard to the storage of petrol, published on another page, it will be seen that there are two methods in which petroleum spirit required for use in motor cars may be kept. The first of these will be the usual method, namely, to keep in accordance with these regulations; but where a person finds that for some special reason he cannot observe one of the Regulations 4, 5, or 6, he may resort to the second method, namely, to apply to the local authority for a license. In such cases the place will be examined by the local authority officer, who will advise the local authority as to its suitability for license. Where a license has been granted, Regulations 4 to 7 no longer apply. In no case is petroleum spirit kept wholly or partly for sale exempt from the necessity of a license.



M. Toste on the 80-h.p. Panhard he will drive in the Paris-Madrid Race.

Motor Mail Vans.

MR. AUSTEN CHAMBERLAIN has stated in the House of Commons this week that the motor-vans which had been used for the conveyance of parcel mails between Liverpool and Manchester from May 1 to June 20, 1902, and from November 23 to the present time, broke down on thirty-one occasions. On eighteen of these occasions the mails had to be transferred to other vehicles. On the other thirteen occasions the motor-vans were able to complete the service after some delay. The delay in the arrival of the mails varied from thirty-two minutes to four hours twenty-nine minutes.

Master and Man.

SOME time will elapse ere the difficulties now connected with the employment of mechanics will have passed away. The other day a Bath motorist had a dispute with his man, and both parties appeared in the local police court, the driver being fined £1 for an assault upon his employer. The affray seems to have been one in which considerable temper was displayed, and the employee apparently expected treatment

Time Tables.

THE motor-car service between Bromley (Kent) and Cudham has re-commenced for the season, this being the third year it has been run. There is no railway service in this particular district; hence one reason why it has been so much appreciated. The route taken is *via* Hayes and Keston, and a capital time table has been issued by the promoters of the service. From Hastings, too, comes a time table of the motor buses now running there, and a table of fares for motor-car trips to places of interest in the locality and also to more distant resorts, such as Brighton, Eastbourne, Pevensey, Rye and Winchelsea.

Eastern Counties Automobile Club.

THE inaugural run of the newly-formed Eastern Counties Automobile Club took place on Saturday. It was originally intended that the first run should be to Bury St. Edmunds and Diss, but the destination was changed to Clacton-on-Sea *via* Great Bentley. The weather was fine during the outward run, but as soon as the party got to Clacton rain

commenced and lasted some hours. Amongst those taking part in the run were Messrs. W. T. Pretty (Ipswich), F. L. Bland (Copdock), C. D. Castell (Wickham Market), W. H. Blomfield (Ipswich), G. Milbank (Ipswich), G. C. Ching (Ipswich), Dr. Longworth (Melton), J. R. Egerton, with whom was Dr. Moseley, the hon. sec., A. Hackblock (Ipswich), etc. At Great Bentley the party was met by Colonel Davis, the High Sheriff of Essex, who headed the procession to Clacton, a distance of eight miles. Some misapprehension has arisen as to the runs of the Norfolk and Eastern Counties Clubs, which are, however, separate organisations.

A Change in Surrey.

FOLLOWING the severe comments made by Lord Onslow at the Surrey Quarter Sessions at Kingston last October respecting the attitude of the Surrey police towards drivers of motor cars, more especially in the Reigate Petty Sessional Division, there was a cessation of hostilities for six months, and not a single case was brought before the Court. The truce apparently has now terminated, with the result that the season's first batch of offenders has appeared before the Reigate County Bench, as reported last week. Judging, however, from the evidence tendered in each case, the constabulary are not this year pursuing the peculiar practices which Lord Onslow condemned, and the magistrates, too, are more lenient, the heaviest fine inflicted being £3 and costs. It is to be hoped that a sensible attitude will prevail in the county this year, especially after the outspoken utterances of Mr. Walter Long and the triple prosecution of the Prime Minister.

The Glasgow to London Trial.

FROM a preliminary examination of the observers' reports made at the Automobile Club, London, after the run, it appears likely that the following vehicles will receive non-stop certificates:—No. 5.—10-h.p. Lanchester, entered by the Lanchester Engine Company; Nos. 8 and 9.—Four-cylinder Sunbeam cars, entered by John Marston, Limited; No. 19.—Arrol-Johnston dogcart, and No. 21.—Six seated Arrol-Johnston carriage, both entered by the Mo-Car Syndicate, Limited; No. 22.—10-h.p. Wolseley Tonneau, entered by Mr. Thomas Shaw; No. 23.—12-h.p. Argyll, entered by the Hozier Engineering Company, Limited. Also, subject to inquiry and determination on one point:—No. 1.—14 h.p. Chenard-Walcker Tonneau, entered by the Weston Motor Syndicate. The following made non-stop runs, but are subject to deduction of marks for delay in restarting at Leeds:—No. 11.—English-made six-seated double phaeton Gardner-Serpellet steam car, entered by Middleton and Townsend, for time occupied getting up steam; No. 3.—A motor bicycle, entered by the Quadrant Cycle Company, for time occupied in refilling petrol tank. These announcements are made provisionally, and are subject to alteration or modification on more minute examination of the observers' records.

Hill Climbing in Massachusetts.

THE Massachusetts Automobile Club opened the 1903 season on the 20th ult. with a hill-climbing speed contest on the Commonwealth Avenue Hill in Boston. The road is a broad, winding one, one-fifth of a mile in length, and with a maximum grade of 15 per cent. A steam car—a Stanley, driven by Mr. F. Durbin—carried off the honours, making by far the best time of the day, and winning both in its class and in the free-for-all race. Next came a Warwick motor-bicycle, a good second in the latter race, and a considerable distance in front of all the other petrol vehicles. Then came three Indian motor-bicycles, all making faster time than any of the petrol cars. Of the latter, the heavy and the light classes proved to be remarkably closely matched, the latter having a slight advantage in point of time. A Stevens-Duryea, in the under 2,000 lbs. class, climbed the hill in 43 1-5 sec., or just 1-5 sec. faster than a Peerless in the over 2,000 lbs. class. In the free-for-all race the two met again and exactly duplicated their

performances. The electric cars also showed up well. A Waverley made a record of 1.16 3-5. The following were the best times in each class:—

STEAM VEHICLES.		HORSE POWER.	TIME. MIN. SEC.
DRIVER.	CAR.		
F. Durbin	Stanley	5½	17
PETROL CARS UNDER 2,000 LBS.			
F. E. Randall	Stevens-Duryea	5	43½
PETROL CARS OVER 2,000 LBS.			
J. L. Snow	Peerless	16	43½
PETROL CARS WITH TONNEAU.			
J. L. Snow	Peerless	16	51½
ELECTRICAL CARS.			
W. G. Titcomb	Waverley	3	1 16½
MOTOR-BICYCLES.			
J. Downey	Warwick	1½	28
GRAND FINAL FREE-FOR-ALL CONTEST.			
F. Durbin	Stanley	5½	16½

The Motor Volunteers.

OFFICIAL news as to the doings of the Motor Volunteer Corps reaches us as follows:—The duty for General Oliphant, commanding the Home District, between the War Office and the Agricultural Hall, Islington, was carried out by Mr. Henry Edmunds on Thursday and Friday of last week. Captain Skeffington Smith, D.S.O., Adjutant of the Corps, conducted General Oliphant and staff to Caterham on an inspection of the barracks. On Friday, the 15th, Lieutenant-Colonel Mayhew, Commanding Officer of the Corps, drove General Lord Grenfell, G.C.B., etc., and staff to Gravesend for his inspection of the forts.

THE Earl of Onslow, the new Minister for Agriculture, is a keen motorist.

THE first motor-car exhibition held in Sweden was opened in the Idrottsparken, Stockholm, on Saturday last.

THE King is said to be contemplating a motor-car tour through Connaught during his visit to Ireland.

THE first four cars arriving at Leeds in the run from Glasgow to London were fitted with Clipper Continental tyres.

THE Calne Rural District Council has passed a resolution protesting against the proposed provision of a motor-car for the county surveyor of Wiltshire.

FOR striking a motorist on the face with a whip a Gunnersbury man has been fined £2 and costs at Brentford Police Court. Mr. Staplee Firth prosecuted.

RUMOUR has it that the business of Messrs. Panhard and Levassor is to be transferred to an English syndicate, negotiations with that object having been in progress in Paris.

IT is reported that the German Automobile Club has selected Baron de Caters, Mr. Foxhall Keene, and M. Hieronymous to represent Germany in the Gordon Bennett Cup race.

A SERIES of monthly auction sales is about to be established at Reading by the Speedwell Motor and Engineering Company, Limited. The first will take place on Wednesday next at the Reading Corn Exchange, and cars of several well-known makes are included in the catalogue.

KRUPKAR, LIMITED, the new concern referred to in a recent issue, have sent us a number of leaflets giving illustrations and brief particulars of their various types of cars. These range from a 6-h.p. two-seated car up to a 24-h.p. racer, and include tonneaus, phaetons, private omnibuses, delivery vans, lorries, etc. We hope to give some particulars of the new vehicles in a later issue.

LAST week reference was made to a run on a Benz-Parsifal car to Watford. The return journey was equally easy running, and even the wretched stretch of road at Cricklewood did not seriously upset our nerves. With a notable absence of vibration we came back to town negotiating through the busy traffic of a late afternoon in London with an ease that demonstrated the value of such a car for ordinary society purposes as well as for the more trying needs of touring.

The Glasgow to London Non-Stop Trial.

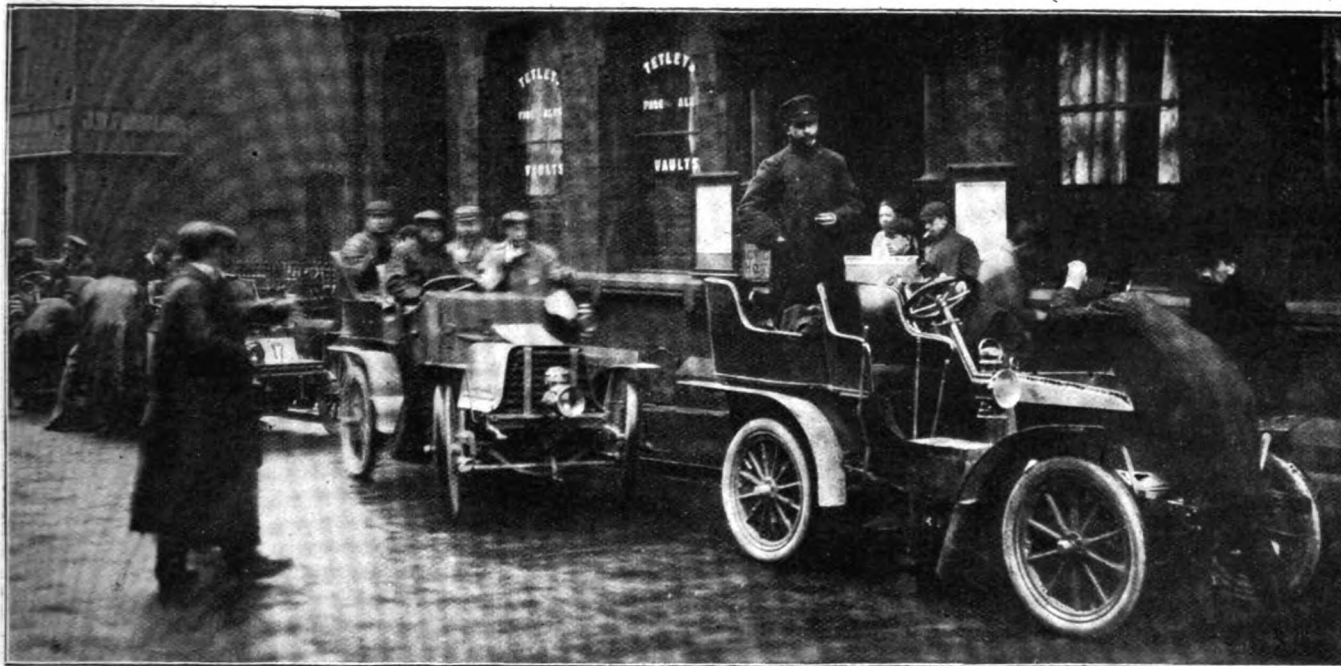


Photo by]

The Start from Leeds.

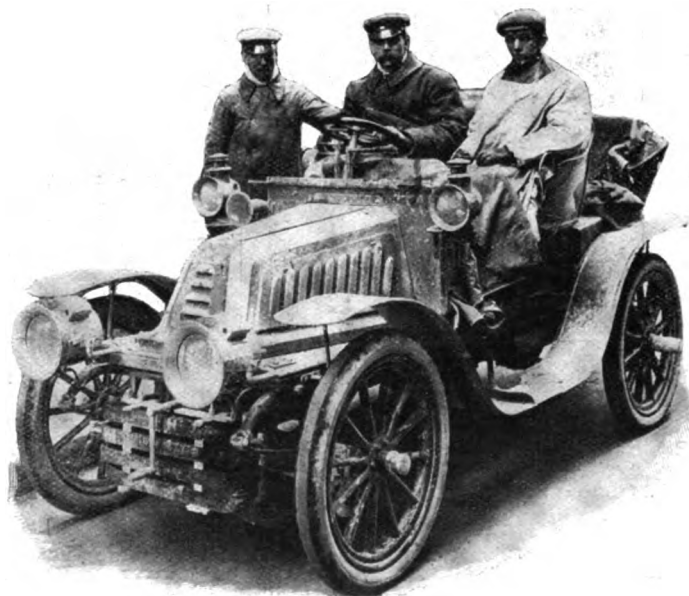
[Argent Archer.

HOW the cars came to town" might form a good epic for the modern Robert Browning anxious to parallel the fame of the poet's "Good News from Ghent." There is variety of incident in the scene, a demonstration of the moral attributes of persistence and courage, an illustration of the determination of the fair sex to steer their way without

inst., we wended our way towards Piccadilly to witness the arrival of the travellers from Glasgow, who, with the exception of a few hours' rest at Leeds, had been continuously in the saddle—or rather the bucket—for more than twenty hours. Such a performance indicates a fine determination on the part of the drivers, but what of the motor-cyclists, who straddled along with



Mr. Wilcox on the Baby Peugeot (No. 24.)



Mr. J. W. Stocks on the 10-h.p. De Dion (No. 20.)

the aid of mere man, and plenty of colour wherewith to paint a brilliant picture. And although the prevailing hues are those of drabcloth the combinations of the dust of half a dozen counties are sufficiently striking to ensure a vivid impression.

Towards the end of the afternoon of Thursday, the 14th

a lessening interest in the scenery of the fields and a growing eagerness to report themselves to Mr. R. J. Smith, the hon. sec. of the Western Section of the Scottish Automobile Club, to whose powers of organisation the success of the little jaunt was due? There may be fun about motor-cycling if the pastime is taken in moderation; but it must become monotonous if indulged

in on non-stop lines. What sighs must those riders have given in sympathy with the exhaust as they witnessed the social intercourse that is possible on a car, but quite foreign to the bicycle. A trailer would have been welcome to some of the men, and they would willingly have endured the added weight for the quiet companionship they would have enjoyed. When Yates appeared on his Humber his face told a tale of miles of weary travel and the strain associated with such a run. And Coles, the rider of the Brown machine, which was reported a trifle earlier, was quite as glad to tread the streets of the busy City again.

Yes, the busy City—for if all the world was not in Piccadilly his wife was represented. It was the hour when City men were going westward and Bond Street was emptying its carriage streams of fair ladies. And so the meeting in Piccadilly was representative of the wealth and work of the world. The humble tradesman, the patron of the penny 'bus, the client of

that ordinary people were breakfasting, the dust had been laid and the clouds ceased to unburden themselves. The route lay through Doncaster, Retford, and Newark, a canine in the second named place displaying antics that were fearsome to motorists and almost entirely self-sacrificing. Comparatively few people were met save at Newark, where market day was in progress, and the cavalcade of automobiles excited almost as much interest as did the procession of motor-vehicles on the historic 1,000 miles trial. At Stamford the police proved friendly, but there was a police trap in Huntingdonshire and at Norman Cross the boots of a seeming civilian betrayed the constable. "Can a leopard change his spots?" or a policeman alter the contour of his footgear? The experienced motorist answers both questions in the negative. At Barnet several motorists had gone out to meet the wayfarers, and a 40-h.p. Mercedes car attracted attention.



A Snapshot near Newark.



No. 10.—The 10-h.p. Argyll at Barnet.



No. 9.—The 12-h.p. Sunbeam at Hatfield.



The Lanchester (No. 4) at the End of the Run.



The Scene in Piccadilly.



Miss Dorothy Levitt, on the 12-h.p. Gladiator.

the cab, and the pedestrian who loves exercise, all joined in the welcome to the cars. From the windows of Clubland peered forth J.P.'s who regarded the obstruction to the traffic as a serious offence "in the eyes of the law," while the metropolitan police looked on as nonchalantly as is now their attitude towards motor-cars. The great crowd was thickest outside the headquarters of the Automobile Club, where gathered scores of motorists whose names are familiar in Society, legal, and engineering circles, while a few were there whose daring deeds have been duly chronicled in the long roll of victims which appears in the *Journal* every week. At the doors of the Club stood Mr. John Adam with his "Auld Lang Syne" welcome for the tourists who had escaped the moving dangers of the road in the shape of police and prejudice. The journey from Leeds had been somewhat uneventful. Rain fell in the morning, and the way out from the city was a greasy one. That was at 6 a.m. By the time

These were impressions gained among the motorists after they had notified their arrival in Piccadilly. The home-herald was Mr. C. Jarrott, who entered at 5.15 on a De Dietrich. Only a minute separated first and second, Mr. T. Shaw arriving on a 10-h.p. Wolseley. Then came a couple of motor-cycles, followed by Mr. Gutmann on the 14-h.p. Chenard-Walcker car. In quick succession came a Georges Richard, an Argyll with Mr. A. Govan at the helm, a Sunbeam, an Arrol-Johnston, a De Dion driven by Mr. J. W. Stocks, a F.A.C. tonneau, another Sunbeam, a Lanchester, a Gladiator driven by Miss Dorothy Levitt, whose white oilskin cloak stood out in the greyness of the afternoon, another Arrol-Johnston, a Wolseley with Mr. H. Prosser driving, another Georges Richard, an Argyll with Mr. F. Whitehead in command, a Rochet-Schneider driven by Captain Deasy, and an English Serpollet phaeton entered by Messrs Middleton and Townend. The motor-cycles—Brown, Quadrant,

and two Humbers—came along interspersed with the cars, and by half-past five eighteen cars and a quartette of cycles had arrived. Shortly before eight o'clock the Baby Peugeot strolled in, the progress of the sturdy infant having been delayed by punctures—equally the cause of dilatoriness in larger cars.

And so all the vehicles that left Leeds in the morning were accounted for. The drivers went their several ways, a few turning into the Club garage in Down Street, but many mingling with the fashionable crowd that rolled along Piccadilly with spotlessly-garmented footmen, who disdainfully gazed upon the motorists—wondering if ever they should be as those men were. Motoring is a ruffier of the attire, a tonic to the complexion, and a foe to folded arms. The statuesque attitude on the box seat of a brougham may be traditionally correct, but it can have no place on the motor-car. Liveried servants of the wealthy have already bidden farewell to the glories of wig and powder; they must soon relinquish the old habits on the box-seat and become as athletic and as equal to emergencies as is the man on the footboard.

One remark was overheard in the crowd. A well-attired gentleman asked the cause of all the pother and assemblage of people.

"Some motorists have come from Glasgow," was the response.

For a moment he contemplated a group of Argylls, Arrol-Johnstons, Wolseleys, Gladiators, and the like, and then, half whispering to himself, reflected, "Hum, I thought they were Scotchmen." Certainly there was much of the sturdiness of the Highlander and the dust of the Lowlands to be found on the cars as they came to town.

The Committee have sent us a preliminary statement with regard to the various vehicles, based on the reports of the honorary observers. Some of the matters referred to are still the subject of inquiry and consideration. The final report, together with the number of marks gained in each case, will shortly be issued.

1.—14-H.P. CHENARD AND WALCKER TONNEAU, entered by the Weston Motor Syndicate. The possibility of the deduction of one mark for this car for a driving stop is under the consideration of the Committee.

2.—12-H.P. GLADIATOR, entered by Miss Dorothy E. Levitt. Stop for puncture 20 minutes. Stop for battery run down, replaced by spare, 1½ minutes.

3.—24-H.P. DE DIETRICH, entered by Mr. Charles Jarrott. Stop owing to petrol not reaching carburettor, 7 minutes. Engine stopped momentarily when enquiring route, 1 minute. Stop owing to petrol not reaching carburettor, 2 minutes.

4.—10-H.P. LANCHESTER, entered by Lanchester Engine Co., Ltd. In reversing to return to rightward, broke reverse gear, and gave up between Skipton and Leeds.

5.—10-H.P. LANCHESTER, entered by Lanchester Engine Co., Ltd. Non-stop, full marks.

6.—10-H.P. WOLSELEY TONNEAU, entered by Messrs. Rennie and Prosser, Ltd.; ignition stop, 4 minutes.

8.—4 CYLINDER SUNBEAM CAR, entered by Messrs. John Marston, Limited; non-stop, full marks.

9.—4 CYLINDER SUNBEAM CAR, entered by Messrs. John Marston, Limited; non-stop, full marks.

10.—10-H.P. ARGYLL, entered by the Hozier Engineering Company, Limited; puncture stop, 15 minutes. Delay in re-starting engine at Leeds, 3 minutes.

11.—SIX SEATED DOUBLE PHAETON (GARDNER-SERPOLLET STEAM) entered by Messrs. Middleton and Townsend. Non-stop; six marks will be deducted for getting up steam at Leeds.

13.—THREE-CYLINDER BROOKE TONNEAU, entered by Messrs. Frank F. Wellington, Ltd., stopped for broken speed lever fork—45 minutes; and for 2½ hours to replace pump, and was withdrawn at Kendal. Report not yet received.

14.—9-H.P. ARGYLL, entered by Mr. Henry B. Hemmons. Car withdrawn during the trial. No records received.

15.—ROCHET-SCHNEIDER, entered by Captain H. H. P. Deasy. Driving stop, half a minute. Under consideration.

17.—12-H.P. GEORGES RICHARD LIGHT CAR, entered by Messrs. Mann and Overton's, Limited; tyre stop, 20 minutes; tyre pumped in Leeds, 2 minutes; two punctures, 24 minutes.

18.—24-H.P. GEORGES RICHARD LIGHT CAR, entered by Messrs. Mann and Overton's, Limited; one petrol tin containing water by mistake was emptied into tank and caused stoppage of 3 hours 12 minutes.

19.—ARROL-JOHNSTON DOG-CART, entered by Mo-Car Syndicate, Limited. Non-stop. Full marks.

20.—10-H.P. DE DION-BOULTON, entered by Mr. J. W. Stocks. Stop to fill tank, 2 minutes; stop to replace plug, 1 minute.

21.—6-SEATED ARROL-JOHNSTON CAR, entered by the Mo-Car Syndicate, Limited. Non-stop. Full marks.

22.—10-H.P. WOLSELEY TONNEAU, entered by Mr. Thomas Shaw; non-stop; full marks.

23.—12-H.P. ARGYLL, entered by the Hozier Engineering Company, Limited; non-stop; full marks.

24.—PEUGEOT, 2-SEATED, entered by Glasgow Motor Company; stop for ignition, 3 minutes; stop for ignition, 2 minutes; stop for ignition, 3 minutes; puncture, 15 minutes; replaced one trembler, 15 minutes; ignition, 1 minute.

25.—F. A. C. TONNEAU, entered by Farman Automobile Company, Limited; under consideration.

MOTOR-BICYCLES.

1.—MOTOR-BICYCLE, entered by the Triumph Cycle Company, Limited; did not arrive at Leeds; no records received from driver.

2.—MOTOR-BICYCLE, entered by the Triumph Cycle Company, Limited; wired from Kirkby Lonsdale "stuck"; no further driver's report received.

3.—MOTOR-BICYCLE, entered by the Quadrant Cycle Company, Limited; non-stop.

6.—MOTOR-BICYCLE, entered by Ariel Company, Limited; wired from Preston Station "Have abandoned run"; no further driver's report received.

7.—MOTOR-BICYCLE, entered by Brown Bros., Limited; filled tank twice; pushed up Shap Hill; pushed up hill near Kirkby Lonsdale; stopped to lubricate; stopped to replace belt three times; stopped to adjust trembler.

8.—MOTOR-BICYCLE, entered by Humber, Limited; stopped to fill with petrol five miles from Leeds and in Leeds; stopped near Biggleswade to fasten plug.

9.—MOTOR-BICYCLE, entered by Humber, Limited; stopped 15 minutes at Welwyn to clean out carburettor; stopped 2 minutes for loose terminal.

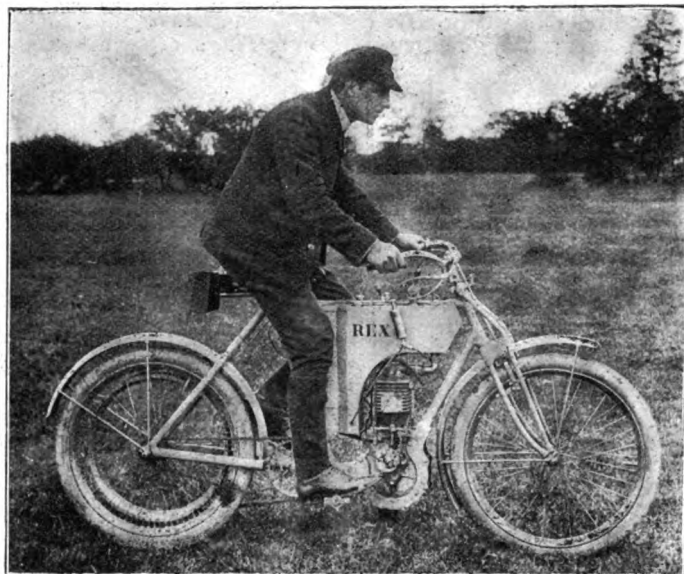
A COMPANY has just been formed in Florence, with a capital of £14,400, to be known as La Societa del Fabbrica d'Automobili Fiorentina.

WE recently had an opportunity of going over the motor-car body building works of Messrs. J. Rothschild and Fils, Limited, at Horseferry Road, Westminster, and Endell Street, Long Acre, W.C. The first-named premises cover a large area and are of the one-storey type. Here the bodies are made in the rough, every convenience being at hand for turning out any class of body. The plant is equipped even to the point of turning out the necessary iron fittings, such as lamp brackets, steps, dust hood, supports, etc. Aluminium is principally used in the construction of the Rothschild bodies, and we were much interested in the care given to the details. In the construction of an aluminium body thousands of small copper rivets are used, the holes for which have to be drilled and countersunk. The finishing of the carriage bodies is done at the Endell Street branch, and here we saw the various operations of painting, varnishing, upholstering, and general finishing and assembling, a separate department being devoted to each. The high finish of the Rothschild bodies is too well known to need enlarging upon at the present time; but, as indicating the variety of work undertaken, we may mention that at the time of our visit the work included bodies for Panhards, Clements, De Dietrich, Rochet-Schneider, Napier, C.G.V., and a 40-h.p. Mercedes.

At the annual meeting of the Roads Improvement Association the following addition to the resolution adopting the report was agreed to:—"The Association desire to record their sincere thanks for the able and indefatigable labours of their Honorary Secretary, Mr. W. Rees Jeffreys. During a year of very great pressure in business the work of the Association has grown enormously, and the prominence achieved in public matters by the Association has been largely due to the untiring energies of the Honorary Secretary. The accounts, which were submitted and passed, showed an income of £304 14s. 3d., and an expenditure of £208 13s. 6½d. The following were elected the Council for the ensuing year:—Messrs. J. R. Baillie, W. W. Beaumont, E. Cannan, Col. R. E. Crompton, W. H. Davey, J. S. Heslop, H. H. Humphreys, W. Rees Jeffreys, J. H. De Mattos, C. K. Mills, Hon. J. Scott Montagu, M.P., S. R. Noble, Joseph Pennell, E. Perman, H. R. Reynolds, M.A., Earl Russell, L.C.C., E. R. Shipton, W. G. Smyth, J.P., D.L., Hon. Arthur Stanley, M.P., Robert Todd, A. Webber, and G. H. Yelf. At a subsequent meeting of the Council the following officers were appointed:—Hon. Arthur Stanley, M.P., Vice-President; Mr. Robert Todd, Chairman; Mr. W. W. Beaumont, Vice-Chairman, and Mr. W. Rees Jeffreys, Honorary Secretary and Acting Honorary Treasurer.

MOTOR-CYCLING NEWS.

ONE of the last entries for the Paris-Madrid race before the list closed was a 3-h.p. Rex motor-bicycle by the Rex Motor Manufacturing Company, Ltd. Our illustration shows the actual machine selected for the race, it being one of the Rex Co.'s standard types. Mounted on it is Mr. G. Gordrey, of Coventry, who will ride the machine in the great event.



Mr. G. Gordrey on his "Rex" Motor Bicycle.

WE learn that one of the two Humber motor-bicycles entered for the Paris-Madrid race will be ridden by Mr. J. J. Leonard, who was for eight years with Werner Freres, of Paris, and who is perhaps the most experienced motor cyclist in this country. Mr. Leonard left for Paris early last week for a preliminary canter over the course.

ON Wednesday last week G. A. Barnes made a successful attempt on the hour motor-bicycle record from a standing start at the Canning Town track. From the 28th mile to the end of his journey he established new records. In the half-hour he rode 24½ miles, and at the end of the hour he had ridden 48 miles 1,395 yards. Barnes rode a "Bat."

THE Motor Cycling Club will meet to-day (Saturday) at the George Hotel, Harpenden, for tea at 5.30 p.m., and to-morrow (Sunday) at Hounslow Corner at 11.45 p.m. for a run to the Catherine Wheel, Henley, for lunch.

MOTOR-CYCLES are to be given their first official trial by the Austrian military authorities in the forthcoming manoeuvres. About twenty machines will be in use.

A MOTOR-CYCLE road race between Milan and Genoa, a distance of 215 kilometres, organised by the Italian Automobile Club, was run off on Sunday, the 10th inst. The winner proved to be Bucquet on the only Werner in the race.

SOME enthusiasts at Preston are proposing to form a motor cycling club for the town and district.

ON Saturday about 6,000 spectators attended the meet of the Glasgow Merchants C.C. (Ltd.), at Glasgow, when two motor-cycle events were decided, and H. Martin made an attempt on the Scottish one-mile record, which was 1 min. 19 sec. His new record was 1 min. 11 2-5 sec. This forms a British record. The former record stood at 1 min. 25 2-5 sec., made by Rigal. In the five-mile race Martin defeated Bert Yates, of Nottingham, winning in 6 min. 9 1-5 secs.—a British record. The result of the five mile motor-cycle race handicap was, 1st, C. F. Barden, London, scratch; 2nd, J. A.

Raper, Glasgow, 200 yards; 3rd, W. Deas, Glasgow, 600 yards. Time, 7 min. 25 sec.

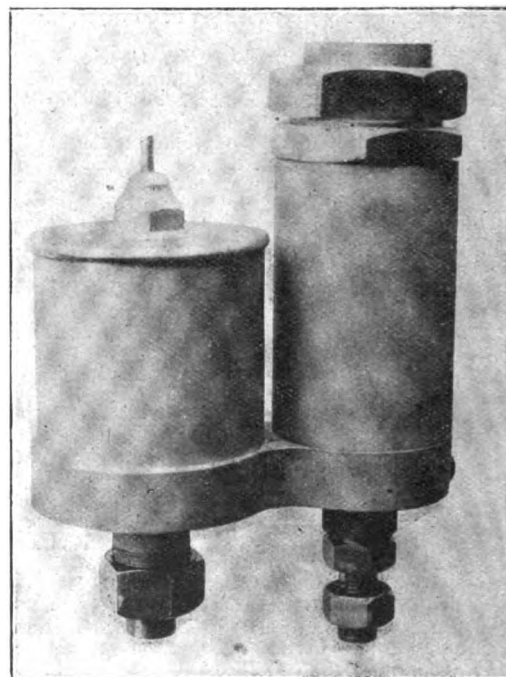
THE Southampton County Motor Club had a very enjoyable run on Saturday last. Tea was taken at Andover. Unfortunately rain fell during the return journey. All got through, however, without the slightest mishap. To-day's run is to Chichester, via Swaythling, Westend, Botley, Titchfield, Fareham, Cosham, Havant and Emsworth, the return being by the same route.

THE Nightingale Cycle Club will hold a cycle sports meeting on the Putney Velodrome on Whit Monday. In addition to the ordinary events, such as motor and cycle racing, C. F. Barden and F. W. Chase will compete in three motor-cycle races of one, two, and five miles. In addition, Mlle. Jeanne Merveux will make her first appearance in England, and will give exhibitions on various types of motor bicycles, including a Parisian monstrosity of 20-h.p.

Mr. C. W. SCHAFER has been elected sub-captain of the Motor Cycling Club.

A HILL-CLIMBING contest took place on Saturday last at Central Avenue, Bangor, County Down. The length of the hill was 720 yards, and the gradient at its steepest part 1 in 12. Thirty-two entries were received, out of which only 12 faced the starters. The result was declared as follows:—S. Brady, 2½-h.p. Centaur, 52 3-5 sec.; T. Ireland, 2½-h.p. Humber, 60 4-5 sec.; T. Mallon, 3-h.p. Quadrant, 61 3-5 sec.; R. G. Wilkinson, 2-h.p. Triumph, 62 3-5 sec.

THE Hendee Manufacturing Company, Springfield, Mass., U.S.A., the makers of the Indian motor-bicycle, have brought out a snap-on wire terminal which obviates the need of nuts or looped ends to secure the wire to the sparking plug, which is in itself no small convenience and time saver. It is being fitted to all the new models of the Indian motor-bicycle.



MESSRS. VAN RADEN AND Co. are bringing out the new float-feed carburettor for motor-bicycles illustrated above. It is of novel construction, being made out of tube instead of one casting. The whole carburettor is extremely light, and can be taken to pieces by undoing only one nut. Adaptors are made to fit inside the carburettor to make them suitable for the different sizes of motors, the adaptors being made according to the cubical contents of the cylinder. One of the tubes at the same time forms a heating chamber.

THE IRISH FORTNIGHT.



AMONG the Irish motorists who will welcome their confreres from all parts of the world during the forthcoming Fortnight will be Mr. W. G. D. Goff, the chairman of the Irish Automobile Club, and also one of the founders of the A.C.G.B.I. He is a thorough sportsman, and since 1897 has been a keen automobilist, starting with a Beeston motor tricycle and subsequently owning a 6-h.p. Panhard,

a De Dion motor tricycle, a quadricycle, a 10-h.p. Panhard, and three Napier cars of 9, 12, and 16-h.p. respectively.

Mr. Goff graduated at Trinity College, Dublin, and was for a couple of years with the 2nd Dragoon Guards. As a yachts-

Goff on his 16-h.p. Napier, and was taken in the lovely grounds of Glenville, Waterford, where he resides.

THE Club enclosure on the Course will extend on both sides of the road opposite the point at which the race starts and finishes. Tickets will be issued at one guinea each, and a charge of another guinea will be made for admission to the Grand Stand. During the day a military band will help to beguile the time.

MESSRS. G. W. BACON AND Co., LTD., have issued a finely printed map of the Gordon Bennett Race Course. This is based on the latest Ordnance survey, and gives the starting and finishing points, controls, and other special information, together with a key map of the surrounding country. A system of colouring has been adopted to distinguish the course from the main roads, the latter being also coloured to avoid confusion with the subsidiary routes. The altitudes in feet above the sea level are



Photo by]

Mr. W. G. D. Goff on his 16-h.p. Napier.

[Croker, Waterford.

man he achieved distinction between 1883 and 1896 in Irish and British waters and has always taken a practical interest in shooting. On several important occasions he was a member of the Irish team in national competitions, including that for the "Elcho Shield." Now that he has identified himself with automobilism the same enthusiasm has been displayed in connection with the sport, and his organising ability no less than his popularity has been acknowledged in his election to the chairmanship of the Irish Club.

For many years a member of the board of the Dunlop Co., Mr. Goff, who is also a Justice of the Peace, has been enabled to watch the progress of the automobile industry from the days of the early prejudice to its present position of prominence and favour. He is also interested in local affairs and is an alderman of the city of Waterford. The cycle track which he had constructed in the People's Park at Waterford was a testimony to the concern he felt in the physical development of the people among whom he dwells. Our photograph shows Mr.

shown at intervals along the course. The key map of the surrounding country also includes the Belfast portion of the tour, and altogether Messrs. Bacon are to be congratulated on the work.

THE cars for the race will be weighed at Naas, which is twenty miles from Dublin, and less than half that distance from the nearest point of the course.

THE village of Kilcullen will practically resemble a camp during the first days of July, the exorbitant terms asked by some hotel proprietors having driven a good many motorists to canvas. During the next few weeks tents will be shipped to Dublin by several well-known London firms, and some interesting developments are likely to result. Surely it would be better for those who hope to make a good harvest during the Automobile Fortnight to exercise a little reason and not regard motorists as lambs to be fleeced,

ALREADY motorists are looking after guide-books to Ireland. That edited by Mr. R. T. Lang and published by Messrs. A. and C. Black is among the best, containing in a handy form for the pocket a general view of the whole of the country. It briefly indicates the leading monuments and buildings in the principal cities and hamlets of the country, while its descriptions of picturesque scenery are above the average of such literature. "The Sunny Side of Ireland" is the distinctive title of a book of two hundred pages, issued by Messrs. A. Thom and Co., Ltd., of Dublin. This is descriptive of the route of the Great Southern and Western Railway, a line which passes through some beautiful scenery, and which will be used by many to get to the course of the Gordon Bennett race. Its illustrations of the Killarney district are particularly good.

ROOMS have been engaged at Athy for a large number of employees of the Panhard-Levassor Company. Hamilton's Hotel will be the head-quarters of the party.

DURING the Irish Fortnight Messrs. J. Hutton, Sons and Co.'s garage will be open free of charge to all motorists from a distance. Prior intimation of a desire to take advantage of this

tion for all. A correspondent points out that Waterford, being a seaport in direct communication with New Milford daily by mail steamers of the Great Western Railway, and with Bristol bi-weekly, would probably be popular with many. There is a grand road from London to Bristol, where motorists could ship their cars direct to Waterford, in which town is situated one of the largest repair shops and garages in Ireland. There are several first-class hotels, and the town is beautifully located midway between the course and Cork, where the motor-launch trials are to take place during the automobile fortnight. The roads from this point to the course, as also to Cork, will compare favourably with any in Ireland.

New candidates for membership of the A.C.G.B.I., include the Earl of Clonmel, Capt. G. R. J. Hennessey, Capt. J. O'Neill-Power, and Mr. H. H. Smiley, of the Ulster Club, Belfast.

At Dundalk, petrol is obtainable from Mr. John Rea, Messrs. Williamson, and Mr. Pon Turner. The latter gentleman has a factory in Francis Street and repairs motor-cars. Ordinarily his stock of motor spirit is about 40 gallons, but, unlike other Irish



Photo by]

On the Gordon Bennett Course.—Ballyshannon Cross Roads.

[W. Lawrence, Dublin.

offer should be made to the firm at 115, Summer Hill, Dublin. They have just issued a useful map of the course, which they will send to all motoring applicants.

ALTHOUGH the West of Ireland is not included in the official itinerary, many motorists will make their way thither, and at Connemara and Achill will be delighted with many miles of grand picturesque lake and mountain scenery. The panoramic view of Killery Bay for eight miles, with its wild romantic mountains towering into the sky, and the volcanic-like "Mweelrea" (2688 feet) at the entrance; the wild grandeur of Kylemore Pass and Lake, with the "Twelve Pins," 2,000 feet, in the background; the silvery lakes Glendalough, Derryclare, Inagh, the sea cliffs and headlands of Clifden and Achill, washed by the broad Atlantic, are all points of beauty not to be omitted in any extended tour. All who contemplate visiting these scenes will find the officials of the Midland Great Western Railway of Ireland at Broadstone Station, Dublin, veritable encyclopedias on the subject.

As there is every appearance of a very large number of motor-cars going to Ireland for the Gordon Bennett race, it is quite possible that Dublin will be overtaxed to afford accommoda-

tion for all. he recognises how inadequate such a quantity will prove in July, and is arranging accordingly.

IN connection with the race, the Dublin and Glasgow Steam Packet Company, and the Glasgow, Dublin, and Londonderry Steam Packet Company, Ltd., have arranged with the Scottish Automobile Club to convey automobiles from Glasgow to Dublin at the rate of 45s. 10d. per ton, with a minimum of 47s. 3d. On the other side the rate for the conveyance of motor-cars over the Belfast and Northern Counties Railway will be 6d. per mile per car, station to station, with a maximum weight of 50 cwt., and a minimum charge of 7s. 6d. at owner's risk. An additional charge of 25 per cent. will be made when the cars are consigned at the company's risk.

MARYBOROUGH will be a point of vantage in connection with the race, and there are several convenient places in the locality from which to view the race, notably the Rock of Dunamase, Ballymacken Cross, Lator's Hill, the Limekiln, the street of the town of Stradbally, Bankers' Hill, and Meindy Gap. Maryborough and Stradbally have each accommodation for visitors, and we hear that it is still possible to obtain country cottages in the district on reasonable terms.

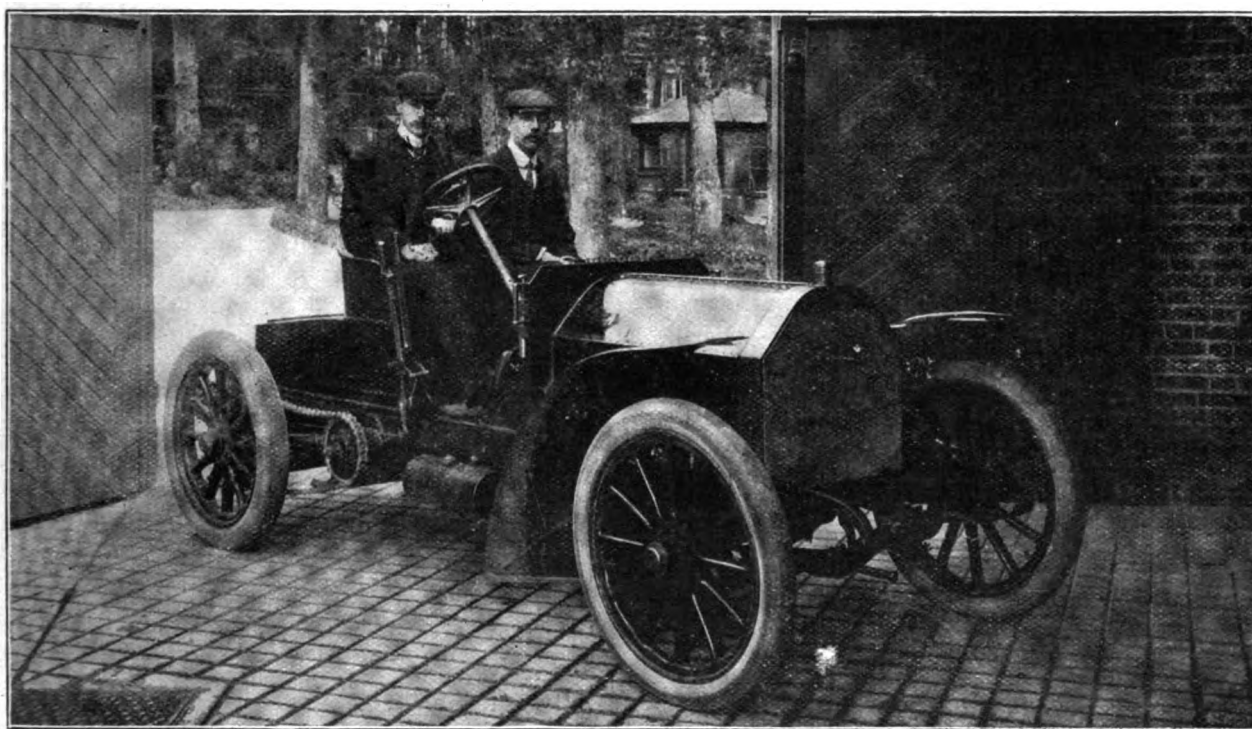
STREETS AND HIGHWAYS.

OUR article last week on the "Problems of Traffic" served to show the complexity of the subject, and the difficulties that will attend the solution of the matter. Diverse interests have arisen to claim precedence and consideration, and all these varying factors have to be conciliated before anything like general satisfaction with the condition of things results.

It is significant of the universal dissatisfaction now prevailing, that the two Labour members elected to the House of Commons during the present year should have already signalled their Parliamentary careers by the introduction of a Bill to provide for the regulation of traffic in towns. The preamble sets forth that the measure is drafted with a view to the better regulation of traffic in the streets, and for the prevention of accidents. The Bill would leave it optional to any local authority to adopt its provisions by simple resolution, and its main clause is as follows:—"Notwithstanding anything contained in the Highway Act, 1835, or in the Towns Police Clauses Act, 1847, no person shall act as the driver of, or have sole charge of more than one

recognising the importance of the road problem warrants our reiteration of the demand for a thorough and exhaustive inquiry into the whole subject.

The matter is not merely one for the better regulation of traffic in the streets of our great towns. There are country lanes and rural thoroughfares which require examination and thorough overhauling. According to the provisions of the Highways Act, 1835, any owner of land on which hedges or trees are growing adjoining any causeway may be summoned if his hedges or trees are not pruned or lopped in such a way that they cause no obstruction to the highway. As a matter of fact hedges have encumbered the pathway along miles of the countryside, and grass paths have been allowed to encroach upon the carriage-road in a way that the Act of 1835 never contemplated and was intended to prevent. Custom has allowed the practice to continue until few people now know the obligations of owners with regard to the matter. Hence the need for that comprehensive inquiry which seems eminently desirable. For instance, no tree or shrub may be planted within fifteen feet of the centre of the highway. Such is the law—more honoured in the breach than the observance. This matter of country roads has become



Mr. G. Higginbotham, of Macclesfield, on his 60-h.p. Mercedes.

cart or carriage drawn by one or more animals in any street, in the district of a public authority, and no person shall fasten, or allow to be fastened, to the rear of any such cart or carriage any other cart or carriage drawn by one or more animals, or any animal drawing a cart or carriage, and any person acting in contravention of this enactment shall be liable to a penalty not exceeding twenty shillings for each offence."

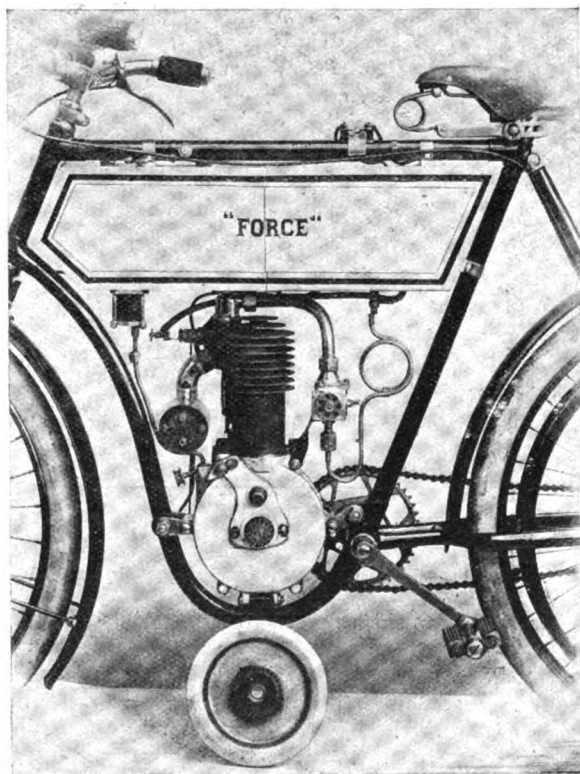
Apparently the Bill introduced by Mr. D. J. Shackleton, the M.P. for Darwen, and supported by Mr. W. Crooks, the new member for Woolwich, is intended to apply to horse drawn traffic only. Motorists would welcome any regulation tending to maintain good order on the highway; but here again, in this piecemeal legislation, we have a capital illustration of the point previously urged in these columns. A glance at this Bill reveals how inadequate are its provisions, taking no cognisance of the newer forms of locomotion, and being conceived in a somewhat narrow line of thought. But the fact that Labour men can unite with those of other political parties, like the Hon. J. Scott Montagu, M.P., Mr. Henry Norman, and the Irish members, in

imperative, and one of the most important benefits that the Gordon Bennett race will confer on Ireland is the object lesson that will be given along the course as to the clearing of obstructive corners, the cutting of hedges which absurdly hide the view of the roads in a locality, and the general "spring cleaning" of the highways. A similar tendency is necessary in many Devonshire parishes and elsewhere in Great Britain, and it would have the advantage of facilitating the new movement with which the interests of automobilists are identified. These considerations need scarcely be further urged; but, in view of the introduction of the forthcoming Government Bill dealing with automobilism, we trust they will be studied closely by all having influence with legislators and with administrators.

NOT all motorists travel too rapidly, for at a meeting of one of the Irish councils it has been stated that three motor-cars passing through Athy recently went so slowly that they kept in the way of an a.s.s cart.

THE FORCE MOTOR-BICYCLE.

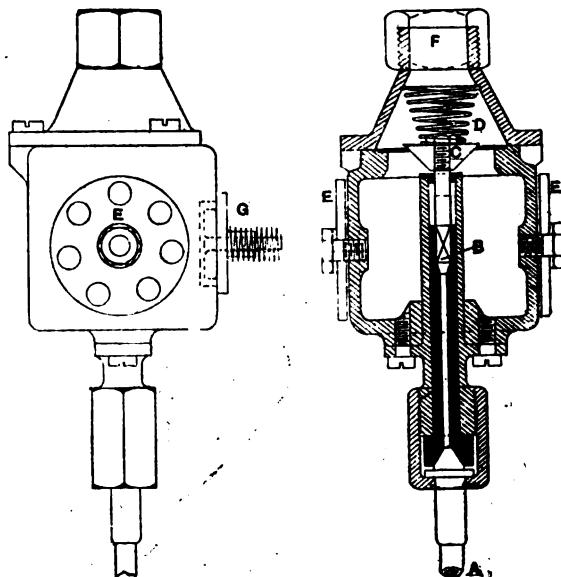
HEREWITH we give an illustration of the new motor-bicycle, known as the "Force," which has lately been put on the market by the Woolliscroft Motor Company, Limited, of Coventry. The main point kept in view in the machine has been simplicity in design, with the idea of reducing cost of production to a minimum, consistent with reliability and efficiency. Endeavour has also been made to render control so easy that any ordinary cyclist can manipulate the machine on his first ride. The machine is of the loop frame type, a 2-h.p. motor being carried in a vertical position, low in the frame, so as to obviate sideslip and give greater tank capacity. Although the battery and coil are both fitted in compartments in the single tank employed, the petrol capacity is just over $1\frac{1}{2}$ gallons. The cylinder dimensions are 70 mm. by 70 mm., the engine developing 2-h.p. at a speed of 1,000 revolutions per minute. Simplicity of control is obtained by connecting a switch arrangement to the handle-bar lever, which also actuates the exhaust valve lifter, thus the movement of two fingers of the right hand is sufficient to at all times control the engine, while the objectionable exhaust-box explosions which sometimes follow the lifting of the exhaust valve are rendered impossible, as one cannot raise the exhaust valve without at the same time interrupting the electrical circuit. The attachment of the motor to the frame is by means of a strong hinge lug in the bottom of the loop, and the vertical position is normally maintained by means of a pair of clamp plates which firmly tie the crank case to the bottom bracket and the front portion of the loop respectively. When the bolts holding these clamp plates are slackened, the



1.—The Force motor-bicycle. The driving pulley is dismantled to show the reduction gear.

latter, being each slotted at one end, may be detached hookwise from the frame lugs, thus rendering it possible to swing the engine sideways to an angle which facilitates access to the valve chamber, etc. A novel driving gear system is employed, which it is claimed presents an unique combination of advantages. The belt pulley is not, as usual, fitted to the crank shaft, but its place is taken by a small steel pinion. This in turn meshes with a toothed wheel twice its diameter, the latter being securely fastened to the interior of a belt pulley double the size of those generally

used to obtain a corresponding ratio of gear. The advantage claimed for the arrangement is that it more than doubles the grip between belt and pulley. The belt pulley is centred on a stud carried by an adjustable quadrant, which is provided with a milled headed screw, rendering the tightening of the belt a similar operation to that performed in tightening the chain on an ordinary bicycle. The automatic carburettor used in connection with the machine, shown in Figs. 2 and 3, is claimed to give a perfect working mixture for any engine speed. This is effected by setting the discs EE to give sufficient air for a good reliable starting mixture. The supplementary air valve G remains closed until the engine attains a certain speed, when it



Figs. 2 and 3—Vertical elevation and section of Force carburettor.
A, Petrol supply pipe.
B, needle valve regulating petrol supply.
C, Combined valve and baffle.
D, spring controlling valves B. and C.
E E, air regulating discs.
F, mixture outlet to cylinder.
G, supplementary air valve.

commences to open, admitting an increasing proportion of air to the mixture as the engine speed rises; thus it obviates the necessity for the rider to interfere with the carburettor, while it renders a carburettor lever on the frame tube unnecessary, the only lever so furnished being that which advances or retards the ignition. The petrol enters by the pipe A, and on the suction stroke of the motor the valve C is lifted against the action of the spring D, spirit being drawn in past the needle valve B. As regards the lubrication, a small compartment is partitioned off at the forward end of the tank. Underneath this compartment is a small transparent lubricator, which is filled by a movement of a small lever on the top of the tank, and within easy reach of the rider. A reversal of this lever cuts off the supply from the tank, and at the same time opens the connection to the crank case, whence it is rapidly drawn by the suction of the piston.

THE United Metal Industries, of Masshouse Lane, Birmingham, have sent us a copy of their illustrated price list, which comprises acetylene, paraffin, and electric lamps, the "W" motor-car chains, lubricators, coils, and a variety of motor-car accessories.

THE British Consul at Buenos Ayres reports that only twenty-eight automobiles were imported there last year, but the appreciation of them is increasing, and a demand, no doubt, will shortly arise.

GENERAL OLIPHANT, commanding the Home District, 4th Army Corps, has applied for the use of motor volunteer cars, one car per day, from May 12th to May 30th. Capt. Schlosser, Signalling Officer, Eastern District, 4th Army Corps, has applied for the use of a motor volunteer car for his long-distance signalling operations during the Whitsuntide holidays.

CONTINENTAL NOTES.

BY "AUTOMAN."

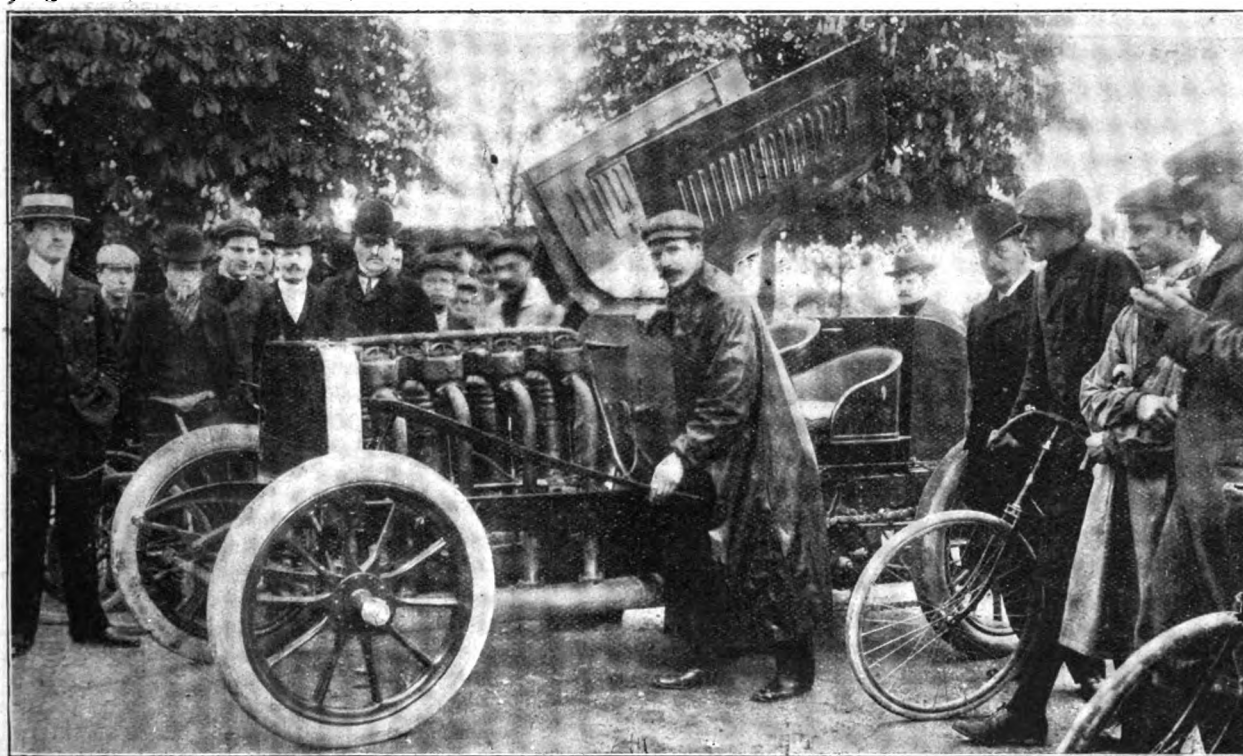
THERE is nothing for automobilists to talk about just now but the great International Competition from Paris to Madrid. On Friday, May 15th, at 6 o'clock in the evening, the entries were definitely closed, the last entry being M. Rudolf Darzens, of the Paris morning paper *Le Journal*, who no doubt in starting last proposes to pick up the news of the road in the most satisfactory and complete manner. M. Darzens has the No. 314.

THE total entries thus reach the record figure of 314, but thirty-nine have cancelled their engagements or have been disqualified for various reasons, leaving 275 competitors, divided into 112 heavy cars, sixty-four light cars, forty voiturettes, and fifty-nine motor-cycles. The list for the Paris-Vienna contest of last year totalled 205 cars and cycles, of which number 137 started. There will probably be a much greater proportion of starters this year. The English competitors comprise Messrs. C.

of the Republic, who walked over from the Elysee to see the event. Forty-seven cars will attempt the whole journey, and six more will join the caravan at the frontier. The total number of passengers carried is 180.

THE whole of this week has been spent in the final preparations for the Racing Section, and in front of the Automobile Club, and around the gates of the Tuileries Gardens, there have been large crowds from morning to night, watching the arrivals of racing cars. The first of the racing Mercedes cars was brought into France by Baron De Caters, and it very much resembles the 60-h.p. type, with this difference, that the driver is seated over the back axle, with his steering gear much more inclined. The engine is said to give a little more than 90-h.p., and is a four-cylinder of the well-known Mercedes type.

I SAW one of the racing Panhard and Levassors last Sunday, crossing the bridge of Suresnes. The engine is reported to give 80-h.p. The single spring over the front axle has been abandoned this year, as also the frame of armoured wood, which has been



Mr. Henry Farman and his 80-h.p. Panhard Paris-Madrid Racer.

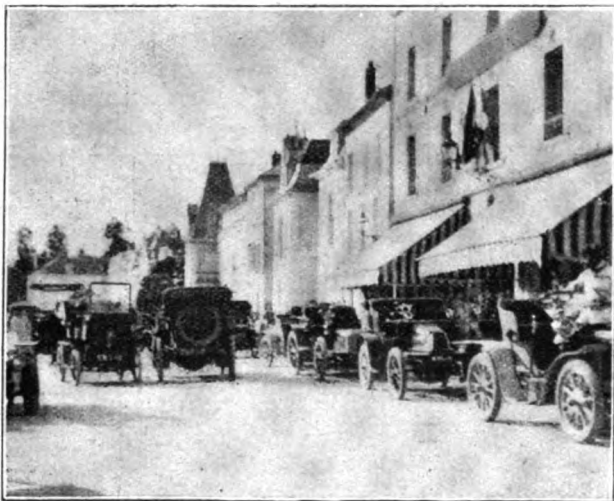
Jarrott (De Dietrich), H. R. Kirk (Napier), S. Girling (Wolseley), Hon. C. S. Rolls (Panhard), E. H. Arnott (Werner), S. F. Edge (Napier), Mark Mayhew (Napier), H. Austin (Wolseley), J. A. Holder, F. Jackson (Eagle), L. Porter (Wolseley), Lord Carnarvon, A. Du Cros, Harvey Foster (Wolseley), J. Ball and J. J. Leonard (Humber motor cycles), C. W. Hacking, S. Bowkett, and A. C. Wright (Ormonde motor bicycles), and G. Gordrey (Rex motor-bicycle). The weighing-in of the cars for the race was commenced on Tuesday, seventy-five being scaled. A 50-h.p. Wolseley machine attracted a good deal of attention from the spectators. As already announced, the start takes place early on Sunday morning.

By the time that these notes appear in print, the Tourists' section of the race will be crossing the frontier on the way to Madrid. They started on Wednesday, May 13th, under blue sky and bright sunshine, on their fourteen days' trip across a most interesting and picturesque country. Amongst the distinguished people who went to witness the start was the President

replaced by stamped steel, so successfully inaugurated in the Mercedes car. The Panhard car is much similar to last year's type, but the radiator is a sort of compromise between the honeycomb and the old style. The inlet and exhaust valves are mechanically actuated, and there are three speeds and reverse. The motor is not parallel with the ground, but the front end is slightly dropped, so that the fly wheel may be raised from the ground. The change of speed gear and clutch shaft are also inclined in consequence. There is no silencer, or rather the silencer has been replaced by a simple exhaust pipe, and, notwithstanding this, the car makes little or no noise.

I WAS fortunate enough to have the opportunity to assist at the first trial of the Hotchkiss car, which, like the Panhard, has its silencer replaced by a simple exhaust pipe, and which is also very silent, and runs with a smoothness similar to the car of last year. The great feature of the Hotchkiss car is the cardan drive, which works with perfect smoothness, and is said to be as supple as the chain drive.

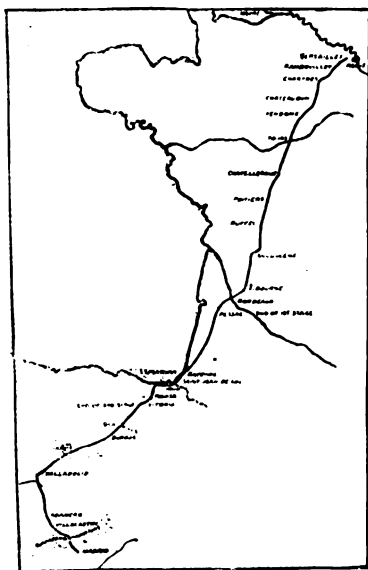
In the Hotchkiss car the throttle has been entirely discarded in favour of the variable lift of the inlet valve, which not only enables the engine to be started easily, but allows the speed of the engine to be varied from 100 revolutions to its maximum speed under conditions of perfect economy, and leaving the action of the carburettor to be perfectly regular and to need no adjustment. The front axle and steering wheels are entirely novel, and combine great strength with perfect steering, as a



The Paris-Madrid Race, Tourist Section. A Snapshot at Lunch Time.

line dropped perpendicularly from the centre of the so-called pivot on which the front wheel turns reaches the ground directly in the centre of the tyre.

THE chief feature of the new Mors car is the wind shield with which it is covered, which makes it look like an inverted boat. The engine, which is said to give 80-h.p., has steel cylinders, and is all in one piece. It had been the intention of the Mors firm to supply the motor with mechanically-driven inlet valves.



The Route of the Paris-Madrid Race.

However, for want of time, or for other reasons, this disposition was abandoned at the last moment, and the inlet valve of the motor is automatic, and is placed in the centre of the top of the cylinder.

THE Rhenish Automobile Club held a 100-kilometre race from Mannheim to Baden-Baden on the 10th inst. In the

general classification Herr H. Opel, on a 20-h.p. Opel car, was first in 2 hrs. 14 min., and Herr Jean Ruhl second, on a 12-h.p. Benz-Parsifal in 2 hrs. 17 min.

A HILL-CLIMBING competition over a kilometre course is to be held at Perigueux, France, on the 1st June, under the rules of the A.C.F. Eight classes, ranging from motor-cycles to heavy cars, are provided for in the programme.

AMON: the latest additions to the list of competitors in the Circuit des Ardennes is that of the Star racer entered by Mr. C. Cordingley. The vehicle will be driven by Mr. J. Lisle.

THE automobile clubs of Antwerp and Flanders are organising an automobile week to be held at Ostend, from July 12 to the 19th. The programme is as follows:—July 12th, 100 kilometre race for racing cars; July 13th, 100 kilometre race for touring cars; July 14th, mile and kilometre contests for racers; July 15th, mile and kilometre races for touring cars; July 16th, motor-cycle races; July 17th, "Concours d'Elegance" and flower fete; July 18th and 19th, short tours in the district.

THE Circuit National of Belgium came to an end on the 14th inst. Included in the programme was a kilometre speed contest (flying start) at Namur, the winner in the car section being Baron de Crawhez, whose time on a 10-h.p. Panhard was 1 min. 16½ sec. M. Elskamp, on a 2½-h.p. Minerva, was the winner in the motor-cycle section, his time being 1 min. 3 sec. A hill-climbing competition over a course 2½ kilometres long, was also held. In the car section, the winner was M. Langlois, who, on a 20-h.p. Vivinus covered the hill in 4 min. 36½ sec., while M. Flamand, on a 2½-h.p. Minerva, made the best time not only in the motor cycles section but of the day, doing the climb in 4 min. 9½ sec.

MESSRS. GROSE, LIMITED, have opened the Central Motor Garage at Pike Lane, Marefair, Northampton.

At a meeting of the Association of Chief Constables in London a general feeling was expressed in favour of all motor-cars being numbered, and in addition bearing the name of the district or division in which the owner resides. These numbers and names to be painted conspicuously on the cars, and to be illuminated at night. This plan would involve some kind of registration. A committee was appointed to draw up a scheme on the subject for submission to the Home Secretary.

A MAP of England and Wales, showing those places where main batteries for electric automobiles and ignition cells for petrol cars may be recharged, and a directory of central stations and private premises where such facilities can be obtained, is in course of preparation by the "Electrical Times," 8, Bream's Buildings, Chancery Lane, E.C. The editor of our contemporary will be pleased to hear from readers who have charging facilities, or who know where they can be secured either in London or the provinces. Information is wanted as to the source of supply and maximum voltage and current available, as well as the charge for current per unit or per cell, and any facilities for garage and repairs. Particulars should reach our contemporary not later than the second week in June.

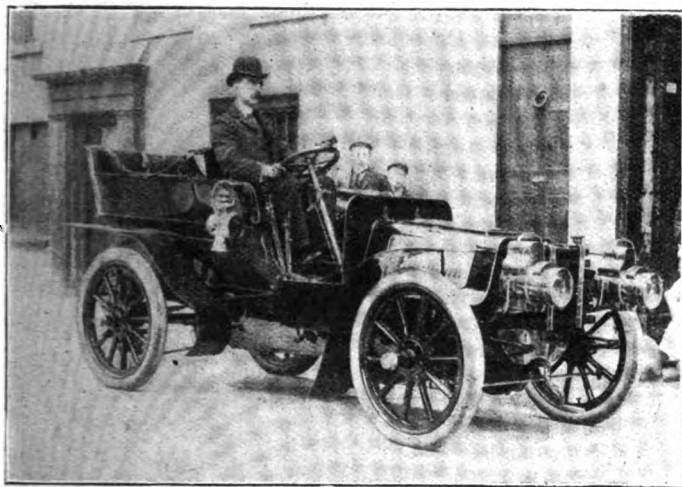
THE laughter aroused by the experiences of an Irish R.M. is likely to be continued by Messrs. E. A. Somerville and Martin Ross in their sketches, "All on the Irish Shore," in which the eccentricities of horses, men and women are hit off with a quaintness that is of the soil. The book has been created in an atmosphere of native humour and observation, and those who would fain appreciate the character of the rural districts of Ireland will find a good introduction in this volume of stories which Messrs. Longmans, Green and Company have published. In only one story has the motor-car been introduced, and that to chase a piebald dog that had had a dolorous existence, but never such an awful experience as when the "Bollée" followed behind. That, however, is incidental; the stories are of horses, and "Fanny Fitz's Gamble" is certainly the best of a bunch of typical Irish tales.

HERE AND THERE.

A HULL Motor Club is in course of formation.

THE May Day parades of heavy motor-vehicles will, in future, be organised by the A.C.G.B.I.

WE have for some time known the Westminster Motor Car Garage by name, but only recently have we become aware of the extent of the premises of this firm. They are capable of containing about fifty cars, but their position in Kensington Place, off Page Street, Westminster, is somewhat difficult to find



Mr. L. Savory, of the Westminster Motor-Car Garage, on his 20-h.p. M.M.C. Car.

for the first time. Well-equipped workshops and stores with a capable staff of mechanics are also available, so urgent repairs can be effected at all times, while the charging and maintenance of electric vehicles is undertaken, a special plant having been put down for this purpose.

THE Ariel Motor Company, Limited, have secured an order from the Water Committee of Birmingham for a 16-h.p. car for the use of the Water Department's engineer upon the Welsh water scheme.

THE Belfast Trade and Labour Council has passed a resolution requesting the Corporation to introduce a clause into the proposed Belfast Tramway Bill for the purpose of obtaining powers to run motor'buses in the city for the convenience of workmen.

SEVERAL hundred persons congregated outside the Great White Horse Hotel, Ipswich, the other afternoon, attracted by two motor-cars which stood at the door of the well-known hostelry. The cars were owned by Mr. H. S. Holden, of Easthampstead Park, Wokingham, who, having been on a tour through the country, was on his way back to London.

IN opposing the scheme for a rail-less trolley car service in the Stroud and Cheltenham district, Sir J. Wilkinson, the general Manager of the Great Western Railway, stated recently to a select committee of the House of Commons that the Great Western had experimented with a petrol engine, but it had not been a success. They had decided to try a service of steam-motor-cars between Chalford and Stonehouse, and he had approached the Board of Trade on the matter.

MESSRS. LAURIE AND MARNER, the well-known carriage builders, have just completed a petrol motor-omnibus intended for a public service about to be started at Aalesund, Norway. The chassis is a 12-h.p. two-cylinder Vincke-Halcrow, having four speeds forward and one reverse, the transmission being on the Panhard system. A novel feature of the vehicle is the division of the body into two separate compartments, first-class passengers being in the front and entering from the side and the third from the rear. The 'bus, which is built to carry about fourteen to fifteen persons, runs on 3 in. solid rubber tyres.

THE 1904 Nice week is to be held from the 20th to the 28th March.

TENDERS for a motor steam fire engine will be received by the Beckenham (Kent) Urban District Council up to Monday, the 1st prox.

A SUB-COMMITTEE of the East Sussex County Council is considering an application from the Chief Constable to provide a motor-car for his use.

THE petrol motor-omnibus running between Lewisham, Lee Green, and Eltham appears to be well patronised. We saw the vehicle on Tuesday, and were much struck with the quiet running of the engine when the 'bus was standing.

CALLING in at Messrs. Thrupp and Maberly's carriage building establishment the other day we had an opportunity of inspecting the handsome private omnibus body they have just fitted to the chassis of a 28-h.p. Mercedes for Mr. S. B. Joel.

A PUBLIC motor-car goods service from Stockingford into Birmingham is projected. A private haulage syndicate is said to be responsible for this enterprise, and there will probably be an early meeting of the Nuneaton and Coleshill branches of the Warwickshire Farmers' Association in support of the enterprise.

MR. JAMES WILSON, of the Elswick Cycle Company, who left Edinburgh at midnight on the 11th on a non-stop run to London in his motor-car, arrived in London on the 12th at 5.55 p.m. Mr. Wilson left London on Wednesday for Land's End, with the view of doing the journey from there to John o' Groat's.

THE Birmingham Aluminium Casting (1903) Company, Limited, has been registered on 5th May, with a capital of £46,000, to acquire the assets and undertaking of the Birmingham Aluminium Casting Company, Limited (now in liquidation), and to adopt an agreement between the said old company and Mr. T. T. Curtis.

THE accompanying illustration shows the first of a fleet of motor-omnibuses Stirling's Motor Carriages, Limited, are building to run from Johannesburg to Auckland Park, an estate about three miles to the north-west of Johannesburg. This car is fitted with a four-cylinder motor developing 24-h.p. An important feature is the water-cooling arrangement, in which the usual water circulating pump is dispensed with. A combined water-tank and radiator fitted on the front of the vehicle and forming a dash



board contains about ten gallons of water, which is capable of keeping the 24-h.p. engine perfectly cool. On a 100 miles trial last Saturday in the hilly country in the South of Scotland the vehicle, loaded with 30 cwt. of pig-iron, made an excellent performance. The low speed was never once used, most of the hills being mounted on the top gear, and only once was the intermediate speed used. The omnibus has seating capacity for fifteen passengers and driver. It is fitted with solid rubber tyres and its weight ready for the road is 38 cwt.

OSTEND is to have an "automobile week" from July 12th to the 19th.

THE Swiss Automobile Club held a kilometre race near Geneva on Monday last, the best time being 39 3-5 sec.

L'AUTOMOBILE CLUB FOREZIEN, of St. Etienne, will hold a hill-climbing competition from Belle Vue to Bourg-Argental on Sunday next.

TO-DAY (Saturday), the Scottish Automobile Club will hold a hill-climbing competition on Kirkfield Hill, Lanark, over a course measuring 701½ yards, and having an average gradient of 1 in 9.

THE Lanchester American Patents Syndicate, Limited, has been registered to acquire the American patents for and rights in certain inventions by Mr. F. W. Lanchester, relating to mechanically-propelled vehicles. The first directors are Messrs. F. W. Lanchester, A. Whitfield, and J. V. Pugh.

THE second of a series of five monthly club runs of the Reading Automobile Club for a challenge cup took place on Wednesday, last week, starting from Friar Street, Reading. The route was *via* Odiham and Alton to Farnham (where tea was taken at the Bush Hotel), and the return *via* Aldershot, Farnborough, Yateley, Eversley and Arborfield.



Jackson Tourist Car Mounting a Hill at Syracuse, U.S.A., which has a Gradient of 18 per cent.

IN connection with Lord Iveagh's scheme of improved transit in Ireland, a motor-car service will probably be established between Athea, Knocknagoshel, Brosna, and other villages which are now between five and seven miles from any railway station.

A DOCTOR who six months ago bought an Albion car through Mr. John Love, of Kirkcaldy, has been giving his testimony to the value of the automobile to a Scotch press representative. He says the upkeep of a motor-car is cheaper than the cost of a horse carriage. A rope-starter is fitted to the car, so that the engine can be stopped while the doctor is visiting his patient, and started from the seat by the driver.

MESSRS. JONES AND Co., of Talbot House, Lichfield, write that they are in a position to supply wholesale "Matchless" motor spirit of about 700 s.g. at 9½d. per gallon, ex store Birkenhead, in free barrels. The railway companies will only carry ton lots, and from station to station, but this difficulty could be got over if two or three buyers in a town purchased together the necessary six or seven barrels. Messrs. Jones also point out that a less quantity could be ordered and the carriage paid on a ton. The value of the free barrels would be about equal to the carriage.

M. DE COSMOS is reported to have made a kilometre in 24 sec. on a 40-h.p. car on the Vise road, near Liege.

THE Motor Cycling Club have decided to hold their first 200 miles Reliability Trial for the S. F. Edge Trophy on Saturday, June 27th.

THE Midland Automobile Club will have a club run to Stratford-on-Avon to-day (Saturday). The head quarters will be at the Shakespere Hotel.

THE Champion Motor-Cycle Company have opened premises at 136, Leeds Road, Bradford, for the supply of petrol, spare parts, etc., and for the repair of motor-cycles.

THE London Motor Engineering Company, Limited, of 87A, Wellesley Road, Kew Bridge, is prepared to find accommodation for about fifteen cars.

FOR leaving a horse and cart unattended, outside the Crown Inn, at Nutley, on the 23rd of April, A. L. Brooker has been cautioned by the Basingstoke Bench and discharged on payment of the costs, 4s.

THE Blackpool Motor Garage Company are about to open a large new garage in Rigby Road, Blackpool. It will be equipped for repair work of all kinds and a stock of petroleum spirit and accessories will be kept.

MR. EDGAR SMITH, of Halifax, has taken large premises off Northgate, in that town, for a motor garage, where he will store about a dozen cars. Repairs will also be undertaken. Mr. Smith has been appointed sole agent for Halifax and district for the Darracq and Ariel cars.

"THE Lubrication of Motor-cars, Vehicles, and Cycles" is the title of a booklet which has been sent us by Messrs. J. R. Grindon and Sons, oil merchants, of Bristol. It gives particulars of their various "Temple" motor lubricants and greases, while a number of useful hints on motor-cars are given at the end.

EARLY next month the premises at 19, Otago Street, Great Western Road, Glasgow, at present occupied by a firm of carriage hirers, will be opened as a motor-car garage by Mr. E. M. Blakely. There will be accommodation for from forty to fifty cars, and provision will be made for executing repairs and supplying all motor requisites.

THE Continental Caoutchouc and Guttapercha Company have just issued a little book containing most exhaustive instructions for the manipulation of Continental motor tyres, hints on the best way of prolonging their life, treatment of wear and tear, the repair of punctures and other damages, etc. All users of pneumatic tyres on motor vehicles should obtain a copy of the booklet, which will be found extremely useful in many ways.

THE other day Mr. Brook-Shaw, of the Sheffield Automobile Club, left that city by the 4 a.m. Midland express for London, which was reached soon after half-past seven. Leaving on a 10-h.p. Gladiator, he returned via Barnet and ran without a stop to Buckden (61 miles). Whilst travelling slowly through the village he was stopped by the inevitable policeman, and then proceeded to Grantham (110 miles), where a halt of half an hour was made for luncheon, thence by Newark and Retford to Sheffield, which was reached at 10.30 p.m. A quart of lubricating oil was used and 5½ gallons of Pratt's motor spirit consumed, so that the cost of running 170 miles works out to 9s. 8d.

THE Hele-Shaw Patent Clutch Company, Limited, has been registered with a capital of £50,000 to acquire the business of engineers and patentees now carried on at Pembroke Place, Liverpool, under the style of the Imperial Engineering Company, to acquire certain patents and rights relating to friction clutches and brakes, and applications thereof; to adopt an agreement with Messrs. H. S. Hele-Shaw and J. E. Jose; and to carry on the business of mechanical engineers, etc. The first directors are Messrs. H. S. Hele-Shaw, J. E. Jose, and T. T. Vernon, each of whom may retain office for life.

CORRESPONDENCE.

THE KREBS CARBURETTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It seems to be generally believed that the new Panhard carburettor is the first attempt to automatically regulate the mixture at all speeds. A booklet published giving particulars and sketches of it states that Mercedes, Georges Richard, Crouan, and others have experimented in this direction, but unsuccessfully, owing to the fact of these people trying to regulate it by the governor. This booklet states that "all other inventors have adopted this (the governor regulation) for want of a better one." This implies that none but Commandant Krebs have tackled direct control of supplementary air by suction controlling a diaphragm or similar device. I find, however, that Bernardi in 1886 invented a carburettor in which a valve opens more or less on the mixture pipe by the suck of the engine, and so varies the mixture at different speeds as required. In 1887, Haddon automatically regulated the auxiliary air by the speed of the engine causing more or less vacuum and drawing round a rotary valve, thus disclosing suitable ports by means of which pure air diluted the mixture. In 1897, Boulton described a carburettor in which an adjustable suction

for the movement generally if these people would be content with a moderate speed, and would see that more precaution was used while driving. Maybe there is pleasure in running a racing machine that will rip along at the rate of forty to fifty miles an hour, or more, and while you are rapidly turning a bend in the road see a horse scared into fits or some pedestrian making high leaps for a place of safety, but I believe if the gentleman who was "at the wheel" was occupying the place of the flying pedestrian there would be some hard feelings on his side. How much more pleasure there is in letting your car hum along at a moderate pace, say fifteen or twenty miles an hour, while in the country, and enjoying the scenery as you go, than to rush along at top speed leaving a trail of dust behind.—Yours truly,

MODERATUM.

FRICITION TRANSMISSION GEAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was interested in the letter on the above subject in your issue of the 9th inst., and beg to state that it is quite possible to make a very efficient gear of this type if properly designed. I have been experimenting and have produced a car fitted with frictional transmission, giving very good results. The car I have on the road has an 8-h.p. engine, and weighs 18½ cwt.



M. Baras, on the 30 h.p. Darracq Light Racer he will drive in the Paris-Madrid Race.

[*La France Automobile*.]

diaphragm allowed supplementary air to be drawn into the mixture as the speed increased. In 1900, Mills patented a device in which a cone, controlled by a light spring, is placed in the carburettor and the suction increase, or *vice versa*, adjusts the air and petrol mixture automatically. None of these experiments appear to have carried out the idea exactly as done by Krebs, but the method adopted by him appears to vary more in detail than in principle, and I think it is quite feasible to control the supplementary air entirely automatically in several ways that shall give results quite as correct as a flexible diaphragm.—Yours truly,

A. E. S. CRAIG.

MODERATION WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—While, as a motorist, I am willing to make every allowance in favour of those who use motor-cars, it cannot be denied that there are a great number of automobilists who do not use the roads with a due regard to the comfort and convenience of others, and, unfortunately, these create a prejudice against automobilism to such an extent that it would not be surprising if restrictions were imposed upon the many in consequence of the action of the few. It would seem that the main desire of many wealthy motorists is to get a record-breaking car which will tear along the public highways, striking terror to the people's hearts. It would be much better

unloaded; I have taken five people in it up hills 1 in 10 at six miles per hour, and over twenty miles per hour on the level with solid tyres. The car has now run over 2,000 miles, using less than one gallon of petrol per twenty-five miles. I think you will agree with me that this is not very inefficient considering the weight and the tyres used. The new cars I am making will be very much lighter and have many improvements introduced. The gear is quite different to other friction gears I have seen or heard about. I write this merely to tell you that friction gears are not so hopeless as some people make out, and they possess many advantages over other gears.—Yours truly,

W. F. THOMAS, A.M.I.M.E.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Re Balladeur's letter on "Friction Transmission Gear," I first saw a friction driven car at an Exhibition and although dubious of the method, was agreeably surprised at the ease of running, silence of drive, and hill-climbing capacity of a comparatively small-powered car which I tried. We climbed all the hills around the district wonderfully well. After this, I again tried the car at the Agricultural Hall, where my previous favourable opinions were thoroughly confirmed.

I do not know of Le Pape's experiments, but it is quite evident that this idea works.

When running in and around the yard of the Agricultural Hall, the silence of the friction gear was so remarkable in comparison to other cars around, that I am certainly going to have my present car altered by the English makers. There were other points about the car which agreeably surprised me, viz., the splendid and simple way of obtaining the make and break of the magneto ignition, the thermo syphon cooling, the unbroken back live axle,

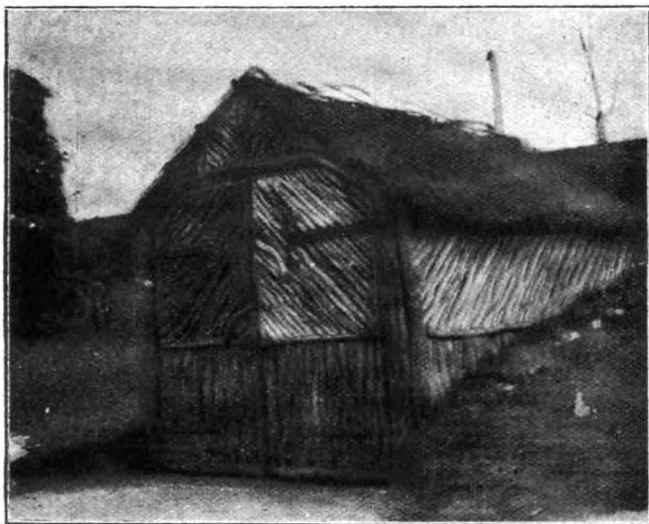
As to friction not sufficiently transmitting power, I personally know of machinery (heavy) which has been friction driven for twenty years satisfactorily, and friction-actuated cranes lifting up to 3 tons.—Yours truly,

GEAR BOX.

PRIVATE MOTOR-CAR STABLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 25th ult. you speak of suitable motor-sheds, so I am sending you a photo of mine. It is built of 1½ in. flooring—walls



and roof. The walls are covered with rustic wood, and the roof thatched with broom; it is thoroughly tight and dry. In hard frost I keep an oil stove near the door to prevent the water-cooler of my car from freezing.—Yours truly,

WALTER CREBER.

DANGEROUS EXHAUST GASES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was glad to see the "Useful Note" in a recent issue regarding dangerous exhaust gases and the necessity of ample ventilation in motor stables, for, having had the nasty experience of being almost asphyxiated by the inhalation of exhaust vapours, I am well aware of their dangers. The engine in my touring car was running rather badly and giving off a thin blue vapour, smarting to the eyes but not disagreeable to the throat or lungs. I stood over the car seven or eight minutes regulating the admission of petrol and then feeling a ringing in my head started to leave the motor house, which, by the way, is almost air-tight and heated, to seek a soft lounge in my library. The next thing I knew was that my face was wet and that a voice far, far away said, "Take a deep breath." I took the deep breath and also a resolve that I should do what I could to warn my motoring friends against this danger.—Yours truly,

FIELDMOUSE.

IDENTIFICATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a young motorist and a medical man I cannot see what objection can be taken to the name and address being plainly painted on the "off side" of a car. If this were done "scorchers" only would have anything to fear, and surely no motorist is ashamed of his name. If such object then let him pay a higher tax for some special plain signification. I pay tax on one motor-car, also for one carriage and on my professional dogcart. I have my name and address painted so as to avoid taxation, and am not ashamed to do so.—Yours truly,

"MEDICAL MAN."

HIGH-SPEED TREMBLER COILS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—So far as my experience goes I think one who is "tired of adjusting the trembler" need not discard his non-trembling coil and De Dion contact breaker. I have a small car with a 4½-h.p. De Dion engine. The necessity for adjusting the trembler occurred so frequently that I was on the

point of fitting a wipe contact and trembling coil. Some two or three months ago, however, Messrs. Geipel and Lange placed the Auto-trembler on the English market. I saw that this was what I wanted. I introduced one in the primary circuit of my non-trembling coil and screwed up the platinum screw of the De Dion contact breaker to give a positive contact. Since doing so I can start the engine at once, practically without fail, with the first fall of the "trembler" into the notch of the cam; I never have a miss-fire unless by chance I use too poor a mixture; I very rarely require to adjust the contact. I cleaned the platinum points yesterday for the first time for a month, and I get as much power from the engine as on the fortunate days when I obtained perfect adjustment of the trembler, in the old style.—Yours truly,

ONE WHO HAS ADJUSTED THE TREMBLER.

[Several other correspondents have written recommending the Auto-Trembler.—Ed. M.-C. J.]

THE QUARTERLY 100-MILES TRIAL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. de Wilton states that he did not suggest that the car should have been driven faster. Why, then, did he emphasise in his foot-note that the car was driven "very slowly," seeing that the legal limit was practically maintained all through?

With regard to the right or otherwise of stopping the engine when gravity would propel the car down any hill, this question has since been decided by the Automobile Club. The Committee has come to the decision that, as in France, providing the car itself does not stop, the driver is perfectly entitled to take every advantage of gravity that he can. As already stated, this in no wise compensates for the extra fuel consumed in ascending hills, by at least 30 to 40 per cent. Furthermore, I beg to say that it was admitted to Mr. de Wilton, at the time of the run, that the engine was being stopped when descending hills, similarly as done in French consumption trials.

With regard to Mr. de Wilton's statement that "the engine was stopped for at least 25 per cent. of the run," I challenge Mr. de Wilton to cover twenty-five miles of the official hundred-mile route covered on the occasion of the Quarterly Trial by means of gravity and with his engine stopped, subject to his keeping within the legal limit. With all due respect to Mr. de Wilton, I cannot help contending that the suggestion is an exaggeration or inaccuracy, for anybody acquainted with the official 100-mile route is aware that there is certainly nothing like twenty-five miles of down hill in the whole run. The fact of the matter is that the Chenard and Walcker engine is so quiet that Mr. de Wilton himself did not know whether the motor was running half the time or not.

I should like to add that the challenge to any manufacturer to cover fifty-nine and a half miles on one gallon of petrol in a car weighing, with four passengers, over a ton, over the same course, has not been taken up by anyone.—Yours truly,

A. E. COHEN.

ABOLITION OF CHANGE-SPEED GEAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the use of a compressed air engine in combination with a petrol motor, may we point out that our patent, No. 12136 of 1901, covers such an arrangement, and that we hope shortly to be able to demonstrate its advantages?—Yours truly,

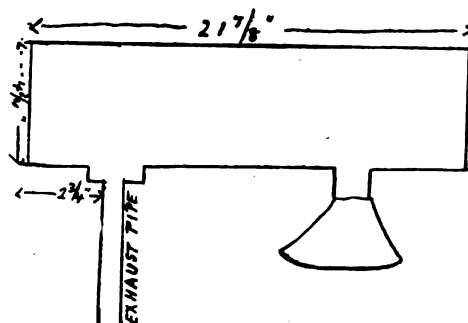
J. ERSKINE MURRAY.

J. ERNEST HUTTON.

A QUERY RE SILENCERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have a small 5-h.p. Panhard motor, and the noise from the exhaust is much more than I like. I send you a sketch of the present



silencer, together with particulars of the engine, and I shall be very glad if any of your readers would advise me what kind of a silencer to put on, and where I can get same.

The motor has one cylinder, 3½ in. diameter and 4½ in. stroke (95 m.m. by 115 m.m.), and runs at a speed of from 850 to 950 revolutions per minute. The outside diameter of the exhaust pipe is 1 5/16 in.—Yours truly,

J. P. SMITH.

STANDARDISATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR.—It is surely time that pressure was brought to bear by the Press and the Automobile Club upon English motor manufacturers and attempts made to insist upon their using fittings of standard sizes. Should even a bolt go wrong, the answer is always the same, "that is a special thread," and one has to send to the makers, who profess to keep replacements but do not.

A short time ago I had a twisted countershaft to my motor-car, and on referring to the maker's book found they professed to keep replacements in stock, but I was kept waiting three weeks before I could get it; and again, now I have a broken ball race, but it has been on order for more than a week, and I cannot get it delivered. The mis-statement that replacements are kept in stock is held out to intending purchasers as an inducement, but they always happen to be out of the one thing which is required. This is the sort of thing which does a lot of harm to the trade, and should be strongly discouraged and exposed. I do hope that something will now be done in the matter.—Yours truly,

E. U. STORY.

MESSRS. FRISWELLS, LIMITED, write:—Seeing Mr. Winter's notes in last week's issue of your valued *Journal*, we shall be glad if he will let us have the machine here to look at. We have no doubt we shall be able to put the matter right in a few minutes.

THE STORAGE OF PETROL SPIRIT.

THE following is a copy of the new regulations, dated March 18, 1903, made by the Secretary of State under Section 5 of the Locomotives on Highways Act, 1896, as to the keeping and use of petroleum for the purposes of light locomotives:—

In these regulations the expression "petroleum spirit" shall mean the petroleum to which the Petroleum Acts, 1871 and 1879, apply, provided that when any petroleum other than that to which the said Petroleum Acts apply is on or in any light locomotive, or is being conveyed or kept in any place on or in which there is also present any petroleum spirit as above defined, the whole of such petroleum shall be deemed to be petroleum spirit.

In these Regulations the expression "storehouse" shall mean any room, building, coachhouse, lean-to, or other place in which petroleum spirit for the purpose of light locomotives is kept in pursuance of these regulations.

1. The following shall be exempt from license under the Petroleum Act, 1871, namely:—

- (a.) Petroleum spirit which is kept for the purpose of, or is being used on, light locomotives when kept or used in conformity with these regulations.
- (b.) Petroleum spirit which is kept for the purpose of, or is being used on, light locomotives by, or by authority of, one of His Majesty's Principal Secretaries of State, the Admiralty, or other department of the Government, and which is subject to special regulations.

2. These Regulations shall apply to petroleum spirit which is kept for the purpose of, or is being used on, light locomotives, and for which (save as hereinafter provided) no license has been granted by the Local Authority under the Petroleum Act, 1871, and shall not apply to petroleum spirit which is kept for sale, or partly for sale and partly for use on light locomotives, and which must be kept in accordance with the provisions of the Petroleum Acts as heretofore.

3. Where for any special reason a person keeping petroleum spirit for the purpose of light locomotives applies for a license under the petroleum Act, 1871, and the Local Authority see fit to grant such license, such petroleum spirit shall be subject only to regulations 8 to 13, and the conditions of such license, in so far as the said conditions are not contrary to the said Regulations 8 to 13.

4. Where a storehouse forms part of, or is attached to, another building, and where the intervening floor or partition is of an unsubstantial or highly inflammable character, or has an opening therein, the whole of such building shall be deemed to be the storehouse, and no portion of such storehouse shall be used as a dwelling or as a place where persons assemble. A storehouse shall have a separate entrance from the open air distinct from that of any dwelling or building in which persons assemble.

5. The amount of petroleum spirit to be kept in any one storehouse, whether or not upon light locomotives, shall not exceed 60 gallons at any one time.

6. Where two or more storehouses are in the same occupation and are situated within 20 feet of one another, they shall for the purposes of these Regulations be deemed to be one and the same storehouse, and the maximum amount of petroleum spirit prescribed in the foregoing Regulation shall be the maximum to be kept in all such storehouses taken together. Where two or more storehouses in the same occupation are distant more than 20 feet from one another, the maximum amount shall apply to each storehouse.

7. Any person who keeps petroleum spirit in a storehouse which is situated within 20 feet of any other building whether or not in his occupation, or of any timber stack or other inflammable goods not owned by him, shall give notice to the local authority under the Petroleum Acts for the district in which he is keeping such petroleum spirit, that he is so keeping petroleum spirit, and shall renew such notice in the month of January in

each year during the continuance of such keeping, and shall permit any duly authorised officer of the local authority to inspect such petroleum spirit at any reasonable time. This Regulation shall not apply to petroleum spirit kept in a tank forming part of a light locomotive.

8. Every storehouse shall be thoroughly ventilated.

9. Petroleum spirit shall not be kept, used, or conveyed except in metal vessels so substantially constructed as not to be liable, except under circumstances of gross negligence or extraordinary accident, to be broken or become defective or insecure. Every such vessel shall be so constructed and maintained that no leakage, whether of liquid or vapour, can take place therefrom.

10. Every such vessel, not forming part of a light locomotive, when used for conveying or keeping petroleum spirit shall bear the words "petroleum spirit, highly inflammable," legibly and indelibly stamped or marked thereon, or on a metallic or enamelled label attached thereto, and shall be of a capacity not exceeding two gallons.

11. Before repairs are done to any such vessel, that vessel shall, as far as practicable, be cleaned by the removal of all petroleum spirit and of all dangerous vapours derived from the same.

12. The filling or replenishing of a vessel with petroleum spirit shall not be carried on, nor shall the contents of any such vessel be exposed in the presence of fire or artificial light, except a light of such construction, position, or character, as not to be liable to ignite any inflammable vapour arising from such spirit, and no fire or artificial light capable of igniting inflammable vapour shall be brought within dangerous proximity of the place where any vessel containing petroleum spirit is being kept.

13. In the case of all petroleum spirit kept or conveyed for the purpose of, or in connection with, any light locomotive, (a) all due precautions shall be taken for the prevention of accidents by fire or explosion, and for the prevention of unauthorised persons having access to any petroleum spirit kept or conveyed, and to the vessels containing or intended to contain, or having actually contained, the same; and (b) every person managing, or employed on, or in connection with, any light locomotive shall abstain from every act whatever which tends to cause fire or explosion, and which is not reasonably necessary, and shall prevent any other person from committing such act.

14. These Regulations shall come into operation on the 18th day of March, 1903, from which date the Regulations dated 3rd November, 1896, and the 26th day of April, 1900, are hereby repealed.

EXECUTION OF ORDERS IN REASONABLE TIME.

AT the Marylebone County Court (London), last Friday, before Judge Stonor, Messrs. Burden Bros., motor-car agents, etc., Friary Lane, Salisbury, sought to recover £13 18s. from the Carlton Motor Company, 19, Elm Grove, Cricklewood, N.W., the claim being in respect of money paid for goods which, it was said, had not been delivered within a reasonable time.

Mr. Burden, of the plaintiff firm, said that in January last his people ordered a quantity of motor fittings from the defendant, paying for the goods in advance. Witness produced a receipt for the money, adding that the defendant wrote putting them off for a time, but afterwards took no notice of their applications for the goods. Mr. Burden went on to say he understood that the defendant had delivered a portion of the goods on the previous evening.

Mr. Arthur Gower, manager to the defendant company, said that it was impossible for him to get the goods out earlier. The Judge: Then you ought to have told him so. A letter was produced in which Mr. Gower, in reply to a communication from the plaintiffs, said, "We can supply dozens, and supply them promptly."

The Judge: I find for the plaintiffs; they had a perfect right to cancel the order; and the portion of the goods which have been delivered must be returned to the defendants.

CLAIM FOR DAMAGES.

MR. LOUIS SINCLAIR, M.P. for the Romford Division of Essex, brought an action, before Mr. Justice Wright, against the London Road Car Company, to recover damages for injuries to his motor-car, sustained through the alleged negligence of the defendants' driver. It appeared that on the afternoon of May 27th, last year, plaintiff was driving his Darracq motor-car along Piccadilly. Owing to the congested state of the traffic he had to stop. While the car was at a standstill plaintiff said one of the defendants' omnibuses struck it, and caused damage to the extent of £150. After hearing the witnesses, the learned judge came to the conclusion that the evidence was not strong enough to establish negligence, and entered judgment for the defendants, with costs.

A TRAILER CASE.

AT Kingston, A. C. Osman, of Richmond, was summoned for exceeding the legal limit of six miles an hour on a motor-bicycle, having a trailer attached. P.S. Lucas spoke to seeing defendant going down Pain's Hill, Cobham, on Good Friday afternoon, with a trailer, at the rate of fourteen miles an hour. Defendant, when stopped, said he "thought that his speed was about seven or eight miles an hour. Defendant now admitted exceeding the legal limit, saying he was unaware of his pace. He had to pay a penalty of £1.

POLICE TRAPS.

SEVERAL motorists have been summoned as the result of a special effort on the part of the police on the first Saturday in May, in the hollow leading from Mill Pool Hill, King's Heath, Birmingham. Inspector Davis, armed with a fly-back centre-second stop watch, specially tested for the purpose, posted two officers in the hollow by the brook near Broad Lane, and waited events 220 yards up the slope of the next hill. The results are set forth in our list of furious driving cases.

MOTORISTS must be careful passing northward from London. The police have instituted a measured distance from the White Hotel to the Load of Hay, Edgware.

THERE is a trap at the foot of Otterburn Hill, on the road from Southampton to Winchester.

The police have a carefully prepared trap in Alton, where they have measured off 120 yards in the main street of the town.

FURIOUS DRIVING CASES.

COUNT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Worthing ...	P. Brennan, Arundel	20 m. p. h.	40s., etc.
Gravesend ...	*R. Pigot, Gravesend	14 m. p. h.	£1, etc.
St. Neots, Hunts ...	J. S. Sanders, Gainsborough	26 m. p. h.	£5.
"	A. Ellis, Humshaugh, North-umberland	28 m. p. h.	£5.
"	H. Thackwaite, London, W.	32 m. p. h.	£7.
"	H. W. Bamber, Lambeth	28 m. p. h.	£8.
"	W. Watson, Midlothian	23 m. p. h.	£5.
Shoreham ...	H. Favett, Folkstone	21 m. p. h.	£4.
"	G. S. Payne (driver to Mr. C. A. Pearson)	28 m. p. h.	£7.
Cambridge ...	E. H. Hargreaves, Trinity College	15 m. p. h.	£5.
Reading	C. R. Mayo, London, W.	20 m. p. h.	40s., etc.
Dorking	*A. Candler, London, W.	—	£2, etc.
"	*T. Holford, Stratford, E.	—	£2, etc.
Croydon	J. Moan, Croydon	—	20s., etc.
Birmingham ...	*G. Osmond, Birmingham	27 m. p. h.	10s., etc.
"	*E. A. Robinson, Birmingham	27 m. p. h.	10s., etc.
"	*W. E. Bladon, Birmingham	25 m. p. h.	7s. 6d., etc.
"	*A. E. Matthew, Birmingham	25 m. p. h.	7s. 6d., etc.
"	B. R. Walker, Birmingham	25 m. p. h.	10s.
Leicester	W. W. Bradbury, Croydon	30 m. p. h.	£5, etc.
Basingstoke ...	L. J. Joseph, Holborn Viaduct, E.C.	—	£2, etc.
Swainsthorpe (Norfolk) ..	J. W. Stocks, Gt. Marlborough St., S.W.	—	30s., etc.
Stockport ...	Dr. Miller, Didsbury	—	10s., etc.
Greenock	B. Humphrey (driver to Sir T. Lipton)	30 m. p. h.	£1, etc.
Bangor (Ireland)	R. Wilkinson, Belfast	—	10s., etc.
Colchester ...	Lieut. H. Day, Royal Engineers	—	£1, etc.
Richmond ...	H. Groom (driver to Mr. W. Younger, M.P.)	20 m. p. h.	40s., etc.
"	H. N. Bushell, Chiswick	—	40s., etc.
Bridgnorth ...	J. Lisle, Wolverhampton	—	£5.
Southampton ...	O. Payne, London, W.	20 m. p. h.	£3, etc.
Steyning	J. D. Hill, London, W.	28 m. p. h.	£5 8s.
Marylebone	E. J. Young, Bournemouth	—	£5, etc.
"	T. Grant, Kensington	—	£5, etc.

Where no alleged speed is given it is understood to be above the legal limit.
* Motor-Cycle Cases.

THE fines in the Birmingham district seem to have been considerably reduced, judging by the amounts recorded in the motor-bicycle cases just heard.

LAST week we reported a batch of cases at the Petty Sessional Court at Garretang, in Lancashire. In one, Mr. Tilly, solicitor, of Lancaster, appeared for the defendant and produced a plan showing that on the road where his client was trapped there was a straight course for upwards of a mile and a quarter in length, and the police admitted that at the time the road was absolutely clear, and that the defendant disputed the accuracy of the constable when informed that he had travelled at the rate of a little over sixteen miles an hour. In another case Mr. G. D. Walmsley, solicitor, of Blackburn, appeared for the defendant and closely cross-examined the police witnesses, ascertaining that the policeman was hiding behind a wall without any opening, and that the occupants of the car could not see him, and that he started his watch as soon as the car had passed. Although pressed to state how he knew that the car had passed he could not for some time give a reasonable explanation, but eventually stated he looked over the end of the wall. He admitted that the length chosen was the lower half of a hill including a short portion of the ascent beyond the bottom,

that the road was dusty, and that he himself had checked the time it took the car to travel from the point where he was to another point 400 yards away. Another witness admitted that there was no person or vehicle on the road or the footpath. It was also stated in cross-examination the road was a V-shaped one, and he held up his arm, stating that it was like the joint made by his elbow. The outside edge of the curve was the distance measured, and if the defendant had kept on his own side of the road he had not travelled the full distance. This evidence was contradicted by that of another witness, who stated that he had examined the road and that he had measured it in the middle, and that the road was a serpentine one. In spite of these admissions, and the unsatisfactory nature of the evidence, both as to the timing and as to the measurement, the magistrates held that the cases were proved, and inflicted fines ranging from that of 20s., in the case of a motor-cyclist, up to £5 and costs.

MR. H. E. BARKER has opened a motor-car garage, with inspection pit, at 303, Halifax Road, Todmorden.

SIR J. DIXON POYNTER and the Hon. Matthew White Ridley M.P., are among the latest clients of the Motor Mart, Ltd.

THE Northern Motor Co., of Montgomery Street, Belfast, will have supplies and offer assistance to motorists visiting the city during the Irish fortnight.

AT the annual meeting of the Wimbledon Common Conservators complaint has been made of the excessive speed at which motorists cross the common.

HERR VOLLMER recently delivered an interesting lecture before the Berlin Automobile Society on motor-cars for fire brigade purposes. The meeting was held at the headquarters of the Berlin Fire Brigade, and attended by the Chief Commissioner of Police and the Chief of the Berlin Fire Brigade.

THE Dermatine Company, Limited, forward a copy of their new catalogue, including a short illustrated article on the discovery of manufacture of india rubber, gutta-percha, and Dermatine. This latter product is now being used in the manufacture of belting, mats, and other goods in connection with automobiles.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shos Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, MAY 30, 1903.

[No. 221.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

THE avalanche of fatality which rushed down the route of the Paris-Madrid race has struck a note of horror throughout the world, and will do much to stem the tide of the reckless daring that threatened to overwhelm the motoring community. Sometimes great disasters are needed to bring men to their senses, and the way in which Continental automobile races were being run was becoming so venture-some, foolhardy, and dangerous, that the catastrophes of Sunday last may have the effect of preventing greater horrors. From simple runs through rural scenery these events have

developed into international orgies. Speed on speed has been the motto of the car builders; motorists have become heroes of the arena with their admirers, whose enthusiasm has assumed something of the gladiatorial tinge; the populace has developed the excitement with which the Spanish people regard their favoured matadors, and the frenzy with which the riders have often entered upon their races has been mistaken for ordinary pluck.

A Comparison.

THE truth is that the day of the mad rush of hundreds of engines over hundreds of miles, with thousands of spectators risking their limbs along the course, was of but short duration.

Less than a decade ago motor-cars were clumsy monsters, ungainly and unwieldy; now they are perfect mechanisms, and hence the danger of placing a couple of hundred of such machines upon the road at only one minute's interval after each other. Paris-Madrid has brought everyone to his and her—for women had become competitors—senses. Such a holocaust has a terrible lesson.

Impossible in England.

At the same time the British people need have no occasion for the agonised legislation which some have proposed. Already it is suggested that automobiles should be treated as trams and run upon rails; that the speed should be restricted; that everything be done, that is possible to drive the car off the road and restore the horse as the monarch of the highway. Such is the fear of panic, and not the voice of reason. England never has had, nor ever will have, road races such as have startled and terrified more than one continent. Local authorities would not consent to giving over their roads merely to make a motorists' carnival—if such a ride into the valley of death can be so lightly described. Motorists, too, regard the roads as for utility; not the maddened rush for speed—more and more speed. Hence the purchase of the track at Purley, the trials on the private estate at Welbeck, and the preparations now being carried out in connection with the forthcoming race in Ireland.

The Gordon Bennett Race.

At the moment the jeopardy in which it was thought the Paris-Madrid horrors would place this event is the practical question, and we would join with the Automobile Club in its public re-assurance as to the improbability of even a mild repetition of such events as have marred the past week. The circumstances are essentially different. The course for the Gordon Bennett race is within an area that can be adequately guarded and watched by the 7,000 police, soldiers, and voluntary helpers who will be distributed along its length on the great day. Spectators will be kept on the other side of walls, ditches, and hedges, cross roads will be strongly barricaded, and the fact that there are no level crossings removes a cause of danger that proved fatal in the recent race.

A Word of Warning.

At the same time we would not minimise the necessity that exists for the Automobile Club taking every precaution. There must be no negligent observers, no idling stewards. Everyone who is about the course on July 2nd must recognise the importance of the occasion and maintain a watchful attitude from the start to the finish. And even after the race is over care will be necessary—in fact, it will be on the roads leading to and from the course that the greatest care will have to be taken. Drivers will have to be impressed with the need for careful and steady driving, or a panic will quickly be created in the crowds. For it must be remembered that the Irish people are less familiar than are those of the Continent with automobile contests, and their curiosity to see the racers may lead to dreadful crushes if motorists do not exercise extreme caution throughout the Fort-night.

The Preparation of the Roads.

Of course, the character of the road surface must always be considered in connection with events of this character, and there is no doubt that the route for the Paris-Madrid contest was in a dusty condition. In Ireland, however, great preparations are already in progress to minimise the dust danger, and to lessen the risks in rushing round corners. More must still be done in this direction, and hedges must be carefully attended to so that the racers may have a clear view of the sinuous course. For while there are good straight stretches, it must not be forgotten that there are many sharp turns, while the difficulty of cars attempting to pass each other on nearing the narrowing highway is a very real one. The organisers of the event must look to this matter.

Local Regulations.

TUESDAY night's "Dublin Gazette" contained an order by the Local Government for Ireland, empowering the County Councils of Carlow, Kildare, and Queen's County to make regulations for the holding of the Gordon Bennett race on July 2nd by the Automobile Club of Great Britain and Ireland. The roads specified are to be closed from six a.m. till

the end of the race, and all roads leading to the course are to be barred. No automobile will be allowed to travel on these side roads at more than ten miles an hour. An officer is to be stationed at ten points of the course to give notice by sounding a bugle of the approach of a racing car. The County Councils are to send notices to all householders and land occupiers on the course that all live stock should be kept under control on the day of the race. There are other minor regulations laid down by the Local Government Board which the County Councils must enforce. The road is to be kept by official stewards, Royal Irish Constabulary, and military.

Motor-Bus Service at Torquay.

HASTINGS, St. Leonards, and Eastbourne have their motor 'bus services, and now a similar venture is about to be inaugurated at Torquay. We understand that already arrangements are well advanced, it being the intention of the promoters to give a trial to the Chelmsford 'bus, and the service will probably consist of five or six vehicles—two to ply between the Torquay Railway Station and the Strand or the foot of Beacon Hill, two to serve St. Marychurch and Babbicombe, and one or two to run between Torquay Railway Station—along Union Street and Fleet Street—and the Strand. In this way the whole of the town will be served. The fare for the journey from the Strand to Torquay Railway Station will probably be 2d.



Weighing in for Paris-Madrid.—A snapshot in the Place de la Concorde, Paris.

The Motor Volunteers.

THE first enrolment of London members of the Motor Volunteer Corps took place at headquarters on the 15th inst. Dr. A. C. Shaw was most indefatigable in helping the enrolment. General Oliphant has been using members' services during the past week in connection with his military duty, and has enlisted such services until the 30th inst. Mr. J. Bennett-Stanford will be now engaged at Ringwood camp, in connection with manœuvres under Colonel Le Roy Lewis, until the 6th prox. Colonel Dawson, commanding the Irish Guards and Second London Volunteer Infantry Brigade, requisitioned for the services of a member of the corps on Saturday last, in connection with the cycling manœuvres under his command. Messrs. J. Bennett-Stanford, Ker-Seymer, and G. D. Chapman have been recommended for commissions by the officer commanding.

Dock Rules for Motor Traffic.

SOME discussion having arisen with regard to the facilities allowed motor vehicles at leading docks, we publish the following regulations enforced at the Surrey Commercial Docks, Rotherhithe, S.E.:—(a) That all vehicles in which liquid fuel is used for internal combustion (*i.e.*, as an explosive

force) be prohibited from entering the premises. (b.) That all vehicles in which coal is used, and all vehicles which have "underfed" boilers be excluded from all buildings in which goods are placed. Such vehicles are not allowed to pass along the roads which run through the sheds used for the storage of wood goods, but they may be permitted to use the roads adjacent to the sheds. (c.) That all vehicles in which coal or coke is used be required to have baffle plates at the base of the funnel, and approved spark arresters, as well as approved boxes or other receptacles for cinders. (d.) That no vehicles except electric or air driven shall be left unattended at any time while in any building in which goods are placed, and that no clearing of the cinder receptacles nor "clinking" shall be allowed, nor shall the steam blast be used therein. (e.) That no vehicles except electric or air driven shall be housed for the night in any building in which goods are placed, nor in any building communicating therewith.

In the Lords.

AFTER the discussion in the House of Lords, to which we referred last week, it did not surprise anyone to learn on Saturday last that Mr. Long's proposed motor-car bill would be introduced into the House of Lords instead of the initial stages being conducted in the Commons. After all, this is perhaps the wiser course, and motorists will be able to amuse themselves during the Whitsun holidays by guessing competitions of an informal character as to the likely provisions of the measure. We hope the clauses will be drawn up in a liberal fashion. The suggestions of some of the minor councils may well be ignored, and the general welfare of the country considered in preference.

Yeovil Again.

For instance, the Yeovil Council, which was prominently identified with the earlier agitation for numbering, has just adopted a resolution in favour of the retention of the present unsatisfactory and absurd speed limit. This is a position which we had thought had become untenable after the declaration of its author, Mr. Chaplin, to the effect that the regulation was framed to deal with the circumstances of the time, and that it has become antiquated and indefensible. Certainly the present is a trying one for motorists, and the postal vote of the A.C.G.B.I. has by no means straightened the chaos into order.

Motor-Car Legislation.

THE Automobile Club of Great Britain and Ireland have ascertained, by means of a postal vote, the views of automobilists generally upon the various proposals respecting motor-car legislation. Members of the Club, the Affiliated Provincial Clubs, and the Motor Union, were asked to reply to the three questions set forth in our issue of the 16th inst. The answers have been received and tabulated, and the results are shown in the statement on another page. It will be seen that by 1,015 votes to 463 the members voting have approved of legislative proposals, which include the abolition of the specific speed limit, the amendment of the law with regard to furious driving, the raising of the tare limit for commercial vehicles, and the identification of motor-vehicles by means of conspicuous numbers or names. A bill embodying these proposals will be introduced into Parliament on behalf of the Club during the next few days.

South Wales Automobile Club.

ON Saturday the members of the South Wales and Monmouthshire Automobile Club arranged a run to Brecon, in which some twenty cars took part. The weather being summerylike, the event proved both delightful and exhilarating. The route was via Aberdare, Hirwain, and the Story Arms. A procession was formed through Brecon to the Castle Hotel, where the members of the Club were most hospitably entertained to lunch by Captain D. Hughes Morgan, J.P., and at the same time

met the Mayor and other members of the Corporation. Speaking after lunch, the Mayor of Brecon informed the visitors that the local authorities were not getting a source of revenue through fining motorists for fast driving, as some other counties were doing, and stated that as far as he knew they were allowed to go as fast as they liked. The first car to arrive in Brecon was Mr. David Duncan's Daimler. The return journey was made via Abergavenny, Usk, and Newport. On the whole a very pleasant day was spent.

Home Office Laxity.

It may have appeared somewhat strange that the new regulations relating to the storage of petroleum spirit issued by the Secretary of State in March last should only have been dealt with in our last issue. We venture to assure our readers, however, that the laxity was not on our side. Indeed, it was quite by accident that we discovered that any new regulations had been issued. We should not have referred to the matter except for the fact that a North London ironmonger was last week fined for storing a quantity of carbide of calcium on his premises without a licence, as required by Orders in Council

London. They consist of a basement and five large floors, the whole having been specially built for the purpose. The basement has been fitted as a repair shop with work benches and the pit lining one entire side of the building. Facilities for the charging of electric vehicles, etc., are also afforded, while a licence has been obtained for the storage of two hundred gallons of petrol. The other floors are for the purposes of garage and show-rooms, while, as on the ground floor, the roof is also adopted for the washing of cars, a large electric lift running from the basement to the roof. It is stated there is garage accommodation for two hundred cars, the space available being 30,000 square feet. The whole building forms one of the most modern of car houses, and the commendable enterprise exhibited is certain of its own reward.

A Public Protest.

THE first public meeting of protest against the reckless driving of motor-cars has just been held—a fact which ought to be a warning to the inconsiderate drivers whose action has done much to bring discredit upon automobilism. This took place at Shrewsbury on Saturday to protest against the high rate



The Paris-Madrid Race.—The arrival at Bordeaux of Valentin (No. 16) on Ader Car and Bardin (No. 81) on De Dion.

made under the Petroleum Acts, 1871 to 1879. The defendant pleaded ignorance of the law requiring a licence, but the solicitor for the London County Council pointed out that the Order had been published in the *London Gazette*. Now, if publication in the *Gazette* is to be taken as evidence of the issuing of regulations, care must be taken by the authorities that such publication is made. No doubt it is the rule that any new important regulation, such as those relating to the storage of calcium carbide and petroleum spirit shall be dealt with in the official organ, but in the case of the new rules relating to petroleum spirit, reprinted in our last issue, we can find no reference to them in the *Gazette*. Consequently, motorists have been in ignorance of their existence for about two months.

An Up-to-Date Garage.

ON Wednesday week, to celebrate the opening of the London Motor Garage Co.'s new premises in Wardour Street, W., a number of friends and members of the Press were invited to lunch on the premises. Mr. Claude Watney presided and Mr. Atherley gave particulars of the extent of accommodation of the new premises, which are the largest of their kind in

of speed at which motor-cars were now driven, and to form an association to institute legal proceedings against offending motor-car drivers. Mr. R. B. Phillips, chairman of the Roads and Bridges Committee of the Shropshire County Council, presided. Letters approving of the steps proposed to be taken were received from Mr. H. D. Greene, K.C., M.P., Mr. Jasper More, M.P., and others. The chairman explained that the promoters of the meeting did not ask for war to be waged against motor-cars, but that a check should be put upon the recklessness of drivers. With a view to this end being gained he suggested the introduction of a law to compel drivers to hold certificates of qualification, the numbering of cars, and to cast the responsibility for damage caused through the driving of them upon their owners. Mr. John Hill proposed "That this meeting protests against the reckless manner in which motor-cars are being driven, to the great danger of the public, and resolves to form an association to investigate any charge made by members, and, if necessary, to prosecute offenders for damage sustained, the society to be called 'The Shropshire Association for Protection Against Dangerous and Reckless Motor-car Driving.'" The Rev. Watkin Temple seconded. The motion was carried, and a committee was appointed to draw up rules, etc. Mr. T. S. Minton was elected hon. secretary, and Mr. J. Davies treasurer.

The West Surrey Club.

ON Saturday the recently-formed West Surrey Automobile Club held their inaugural run to the Huts Hotel, Hindhead, where members and friends to the number of thirty-five sat down to tea. At its conclusion, the Chairman, the Rev. A. Armitage, made a few remarks on the successful progress made since the inception of the Club some three weeks back, and on its programme, which includes the establishment of a commodious garage for the use of members in Guildford. Those present included Mr. Armitage (12-h.p. Darracq), Colonel Fairtlough and party (12-h.p. Darracq), Mr. Ponsford (8-h.p. Clement), Mr. Leon (ditto), Mr. E. Baring-Gould (10-h.p. Panhard), Mr. Tessier (9-h.p. Argyl), Mr. Crothers (9-h.p. Darracq), Miss Crothers (5-h.p. Peugeot), Mr. Simmonds (10-h.p. Decauville), Mr. R. W. Buttemer (10-h.p. Decauville), Major Matheson (6½-h.p. Benz), Dr. Fennings (5-h.p. Benz), Mr. King (3½-h.p. Benz). After the cars had been marshalled for the benefit of the camera fiends present, a start was made for Frensham and Farnham, most of the members following this route home.

Opinion in Hertfordshire.

HAVING regard to the great North Road, the County Council of Hertfordshire is naturally interested in motoring, and at its last meeting very strong remarks on the dust question were made by some members who happen to live in proximity to the famous highway. The Standing Joint Committee proposed a resolution in favour of registered numbers being placed on cars, and the speed limit being abolished, but this was referred back for consideration. A sound speech was made by the Earl of Verulam, who pointed out that in passing vehicles drawn by animal power the faster the motor went the less likely the animals were to be frightened. At the Quarter Sessions for the county the Chief Constable suggested the licensing of drivers, but the Right Hon. T. F. Halsey, M.P., doubted the practicability of the proposal. They might have their servants licensed, but many people would like to drive their own cars, and they could hardly expect everybody to pass an examination in order to be able to drive their own cars. In fact, he did not think it was necessary that they should do so.

Alleged Police Complaints.

IN our correspondence columns Colonel Stratton Bates, who is a J.P. for Hampshire, writes calling attention to the statement made by the Marquis of Granby in the House of Lords the other evening, when he said that the Chief Constable of Hampshire had reported the receipt of thirty or forty complaints as to the serious damage done by motor-cars. This statement was too important to allow to go uncontradicted, and in publishing the reply of the Chief Constable of Hampshire Colonel Bates has rendered a service to motorists at the present juncture, when prejudice seems to be rampant again.

Numbering Electrical Vehicles.

A PETITION against the proposal that motor-cars should be compelled to carry numbers for purposes of identification has been presented to the House of Commons by a number of owners of electrical vehicles for town use, including the Duke of Sutherland, Lord de Grey, Lord Hood, Lord Esher, Lord Duncannon, the Duchess of Roxburghe, the Countess of Essex, Georgina, Countess of Dudley, the Hon. Mrs. George Keppel, Sir Edward Lawson, Mr. Samuel Montagu, and Mr. Stuart Samuel, M.P. They contend that it is unnecessary and would be vexatious to provide that ladies and gentlemen who elect to be driven in electric broughams and landaulets in preference to horse-drawn vehicles when making calls in London, driving in the park, or attending the opera or theatre, should be required to have attached to the back of their carriage a large disfiguring number or name. Such a provision, they say, would practically put an end to the use of such vehicles in London. The petitioners pro-

test against the proposal that the conspicuous marks of identification which it is proposed to attach to motor vehicles in general should be attached to electric vehicles for town work.

The Club Bill.

THE measure the Committee of the Automobile Club has prepared, and which will be introduced in the House of Commons very shortly, includes proposals for doing just what the above petition protests against. The object of the Bill is to provide for the numbering and registration of motor-cars, light locomotives, and such-like vehicles, and to enable proper means to be taken under regulations of the Local Government Board for the identification and punishment of the persons unlawfully using them. The Bill also provides for the abolition of the specific speed limit and for the licensing of paid drivers of light locomotives.

A Norfolk View.

FOLLOWING the conviction of motorists in connection with the inaugural meet of the Norfolk Automobile Club has been a long correspondence in the county papers, in the course of which Mr. E. Estcourt has pointed out that "the motor-car is quite as much a private carriage as the horse-drawn vehicle, and that it is an open question which is the best looking." In his opinion the motor-car is by far the best. Certainly the body part of a good car costs more, and is quite as carefully built as the best carriage, and would undoubtedly be just as much spoilt by a number plate. What we contend is that no one has any right to take either a horse, motor-car, or anything else on the highway unless he has perfect control over it, and the sooner this is realised by the drivers of untrained horses the better.

THE Anglo-American Oil Company will supply petrol to retail in Ireland at 1s. 8d. per gallon during the Automobile Fortnight.

THE Wolverhampton Automobile Club had a run to Ludlow on Saturday, the captain for the day being Mr. T. Cureton.

A SUGGESTION for the starting of cars in the Gordon Bennett race at intervals of three minutes has been referred to the French Automobile Club.

MR. WM. CARRITTE, of Messrs. Bradbury and Company, of Oldham, has been elected for the third successive year chairman of the Manchester and District Cycle Trades Association.

SEVERAL questions relative to automobilism were asked by M.P.'s in the House of Commons on Wednesday. No information was elicited other than that already published, or which appears in the present issue of the *Journal*.

AN informal tour of the Liverpool Self-Propelled Traffic Association will be held to-day (Saturday). The members will leave the Liverpool landing-stage by the 1.50 p.m. boat for Birkenhead, proceeding via Queensferry, Flint, and Abergele, to the Grand Hotel, Llandudno.

THE Committee of the Scottish Automobile Club have considered the report on the non-stop run, and have decided that one mark shall be deducted from the Rochet-Schneider and Chenard-Walcker cars for driving stops, and they have also disqualified No. 25, the F.A.C. car.

THE works of the Motor Manufacturing Company, Limited, at Coventry, will be closed from Saturday, 30th inst., to Wednesday, 10th June, for the annual stock-taking. The permanent staff will be in attendance, as usual, and every endeavour will be made to promptly dispatch all goods ordered during that time.

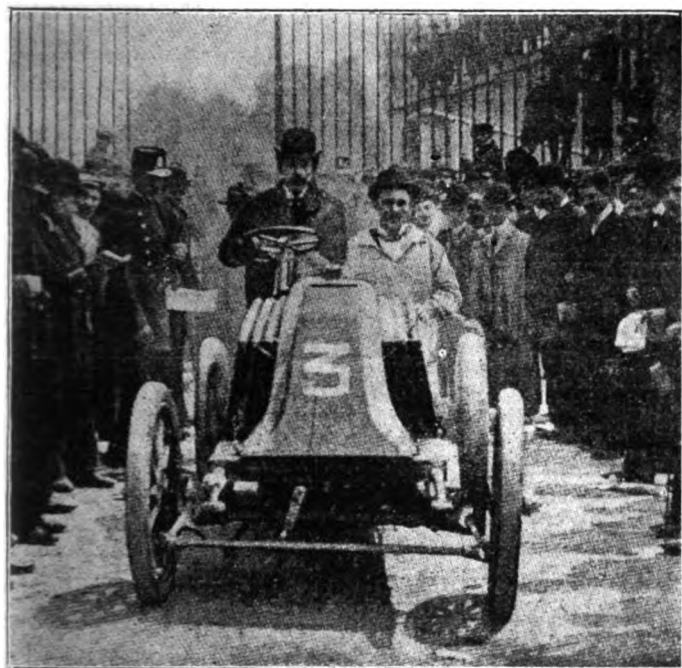
MINERVA MOTORS, LIMITED, has been registered with a capital of £130,000, in £1 shares, to acquire the businesses carried on by Messrs. S. de Jong and Co., at Antwerp, and dealers in motors, motor-cars, and accessories carried on by Mr. D. Citroen, at 45, Holborn Viaduct, London. The first directors are Messrs. S. de Jong and D. Citroen (managing directors), and others to be appointed by the signatories.

The Paris-Madrid Race.

[FROM OUR OWN CORRESPONDENTS.]

PARIS, Sunday.

FINE weather set in definitely for the weighing in of the cars for the Paris-Madrid race, which has now become a thing of history, and the sight at the Tuileries Gardens, in the Place de la Concorde, and, indeed, almost all about Paris, was remarkable. Crowds surrounded the gates of the Tuileries Gardens, and each racing car was examined with close attention. So great was the number of cars to be weighed in that two weighing machines were needed. Many were the tribulations of those who had to present their cars to the Inspector of Mines, in order to have the new types passed, for the law in France exacts that every manufacturer of cars, before he is allowed to let them circulate, must present them to the "Service des Mines," to have them examined and pronounced safe. The great object of the inspectors of this rather perfunctory operation seems to be to make known to the world in general, and automobile manu-



M. Louis Renault (No. 3 at the Weighing In.

facturers in particular, the extreme importance of their position. A long harangue first takes place until the unfortunate postulant makes up his mind that his car is going to be refused, and then, after waiting for an hour or more, and giving the inspector and his assistants certain runs on the car, all the difficulties seem to vanish as if by enchantment, and the coveted certificate is obtained.

On Saturday, about noon, the sky began to cloud over, and threatened a storm; but, fortunately, towards evening the clouds rolled away and left behind them a beautiful starlit night, with summer temperature. The sight on the Place de la Concorde, in the Champs Elysées, along the Bois de Boulogne, over the Bridge of Suresnes, and on to Versailles, was one never to be forgotten. Constant streams of enthusiasts on foot, bicycles, motor cars, and on every kind of animal-drawn vehicle, crowded the roads in every direction, all with one purpose, streaming out to Versailles, ready to spend the whole night without thinking of bed, all to see the competitors start on the great International

Automobile Road Race. Versailles has not known such a night since the King of France lived there. In all directions there were illuminations, as if the Great King had been coming back to take possession of his palace. All the shops were open, and the footpaths were impassable on account of the supper tables which had been installed everywhere. It is estimated that fully one hundred thousand visitors crowded around the starting place. The cars were lined up at the side of the road, numbers being hung on the trees to indicate to each competitor where he should take his place. It is said that 25,000 litres of petrol—equal to nearly 6,000 gallons—was supplied by one firm alone. The 5th regiment of the Engineers lined up the road and kept order, and, soon after daybreak began to colour the sky, two rockets announced that the competition had begun, and Jarrott, on his De Dietrich, at 3.45 opened the ball. After him, at a minute's interval, followed De Knyff, Louis Renault, Thery, and so on. Sydney Girling, on the first English car, a Wolseley, started



M. Lorraine-Barrow (No. 5) on his 45-h.p. De Dietrich.

12th, and the 16th starter was Madame Du Gast. Rolls started 35th, on a Panhard; Mark Mayhew, on his Napier, got away 63th at 4.51; Hubert Olliver, on a Serpollet, started 90th, at 5.13; and Austin followed 97th, on the second Wolseley, at 5.20. Holder, on a Panhard, started 102nd, at 5.24, and so on, until at 6.45 the last motor-bicycle had got away. It will thus be seen that, curiously enough, exactly three hours were taken in starting the competitors.

So much for the start of this race, which has gone ahead over and above last year's international event, namely, Paris-Vienna, by leaps and bounds, both in the number of cars which started, in the speed and in the horse-power of the vehicles, and in the interest it has attracted all over Europe. The total number of starters was as follows:—

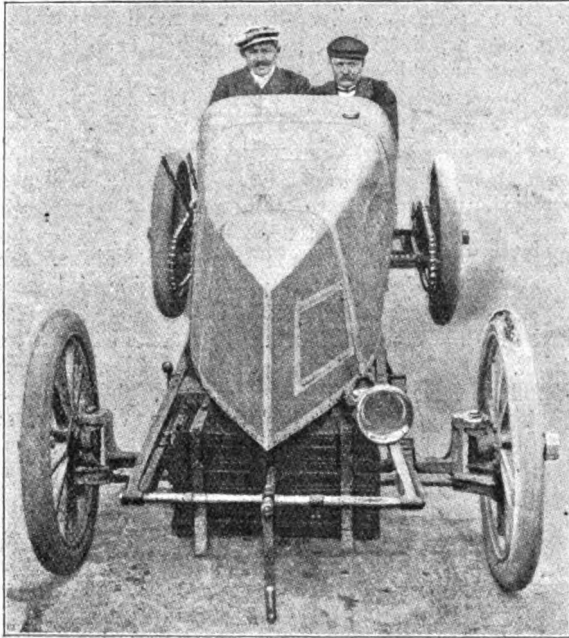
Large and light cars	138
Voiturettes	32
Motor-bicycles	53

Grand total 223

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CHARTRES, Sunday.

Great preparations had been made here for the safe passage of the competitors through the town, which was, of course, "neutralised." L. Renault, No. 3, was the first competitor to pass through the place, which is 74 kilometres from the starting point, at 4 h. 41 min. 40 sec., followed by C. Jarrott, No. 1 (De Dietrich), at 4 h. 42 min. 31 sec.; R. de Knyff (Panhard), No. 2,



H. Fournier (No. 5) on his 70-h.p. Mors.
(Allgemeine Automobil Zeitung.)

at 4 h. 43 min. 45 sec.; Thery, No. 4 (Decauville), at 4 h. 51 min. 20 sec.; Stead, No. 18 (De Dietrich), at 4 h. 55 min. 30 sec.; S. Girling, No. 22 (Wolseley), at 4 h. 57 min. 10 sec.; and Werner, No. 14 (Mercedes), at 4 h. 58 min.

Just before six o'clock fifty-five competitors had passed, sometimes at intervals of several minutes, and sometimes close together. Rolls, No. 59 (Panhard), passed 28th, at 5 h. 24 min. 25 sec.; Guders, No. 94 (Pipe), passed 41st, at 5 h. 39 min.; and Mark Mayhew (Napier), 55th, at 5 h. 55 min. 20 sec.

It is reported from Ablis that a car ran into and killed a woman who was crossing the road.

W. K. Vanderbilt, Baron de Forest, and Fournier, all on Mors cars, and De Knyff (Panhard) abandoned the race at this point owing to accidents to their vehicles.

At a point between Ablis and here Baron de Caters drove his Mercedes into some ploughed land at a turning, and his mechanic was thrown out. After twenty minutes' delay, they were able to proceed.

TOURS, Sunday.

Arriving at Tours on Saturday night we found the town in a tumult, and every hotel filled to overflowing. At six o'clock this morning we drove out to the Control on the far side of the town, that is to say, nearer to Bordeaux, where the roads were thickly lined as far as one could see with crowds of people, waiting to see the cars pass by. At five minutes past seven Louis Renault came flying along. There was a remarkable difference between his car and most of the others, easily distinguishable by the noise of the exhaust, which did not give one the idea of great power, but more of complete regularity and lightness. After seeing Louis Renault pass, we turned slightly towards Tours, and about a quarter of an hour afterwards saw Werner at the top of the hill, in a cloud of dust, and a deep roar told us at once that it was a 90-h.p. Mercedes. Just before we reached the brow of the hill, Jarrott turned the corner on his De Dietrich, and waved his hand in recognition as he passed. He was followed by Stead and then Baras. Madame Du Gast, on another De

Dietrich, came 8th, and then Maurice Farman on the first Panhard, followed by Marcel Renault. As we were descending the hill, we saw Rolls, with Crompton as mechanic, going round the bend, and Chanliaud on a Serpollet, going very strong. The first Mors came 16th, driven by Salleron, and a little later Gabriel, on the second Mors, came fast and furious up the hill, fully twenty-five minutes in time ahead of any of the others. Towards eight o'clock we got down to the Control, seeing Mark Mayhew, on his Napier, come by.

In the Control, the first man we met was Lieutenant Cumming, who was acting as mechanic on his Wolseley car, which was being driven by Sydney Girling. He started 12th at 3.56, and had fallen back to 55th, on account of hot bearings. Soon the voiturettes began to arrive, and three little Georges Richards, with four-cylinder engines, were well up to the front, closely followed by two Renaults. We noticed several Passy-Telliers, with curious blue-painted bodies in the shape of inverted boats, several smart-looking Clements, and also two or three Darracqs, with stamped steel frames, perforated to reduce weight, from one end to the other. Just as we were leaving to catch the train we met Mr. H. Austin on the second Wolseley, suffering from hot bearings. Austin told us that he had had a nasty experience with a Mercedes. It seems that the car was passing and swerved right in front of him, and then began to swerve from side to side, until one of the hind wheels smashed and let the petrol tank down on the road. The car was in a blaze in a moment, but, fortunately, no one was hurt, and Austin went on, after stopping to ask if he could be of any assistance. Henry Farman (Panhard) gave up at Vendome, *en panne*, as a result of trying to avoid a pedestrian.

POITIERS, Sunday.

Poitiers, 316 kilometres from Versailles, was *en fete* to receive the daring riders. L. Renault was the first to reach the town at 8 h. 23 min. 5 sec.; Jarrott was second, passing at 8 h. 43 min. 42 sec., followed by Baras, No. 47 (Darracq), at 8 h. 52 min. 30 sec.; Thery, No. 4, at 9 h. 2 min. 20 sec.; M. Farman, No. 38 (Panhard), at 9 h. 2 min. 45 sec.; Marcel Renault, No. 63, at 9 h. 5 min. 30 sec.; Jenatzy (Mercedes), at 9 h. 9 min. 50 sec.; Madame du Gast (De Dietrich), at 9 h. 15 min. 3 sec.; and Rolls, No. 59, at 9 h. 19 min. 32 sec.



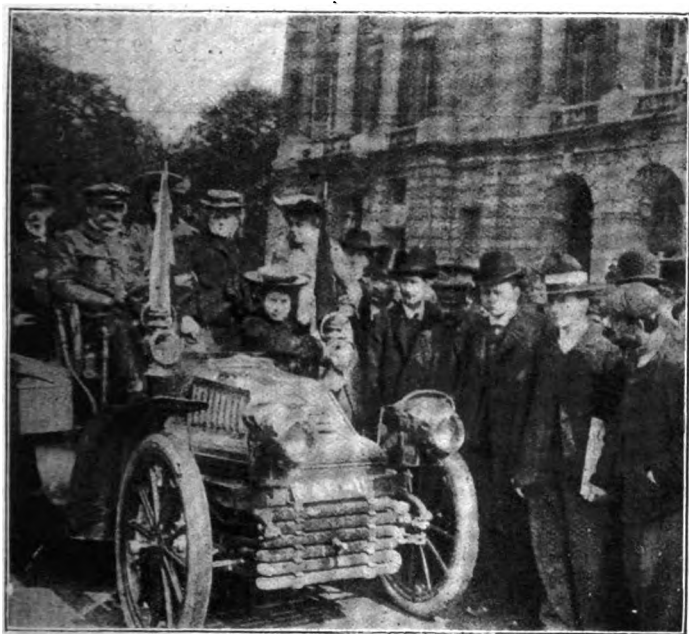
G. Olliven (No. 201) on his 20-h.p. Serpollet.

The sad news was brought in that a fatal accident had happened at the level-crossing over the Paris-Tours railway line, about a mile from Bonneval, the Wolseley car, No. 243, driven by L. Porter, being overturned and catching fire. The person whose duty it was to mark the level crossing with a yellow flag had received instructions authorising him to leave his post. Shortly afterwards Porter's car approached at full speed. In-

stead of going round to the left, the car made straight for a hut occupied by a gate-keeper. Mr. Porter was thrown forward several yards. Nixon, the mechanic, was found burned to death under the car. Porter was taken to the hospital, where he recovered consciousness three hours later.

M. Béconnais, who was driving a Darracq, took a turn too quickly just outside Chatellerault, and smashed a wheel. Another car dashed up and smashed the vehicle to pieces. The driver of the second car was thrown out, but was not badly hurt.

M. Rivierre (Pipe) in trying to avoid running over a woman collided with the side of a bridge near this town and broke a wheel. Marcel Renault, last year's Paris-Vienna winner, fouled a tree, and was thrown from his car a few miles from here, both his legs being broken and his skull fractured. His mechanic was also so seriously injured that his life is despaired of. Later reports of M. Renault are but little more favourable. It is worthy of note that Maurice Farman, on seeing Renault lying bleeding by the roadside, threw away his chance in the race and went to his unhappy comrade's assistance.



The Start of the Tourists. Madame Lockert on a 12-h.p. Ader.

BORDEAUX, Monday.

Great excitement prevailed here in expectation of the arrival of the racers. A company of the 144th line regiment had been called out to keep order at the Control a few miles away. The special train arrived in plenty of time to witness the first arrival, who proved to be Louis Renault, coming to a stop at 12 h. 14 min. 45 sec., after having safely made the journey of 345 miles. Jarrott turned up a few minutes later, and met with a hearty reception. Appended is the list of cars which reached Bordeaux up to last night, in order of arrival:—

Order of Arrival.	Order of Starting.	Driver.	Car.	Net time for Journey.	
				H.	M.
1	3	L. Renault	Renault	5	32
2	1	Jarrott	De Dietrich	5	51
3	168	Gabriel	Mors	5	13
4	96	Salleron	Mors	5	46
5	47	Baras	Darracq	5	46
6	78	P. de Crawhez ..	Panhard	6	1
7	99	Warden	Mercedes	6	6
8	69	Rougier	Turcat-Mery	6	16
9	86	Janatzy	Mercedes	6	24
10	153	Voigt	C.G.V.	6	1
11	112	Moutier	De Dietrich	6	17
12	10	Teste	Panhard	6	34

Order of Arrival.	Order of Starting.	Driver.	Car.	Net Time for Journey.	
				H.	M.
13	4	Thery	Decauville	7	14
14	119	Le Blon	Serpollet	6	43
15	205	A. Fournier	Mors	6	11
16	116	Berteaux	Panhard	6	46
17	27	De Caters	Mercedes	7	48



The Hon. C. S. Rolls (No. 59) on his 80-h.p. Panhard Racer.

18	155	Max	Mercedes	6	39
19	209	Page	Decauville	6	19
20	90	Chanliaud	Serpollet	7	7
21	293	Gastaux	Mercedes	6	8
22	128	Hemery	Darracq	6	52
23	185	Augieres	Mors	6	52
24	111	Pellisson	De Dion	7	12
25	39	Kohler	Mercedes	7	53
26	103	Edmond	Darracq	8	0
27	85	De Brou	De Dietrich	8	2
28	195	Lavergne	Mors	7	21
29	94	Guders	Pipe	8	2
30	292	Braun	Mercedes	7	4
31	106	Langlois	Panhard	7	37
32	19	Simon	Ader	8	16
33	16	Valentin	Ader	8	20
34	150	Lamberjack	Panhard	7	59
35	81	Bardin	De Dion	7	51



Mr. Sidney Bowkett and his Ormonde Motor Bicycle. (No. 287.)

36	—	Civilli	Clement	—	5
37	219	Rigolly	Gobron Brillie ..	9	26
38	173	Sinoholle	Darracq	6	42
39	37	Masson	Pipe	8	24
40	126	Van de Poel	Darracq	8	29
41	151	Osmont	C.G.V.	8	37
42	53	Charron	Mercedes	8	52
43	36	Hieronymus			

Order of Arrival.	Order of Starting.	Driver.	Car.	Net time for Journey.	
				H.	M.
44	143	Barillier	Georges Richard ..	7	1
45	65	Wagner	Darracq	7	9
46	218	Giraud	C.G.V.	8	37
47	34	Degrais	Mercedes	9	24
48	148	Combier	Georges Richard ..	7	29
49	52	Turr	Panhard	9	19
50	233	Rasson	Clement	8	8
51	32	Legras	Passy-Thellier	7	48
52	57	Holley	De Dion	7	45
53	33	Barbaroux	Benz	7	57
54	182	E. Loste	C.G.V.	9	13
55	88	M. Fournier	Clement	7	47
56	130	Birnbaum	Ader	7	47
57	248	Gavaris	Panhard	8	27
58	253	Chenu	Chenu	8	13
59	204	D'Acoz	Serpollet	8	42
60	77	Villemain	Darracq	8	5
61	158	Van der Heyden ..	Panhard	9	50
62	271	Vilain	Vilain	8	40
63	29	Mme. Du Gast	De Dietrich	10	52
64	44	Storero	F.G.A.T.	10	45
65	187	Weisser	De Dion	8	46
66	140	Sommier	Ader	8	59
67	82	Koechlin	Gobron Brillie ..	10	35
68	225	Duray	Gobron Brillie	9	40
69	272	Versein	Motobloc	9	38

Order of Arrival.	Order of Starting.	Driver.	Car.	Net time for Journey.	
				H.	M.
100	276	Flouret	Flouret	11	55
101	226	De Boisse	De Boisse	11	59
102	*	Prost	Doué	11	42
103	*	Arnott	Werner	12	5
104	217	Amblard	Mors	13	39
105	73	D'Aubignosc	Ader	13	4
106	299	Pagliano	Lambert	13	26
107	273	Dombret	Motobloc	14	8
108	*	Martel	Griffon	13	11
109	282	Lillie	Serpollet	14	58
110	*	Baret	Bruneau	13	59

* Motor-bicycles.

After adjusting the times of arrival with those of starting, the winners of the various sections are:—

HEAVY CARS.

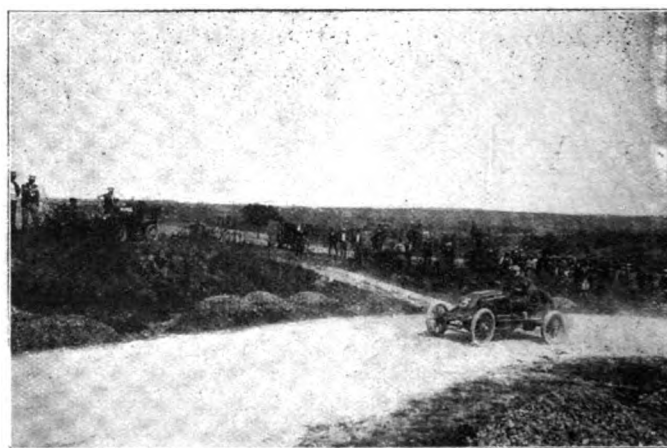
1.	Gabriel (Mors)	..	..	..	5	13	31	1-5	
2.	Salleron (Mors)	..	..	..	5	46	1	4-5	
3.	Jarrott (De Dietrich)	..	..	..	5	51	55		
4.	Warden (Mercedes)	..	..	..	5	56	30	4-5	
5.	P. de Crawhez (Panhard)	..	..	..	6	1	8	2-5	
6.	Voigt (C.G.V.)	6	1	9	1-5	
7.	Gasteaux (Mercedes)	6	8	0		

LIGHT CARS.

1.	Louis Renault	5	39	59
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Jarrott on his De Dietrich.



Louis Renault on the top of the Hill.

SNAPSHOTS AT PETIGNAC, 70 MILES FROM BORDEAUX.

70	31	Corre	Corre	8	57
71	*	Bucquet	Werner	8	57
72	164	Durand	Corre	9	49
73	196	Lafont	De Dietrich	10	11
74	131	Houdeauville	Passy Thellier	9	28
75	201	Ollivier	Serpollet	10	15
76	*	Demester	Griffon	9	3
77	262	D'Hespel	Corre	9	59
78	175	Caillois	Serpollet	10	25
79	50	Comiot	Comiot	11	30
80	*	ime. Jollivet	Griffon	9	25
81	227	Holder	Panhard	10	31
82	*	Cissac	Peugeot	9	39
83	*	Lanfranchi	Peugeot	9	50
84	28	Quinzcaut	Ader	12	34
85	200	Gauthier	Ader	10	24
86	274	E. Dombret	Motobloc	11	5
87	*	Derny	Clement	10	23
88	231	J. Beutler	De Dietrich	11	20
89	232	Dernier	Clement	11	21
90	102	Deniot	Henriod	12	27
91	192	Maillard	Georges Richard ..	10	56
92	55	Stephen Ribes	Panhard	12	52
93	*	Griet	Griffon	6	44
94	*	Momo	Peugeot	11	3
95	46	Gasté	Automotrice	11	49
96	223	Aaron	Corre	11	22
97	15	Le Berthe	De Dion	11	50
98	263	Person	Corre	12	31
99	300	Davand	Lambert	12	24

2.	Baras (Darracq)	..	..	..	6	12	49
3.	Page (Decauville)	..	..	..	6	19	8

VOITURETTES.

1.	Masson (Clement)	..	..	..	7	19	0
2.	Barillier (G. Richard)	..	..	..	7	39	0
3.	Wagner (Darracq)	..	..	..	7	47	0

MOTOR-BICYCLES.

1.	Bucquet (Werner)	..	..	..	8	57	0
2.	Demester (Griffon)	..	..	..	9	3	0
3.	Cessac (Peugeot)	..	..	..	9	39	0

Although L. Renault was the first to arrive in Bordeaux the best time was done by Gabriel, on a Mors. He accomplished the journey in 5 h. 13 min. 31 sec., not counting the neutralisations, and making the marvellous average of 106½ kilometres per hour, that is to say, a little over 66 miles an hour, beating all existing records by a large margin. Gabriel reported that all along the road the spectators behaved with the utmost imprudence. They crowded the course, and only allowed a clear way at the very last moment, when the cars were upon them. Under the circumstances, it is a wonder that more accidents did not happen. The most alarming spectacle was seen towards the end of the race. The thousands of spectators, imagining the last competitors had passed, poured on to the road in a dense stream to return home. Suddenly shouts in the distance announced

belated cars and motor-cyclists tearing along at maximum speed to make up for lost time.

Louis Renault said that the chief misfortune he had encountered was to have run over three or four dogs. He had considerable difficulty with his tyres, while the crowds which had collected to see the cars caused him much uneasiness at times.

After the arrival of the leading competitors news was received by telephone from Libourne that the De Dietrich car, No. 5, driven by Loraine-Barrow, ran over a dog near Arveyres. The car ran off the road and dashed into a tree. The mechanic was killed, and Mr. Barrow was so seriously injured that he had to be conveyed to hospital. According to a later report, however, he is progressing favourably.

Mark Mayhew narrowly averted meeting with a nasty accident, owing to the steering gear of his Napier getting out of order. The car headed for a tree, and Mr. Mayhew, although he put on the brakes, received a severe shock.

Austin stopped at Couhé-Vérac, 213 miles from Paris, through a cross-head pin firing and breaking the connecting-rod.

lifetime. There is hardly a driver of a car which arrived who has not some thrilling experience to relate.

MADRID, Monday.

Enormous preparations had been made for the races in Spain. The Spanish Red Cross Society had established thirty-six posts between Irun and Madrid, each having a doctor and an assistant, eight stretcher bearers, and two cyclists, ready to give first-aid to anyone who might be injured. It was not till after ten o'clock this morning that the Royal Automobile Club of Spain received an official telegram from its Paris Commissioner announcing the decision of the French Government suspending the race in French territory. At first the news was read with incredulity. Then the predominant feeling was one of widespread disappointment, as the race had excited much interest. About mid-day the authorities issued, by telephone and telegraph, orders prohibiting the race in Spain, and instructions to suspend the preparations in Madrid and in the provinces, where almost everything was ready. The Automobile Club has telegraphed to Bordeaux, inviting the racers to come to Madrid as tourists.



Jarrott on his De Dietrich arriving at Bordeaux.

Stead (De Dietrich) met with a bad accident near Montguyon. It is stated that he had just left the village of St. Pierre du Palais, on the border of the Gironde, and was endeavouring to pass Salleron. He had put on full speed, when his car overturned in the ditch, and he was imprisoned underneath. When released it was found that he was unconscious, and that both he and the mechanic had sustained injuries.

Near Angoulême M. Tourand's Brouhot car, No. 23, met with an accident, and it is reported that M. Tourand was killed, and his mechanic and two spectators injured. Another account, probably the correct one, says that M. Tourand was seriously injured, but that the mechanic, two soldiers, and a child were killed.

M. Hautvast's Pipe car, No. 43, caught fire at Angoulême, but having extinguished it, he continued the race.

M. Georges Richard ran into a donkey-cart at Angoulême, and had several ribs broken.

The majority of the drivers of the big cars are gratified that the further stages of the race have been stopped. With a few notable exceptions, they are unnerved, and declare that yesterday they had quite enough narrow escapes to last them a

PARIS, Monday.

Little did I think, as I saw the competitors start off on their long run, that accidents would transform the race, which has been so looked forward to by everybody interested in the automobile industry, into a veritable disaster. But shortly after noon (Sunday) disquieting telegrams began to reach the Automobile Club at the Hotel Pastoret. All along the line of route from Paris to Bordeaux the same excitement existed. Every town and village was crowded; accommodation was strained to the utmost, and, indeed, thousands passed a sleepless night, in order to be ready to see the great racers pass by. And, notwithstanding all these hopes and expectations, the day ended in sadness and gloom to all, and has left a sad and serious impression on the minds of even the most enthusiastic advocates of road-racing. It is the first occasion on which fatal accidents have occurred to competitors in one of these international contests. Although there were accidents in both the Paris-Berlin and the Paris-Vienna races, there were no fatal results to either competitors or their mechanics. Thinking over this regrettable list of accidents which have taken place in the first day's running of the Paris-Madrid race, one cannot help noticing that they are

almost all due to excessive speed, and not to lightness of construction. It seems, therefore, that the conclusion to be drawn is that the safety limit of speed on the road was reached a year ago, and now that limit has been passed. I do not mean to say that there is any danger in the highest possible speed on an open road; but the point has been reached where the least obstacle, entailing a sudden stoppage or a sudden swerve, entails almost the certainty of an accident. On Sunday night, M. Combes, the Minister of the Interior and President of the Council, decided to put an end to the Paris-Madrid contest so far as the French section was concerned, in view of the long list of casualties, and I do not think any right-minded person will find fault with this decision, although it may strike a heavy blow on the automobile industry, and entail losses to a great many people. On lunching at the Automobile Club to-day, I found a great crowd assembled, and every available place taken, no doubt with the object of hearing the latest news and discussing the situation. It was the almost universal opinion that the Government had done right in stopping the race, although, when the accidents are summed up, it will be found that nearly all of them were caused either by stray dogs on the roads or by the imprudence of the spectators.

BORDEAUX, Tuesday.

The cars which took part in the race commenced to disperse this morning. Most of them will be sent back to Paris by railway. The owners of others have undertaken to proceed at a moderate speed, and if possible to take different directions.

His 80-h.p. C.G.V. racer not being ready in time to weigh in for the race, Charron started on an ordinary 15-h.p. touring car, with Madame Charron and a mechanic, arriving at Bordeaux thirtieth in his class.

MADRID, Tuesday.

The Spanish Automobile Club organised an expedition to-day to meet the "tourist" motor-cars at the Escorial. Fifty-nine cars assembled there and came on here at a speed of fifteen miles an hour without any accidents. Arrived in Madrid, a procession headed by the Duke of Santo Mauro, president of the Spanish Club, was formed, and proceeded through the main streets of the city.

As we go to press we learn by telegraph that M. Marcel Renault has succumbed to his injuries.

H.R.H. THE DUKE OF CONNAUGHT has visited Athlone by motor-car from Boyle for the purpose of inspecting the Athlone garrison.

MR. GALLOWAY WEIR, M.P., would like to see motorists lassoed by the police; what is to be done with M.P.'s who make such silly suggestions?

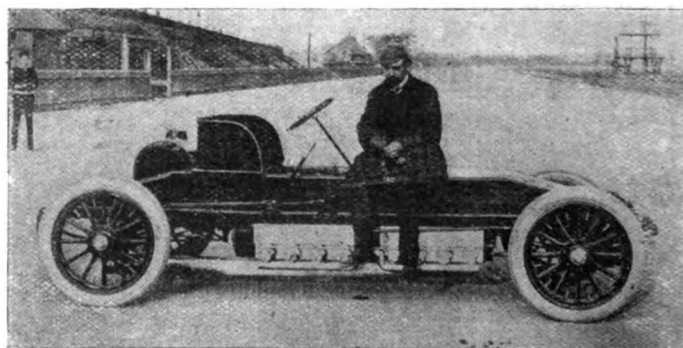
THE Northern Counties Automobile Garage has been opened at 27, Pilgrim Street, Newcastle-upon-Tyne, and every attention will be given to motorists. The garage is open on Sundays, and tyres, as well as other accessories, oils, etc., are kept in stock. Repairs are also undertaken.

MR. R. COATHUPE, of the London Motor Garage Co., Ltd., has worked out some of the times of the cars in the Paris-Madrid race, and has kindly sent us the following statement of the times occupied in covering the 345 miles from Versailles to Bordeaux:—Mors, thirteen started, six finished, in the average time of 6 hours 50 minutes 20 seconds; Mercedes, twelve started, nine finished, in the average time of 7 hours 30 minutes 8 seconds; Pipe, four started, two finished, in the average time of 8 hours 14 minutes 16 seconds; Panhard, sixteen started, nine finished, in the average time of 8 hours 45 minutes 43 seconds; De Dietrich, ten started, six finished, in the average time of 8 hours 46 minutes 16 seconds; C.G.V., four started, three finished, in the average time of 8 hours 55 minutes 40 seconds; Gobron Brillie, five started, three finished, in the average time of 9 hours 9 minutes 52 seconds; Serpollet, seven started, six finished, in the average time of 9 hours 48 minutes 20 seconds.

THE IRISH FORTNIGHT.

DURING the week preceding the race, special arrangements will be made by the London and North-Western Railway Co., for the conveyance of cars between Holyhead and the North Wall, Dublin. Trays are now under construction for the purpose of loading and unloading the cars from dock to steamer and vice versa. The company's ordinary cargo steamers can take about sixteen cars on their main deck, and as three cargo boats leave every day, viz., at 2 a.m., 6.40 a.m., and 6 p.m., except Mondays, when the 6.40 a.m. boat does not run, and Saturdays, when the 6 p.m. boat does not run, no difficulty or delay should occur in getting cars shipped. Early notice of the intention to send a car to Dublin should be given to the Secretary of the A.C.G.B.I., so that the railway company may be informed of the number of vehicles for which provision should be made. Although the passage to Dublin is rather longer than to Kingstown, it must be remembered that the mail boat to the latter port do not carry motor-cars.

ALL secrecy with regard to the car which Mr. Alexander Winton will drive, as one of the American team, in the Gordon Bennett race is now at an end, for this week we are able to give an illustration, together with a few brief particulars of the vehicle, which is to be known as the "New Bullet." The car is quite a new departure, for the engine comprises no less than eight cylinders placed horizontally across the centre of the frame and arranged in two groups of four. The cylinders are 5 in. dia., by 6 inches stroke. The horse-power, however, has not



Mr. Alexander Winton on his Gordon Bennett Racer. [Motor Age.]

been given out. The heads project beyond the side of the vehicle, and they are arranged so that any of them may be removed for inspection or repair by simply taking off a couple of nuts. Above the cylinder heads is the row of eight sparking plugs, protected by a sheet iron slide which may be instantly removed. The cylinders are of cast iron, with aluminium water jackets. All eight of the piston-rods work on to a single shaft which is coupled in the centre. There is but one fly wheel at the end of the shaft and this weighs only 75 pounds, it being claimed that there is no necessity for a heavy fly wheel on account of the steady torque caused by the eight impulses one after another. Between the two batteries of cylinders is the carburettor, which is of the standard Winton touring-car pattern. The speed of the motor can be varied from 100 to 1,000 revolutions. The lubricating system is similar to that on the standard Winton car, there being one lubricating tank supplying two splash boxes, one for each set of cylinders, the flow being regulated by means of wicks. The water circulation is maintained by two centrifugal pumps. Under ordinary conditions the car starts and operates on the high speed, and in this position the drive is direct from the motor to the rear axle by means of a cardan shaft and bevel gear. A slow speed forward and a reverse motion are also provided. The braking system is exceedingly powerful, there being five brakes. There are two brakes on each rear wheel hub and one on the fly wheel of the motor. A pedal actuates the flywheel brake and the innermost ones on the hubs,

while the high-speed lever disengages the clutch and applies the outer brakes on the hubs. The entire mechanism is hung from a wooden frame well trussed with iron bars. The wheels are 32 inches in diameter fitted with 4-inch Goodrich tires. The wheel base of the car is 6 feet 6 inches.

MATTERS are now shaping definitely with regard to the motor-speed trials in Ireland, entries for which must be sent to the Automobile Club, 119, Piccadilly, W., by noon on June 15th. Late entries will be received up to the 25th prox. on payment of entrance fees 50 per cent. higher than those for the earlier comers. Only entries from members of the A.C.G.B.I. affiliated clubs, recognised foreign clubs, or the Auto Cycle Club will be accepted, although the drivers need not necessarily be members of the clubs. Cars fitted with engines giving over 30-h.p. will not be admitted to the tourist section. On another page we give the programme for the various competitions at Dublin, Castlewellan, and Cork.

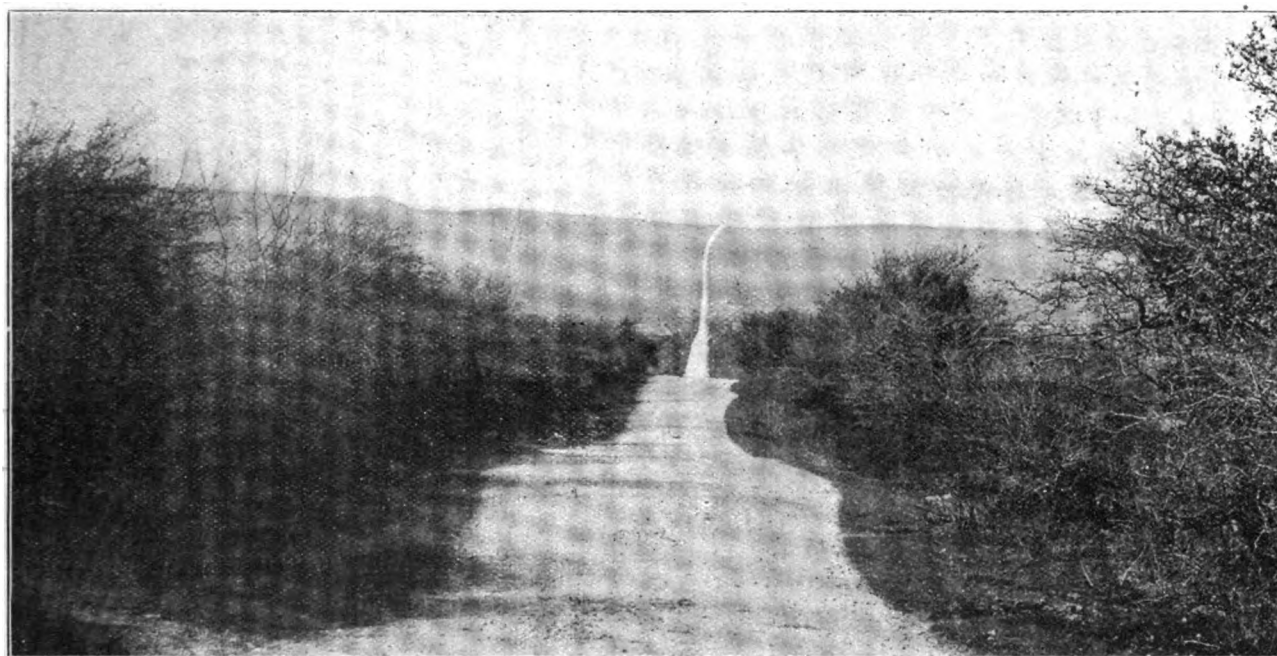
ENTRIES for the hill-climbing competition at Killorglin, Co. Kerry, will be received up to July 11th, at the Imperial Hotel, Cork. The distance will be about a mile up the hill illustrated

special attention of the magistrates to the necessity for granting licenses. On a division, this resolution was declared lost.

CALLING in at the depot of Messrs. S. F. Edge, Ltd., the other day, we had an opportunity of inspecting a neat Gladiator motor delivery van about to be despatched to Cork to the order of Messrs. Robertson, Ledlie, Ferguson and Co. The vehicle, which has a capacity of 10 cwt., is provided with a 10-h.p. two-cylinder engine, and the chassis has been specially designed to withstand the heavy work to which it will be subject. Altogether five vans are being supplied to this enterprising Irish firm, three for use in Belfast and two for Cork.

THE South Kildare Agricultural Society, Limited, of Athy, write asking us to make known that they have ten Irish acres fully and securely enclosed comprising their show grounds, bounded on one side by the Gordon Bennett Course. These are suitable for camping purposes.

IN addition to the race for the Harmsworth Cup, which is open to any motor-boat not exceeding 40 feet o. a., whatever the horse-power, there will also be races for other boats to be



View of the Hill between Killarney and Tralee, on which the Hill-climbing contest will take place.

in the accompanying photograph, the first prize being the County of Kerry cup.

MR. W. NIXON, of Belfast, who was killed in the Paris-Madrid race, was well known in cycling circles in the north of Ireland. Latterly he had taken to motor-cycling, and took part in a competition at Belfast on Easter Monday. He was one of the first members of the Ulster Centre of the Motor Cycle Union, and out of respect to his memory the Whitsun meet between the Ulster and Dublin Centres has been postponed.

AT the last meeting of the Athy Urban Council, Mr. St. John handed in the following notice of motion for the next meeting:—"That Athy being a great centre of the Gordon Bennett race, and as the town is expected to be crowded with a large concourse of sightseers, the Council will consider what its responsibilities are with regard to the needs, requirements, regulations, and control, and water and food supply, and also call the attention of other Councils to the responsibilities that the great crowds entail." In connection with the recent decision of the magistrates not to grant occasional licenses on the day of the race, Mr. J. B. Deegan, V.C., proposed a resolution calling the

held on Friday, July 10th, for a prize of the value of £10, given by Mr. Norman D. Macdonald, the chairman of the Scottish Automobile Club, and a cup of the value of 15 guineas, given by Mr. E. H. Hamilton. The prizes will be offered for the classes for which there are the most numerous entries, and probably two or three classes will be grouped together to race under the handicap of the Marine Motor Association.

AS an example of the keen interest with which Ireland regards the forthcoming event, a Deputy Lieutenant of one of the Irish counties has called the attention of His Majesty's Judges of Assize to the date fixed for the race, viz., July 2nd, and suggests, in view of the universal desire to see this unique event, that they should arrange that circuits shall not commence until, say, Monday, July 6th. If circuits go on as usual on July 1st or 2nd, many people who are obliged to attend the assizes will be deprived of the opportunity of seeing the race.

AMONG Northern firms able to undertake motor-car repairs are Messrs. Greenhill and Craig, of New King Street, Belfast. Their workshops are well equipped with the latest machine tools, and they have every facility for the re-charging of accumulators, etc.

A SCOTTISH HILL CLIMB.

ON Saturday both sections of the Scottish Automobile Club joined in a series of hill-climbing trials on the Kirkfield Bank ascent from the Clyde Bank, near Lanark. Mr. Stephen Smith, B.Sc., and Mr. Andrew Wilson, A.M.I.C.E., had surveyed the hill, and measured off a distance of 701 yards at the steepest part. The profile showed an average grade all over of 1 in 8.99, while 440 yards had an average of no less than 1 in 7, and near the middle—at a turn—about 100 yards varied between 1 in 5 and 1 in 6. A "flying start" of about 120 yards was given—half of it at 1 in 25, and half at 1 in 18, from which the sharp ascent of 1 in 8 was struck. The duties of the judges were divided as follows:—The Right Hon. Sir J. H. A. Macdonald, K.C.B., Lord Justice-Clerk (President, S.A.C.), took a general oversight; Dr. Blair, of Jedburgh, took charge at the top; and Mr. John Wilson, Edinburgh, at the start; while Mr. Norman D. Macdonald, advocate (Chairman, S.A.C.), regulated matters at the middle of the hill, and took care that no competitor broke

This was done after the trials were over, the car being loaded to a total of 1½ tons. The 701 yards, at an average grade of 1 in 8.99, were then covered in 53 secs., or an average speed of 27 miles an hour.

Of the twenty-eight cars entered twenty-three competed, the following being the official results:

Entrant and Description.	Weight unladen in cwts.	Speed in miles per hour over the 701 yards.	Time taken on run of 701 yards in mins. & secs.
SINGLE CYLINDER CARS.			
A. W. Steven (6-h.p. Argyll)	9	9.43*	2 32 1.5
J. A. Peacock (6-h.p. Peugeot)	6½	7.24	3 18 1.5
TWO-CYLINDER CARS.			
Andrew T. Reid (10-h.p. White)	15	6.43	3 43
H. Prosser (10-h.p. Wolseley)	18½	9.42*	2 32 2.5
W. A. Smith (8-h.p. Argyll)	13	8.1	2 57 1.5
Albion Motor-Car Co., Limited (12-h.p. Albion)	22	6.12	3 54 3.5



Scottish Hill Climb—Mr. C. G. Sinclair on his 20-h.p. Serpollet Car.

the rules by assistance from anyone, or otherwise. Mr. S. Smith, B.Sc., supervised the timekeepers, the telephonic work, and worked out the statistical results. Messrs. Inglis (Edinburgh) and Blair (Glasgow) acted as timekeepers, the former also laying down a field telephone. Mr. J. H. Irons, Edinburgh, acted as starter, and Mr. R. J. Smith, C.A., Glasgow (General Secretary, S.A.C.), as marshal. The Lanarkshire police gave much assistance at all points in the regulation of the large crowds of onlookers, and of the cars generally.

As will be seen from the following, Mr. A. W. Steven's 6-h.p. Argyll was the first of the small cars, its speed being 9.43 miles an hour; in the two-cylinder class, Mr. H. Prosser's 10-h.p. Wolseley attained 9.42 m.p.h.; and in the big cars class Mr. C. G. Sinclair, making the fastest time in the trials, averaged 17.2 miles an hour, on his 20-h.p. Serpollet steam car, shown in the accompanying photograph. Mr. Sinclair, not having had much practice in driving his car, could not run it at its real possibility. Therefore it was arranged to give an exhibition run with it in the hands of his French professional mechanician.

W. Weir (12-h.p. Darracq)	16	3.58	6 40
Ed. A. Brown (10-h.p. Argyll)	13	5.71	4 11 2.5
Robert Forester (7-h.p. Panhard)	16	6.26	3 49 1.5
John Adam (10-h.p. Wolseley)	18½	5.03	4 45
Jas. T. Forgie (7½-h.p. Wolseley)	16	6.34	3 46 2.5
J. H. Mathieson (10-h.p. White)	14½	4.0	5 58
J. Hunter and C. J. Campbell Steen (10-h.p. Wolseley)	18½	8.31	2 52 3.5
H. E. Smith (10-h.p. Argyll)	13	6.63	3 36 3.5
A. U. Barr (7½-h.p. Wolseley)	15	7.06	3 23 2.5

FOUR OR MORE CYLINDER CARS.

Hugh Reid (12-h.p. British Gardner-Serpollet)	34	11.18	2 8 2.5
J. H. Paterson (12-h.p. Peugeot)	17	7.31	3 16 1.5
R. Douglas Croall (10-h.p. Napier)	15½	8.81	2 42 4.5
Geo. Macmillan (16-h.p. De Dietrich)	19	12.14	1 58 1.5
Wm. Weir (24-h.p. Darracq)	21½	13.09	1 49 3.5
W. Holms-Kerr (20-h.p. Wolseley)	23	14.46	1 39 1.5
C. G. Sinclair (20-h.p. Serpollet, steam)	24	17.2*	1 23 2.5

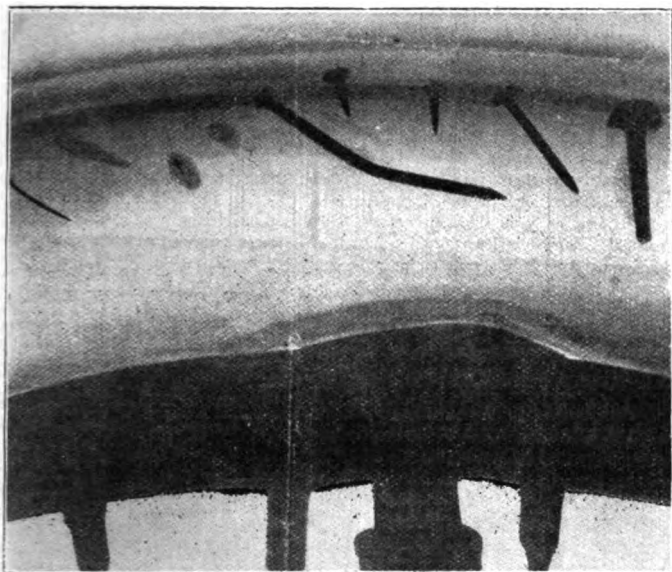
* First in its class.

THE motor traffic on the Cheshire roads on Saturday and Sunday was enormous. Saturday was quite a record day.

HERE AND THERE.

THE King drove to Richmond on Sunday on his new Darracq car.

THE first automobile club in Canada has been organised at Hamilton, Ont., and will be known as the Hamilton Automobile Club.



What the X Rays showed in a Tyre.

[La Locomotion.]

MESSRS. J. ROTHSCHILD ET FILS, LIMITED, inform us that they are constructing for Mr. Harrison Benn, the President of the Yorkshire Automobile Club, one of their special Roi des Belges tonneau bodies, finished in three shades of green, with seating accommodation for six persons, which it is intended to fit to that gentleman's 22-h.p. Daimler.

NOTICES have been prepared by the Minneapolis Automobile Club to be sent to members against whom first complaints may be made for fast or reckless driving. They state that second complaints will be referred to the Board of Trustees, and that if third complaints are made members may be expelled from the Club.

IN connection with our recent article on private motor-car stables, the Keasbey and Mattison Company, of Ambler, Pa., U.S.A., have sent us drawings of the fireproof motor-houses they have recently introduced. They are made in three sizes—10 ft. by 10 ft., 10 ft. by 13 ft. 4 in., and 10 ft. by 16 ft. 8 in., all having a height of 7 ft.

A MOTOR garage in which vehicles to be used for demonstration purposes may be stored will be built at the St. Louis Exhibition by the American National Association of Automobile Manufacturers. The expense of building will be assessed among the exhibitors on the basis of the number of square feet used by each. Foreign exhibitors will also be permitted to use the garage on the same basis as the American automobile manufacturers. The building will have a cement floor, and will be thoroughly protected against fire, but the care of the vehicles must be attended to by the individual owners. There will be all the necessary facilities, such as water supply, electric light, current for charging batteries, lockers for caretakers, and a supply of petrol.

THE Mobile Motor and Engineering Company, Limited, has been registered with a capital of £3,000. The directors are Messrs. M. Lintine (chairman), D. F. Lintine, and L. Antweiler, and the registered office is at Rosebery Buildings, John Bright Street, Birmingham.

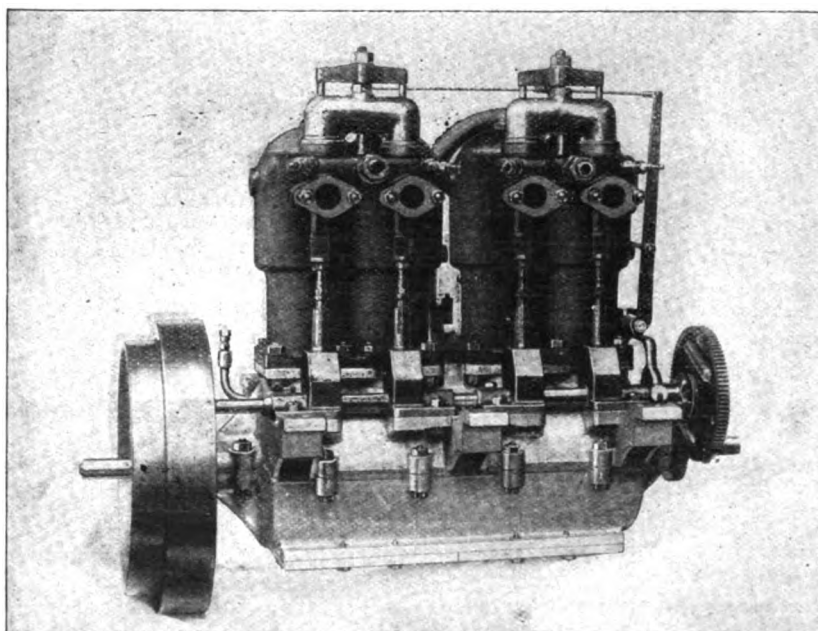
IN Cincinnati automobiles are being labelled with the initials of their owners. The letters are 4 inches in height and 2½ inches in width, and must be attached to a plate and placed in plain view.

RHODE Island Automobile Club is making arrangements for the establishment of charging and storage stations in a number of cities and towns throughout the State. Already arrangements have been made in Pawtucket, Warren and Bristol, and within a few days stations will be announced in nearly all the towns visited by local automobilists.

At the present time the motor-cyclist pays a tax of 15s., and the owner of a four-wheeled automobile is mulcted of two guineas. Mr. Norman, M.P., proposes that the tax shall be based on the horse-power, and he suggests 4s. per horse-power as a fair sum. Thus the motor-cyclist with a 2-h.p. bicycle would pay 8s. The owner of a 5-h.p. voiturette, costing about £150, would be charged £1. Next in the scale, the proprietor of a 10-h.p. car would be required to disburse £2.

WE have received a sample of Patcho, a new preparation for the repair of the outer covers and inner tubes of pneumatic tyres without the use of rubber or chalk. Contained in a collapsible tube, it is easily applied, and sets dry and hard in a very short time, making a permanent repair with the slightest possible trouble. For motor tyres it is claimed to be specially valuable, and the makers—Patcho Limited, Bradford—inform us that they have received orders for it from almost every firm in the motor trade.

THE Forman Motor Company, Limited, of Coventry, have just brought out a 20-h.p. four-cylinder petrol motor, of which we give an illustration herewith. The cylinders are 105 mm. diameter by 110 mm. stroke. Although the engine is normally rated at 20-h.p., it develops 24-h.p. on the brake at a speed of 800 revolutions per minute. The reciprocating parts of the motor have been carefully and accurately balanced, and the engine is capable of being accelerated to a high speed without the slightest sign of vibration. The crank shaft is very stiff, and all the bearings and working parts have ample surfaces which ensure long life; notwithstanding this, the motor is extremely light, its weight being only about 350 lbs. Ready facilities are given for



dismounting and examining the moving parts, the base chamber, which is of aluminium, being provided with inspection doors. The cylinders are cast in pairs, and the base chamber is provided with an ample central bearing. The governor is adapted to act on the in-take, each pair of cylinders being governed separately.

MR. C. D. ROSE, M.P., has become the owner of the 12-h.p. Argyll car driven by Mr. Govan in the Glasgow to London non-stop trial.

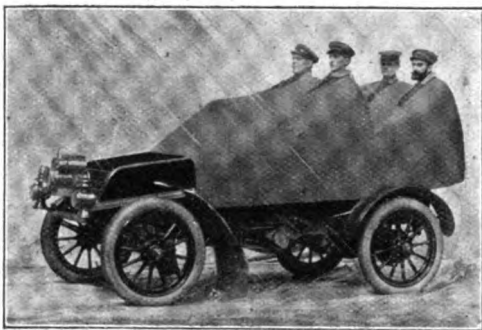
THE Ridley Autocar Co., Limited, Upper Well Street, Coventry, have taken an adjoining factory in order to extend their facilities for coping with their increasing business.

THE Alresford Automobile Club has just been formed, with Mr. G. R. Shield as honorary secretary. Among the members who have already joined are the Hon. Douglas Carnegie, Sir John Shelley, Bart., and Major W. Nicholson.

THE third monthly run in connection with the Challenge Cup Competition of the Reading Automobile Club will take place on Whit Monday to Savernake Forest (32 miles) and back, via the main Bath Road, starting from the club headquarters at 10 a.m.

THE ILFRACOMBE MOTOR-COACH COMPANY, LIMITED, has been registered with a capital of £4,000, to provide a service for the conveyance of passengers and goods between such places as the company may determine by means of public or private motor-coaches, omnibuses, or other vehicles.

THE Automobile Equipment Company, of Indianapolis, U.S.A., has sent us particulars of a "rain apron" of which it is making a speciality. It is adapted for one, two, or four persons, and is made of best silk rubber, with waterproof collars. It is



made to suit Oldsmobiles, Locomobiles, and Winton cars, the illustration showing it in use on one of the latter. As will be seen, it encloses the steering wheel and various control levers, but how the various passengers get into the apron is not explained.

MESSRS. ELLIOTT BROTHERS, of the Century Works, Lewisham, have sent us a copy of their new catalogue of alternating current instruments, which have been designed for use on single-phase and polyphase circuits.

THE Schiemann system of electrical motor-cars is to be given a trial by the Halifax Tramways Committee. The electric cars take their power from overhead wires by means of a trolley; they do not, however, run on rails, but move with freedom on the road. The Halifax Tramways Committee has ordered one car for experiment, and the outcome will be watched with interest.

WRIDGWAY, formerly well known in cycle and automobile circles in this country, but now in the motor trade in the United States, is coming out as a racer, a match having been arranged between him and another American motorist named Oldfield. It is to take place on a track, and will comprise three races of five miles.

A COURSE of automobile lectures is to be delivered at the Y.M.C.A. at Boston, U.S.A., during next winter. The committee has decided that the course shall consist of forty-eight discourses, bearing on the different types of motor vehicles. It is felt that these lectures, combining not only scientific and educational, but also entertaining features, will meet with general approbation among automobile owners, drivers, and in fact any one interested in the advancement or use of the motor vehicle. Several well known American manufacturers have signified their willingness to participate and give an evening to the cause.

THE Birmingham Motor Mart, 103, 104, and 105, Digbeth, Birmingham, are holding monthly auction sales of motor-cars and motor-cycles.

IN connection with the marching route of the Leeds Artillery during Whitsuntide, Colonel Coghlan proposes to make a trial of motor-cars.

THE authorities of the Northern Railway of France are about to make some trials of steam motor-wagons for the delivery of heavy goods.

MR. W. CONAN, of Kildare Street, Dublin, has been appointed agent for Messrs. J. Lovegrove and Company, the well-known motorists' tailors of Piccadilly, W.

THE Sherlock Chair and Cycle Company, Limited, has been registered with a capital of £5,000, to acquire the business carried on at Lowestoft and Wrentham, Suffolk, as N. A. Sawyer and Company, to adopt an agreement with Messrs. R. Skipper, G. J. Skipper, and F. W. Skipper, and to carry on the business of manufacturers of motors, cycles, velocipedes, and carriages.

THE Automobile Club has resolved to sign and seal an agreement which will secure for the use of the Club a racing track for automobiles. The track, which is to be constructed near Purley, will give a circuit of seven miles. It is close to the Brighton Road, and less than fourteen miles from Westminster Bridge. Both trials and race meetings will, it is contemplated, be held upon the track.

HANS RENOLD, LTD., is the name of a company which has just been registered with a capital of £100,000 to acquire and carry on the chain-making and engineering business of Mr. Hans Renold, Progress Works, Manchester. The first directors are Messrs Hans Renold (governing director), H. V. Herford, and P. C. Webb. We understand that the company is a private one, and that no change will be made in the general management and conduct of the business.

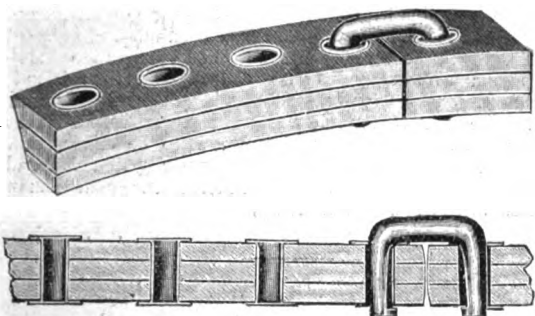
A SHEET of the Dunlop Road Chart has just been issued. It indicates the routes, mileage, contour and gradients of the hills, and description of the surface of all the main roads leading out of London for approximately one hundred miles around. The motorist about to start upon a journey on either of these roads should cut the strip relating to it, and fold it up small enough to fit into his waistcoat pocket, this being an extremely convenient way of carrying the requisite information. The Dunlop Company will send a copy of this chart, rolled up in a postal tube, gratis to any motorist remitting three stamps to cover the cost of postage.

THE Ranelagh Motor Company, Limited, is the name of a new concern which has opened a depot at Ranelagh Parade, Barnes, S.W., close to the Common and to the Ranelagh Club grounds. Among the directors is Mr. A. E. J. Steele, who, it may be remembered, won the *Motor-Car Journal* motor-cycle cup the first year it was put up for competition by the A.C.G.B.I. The Ranelagh Company are keeping a stock of accessories for petrol, steam, and electric cars, a plant for charging the batteries of the latter having also been installed. They have ample space for storing a number of cars, and are equipped for carrying out repairs of all kinds.

THE first of the trials organised by the western section of the Scottish Automobile Club on the lines of the quarterly trials of the A.C.G.B.I., was held recently, the route being from Glasgow through Dumbarton, Helensburgh, over Whistlefield Hill, Arrochar, Ardlui, to Crianlarich, thence back by Ardlui, Tarbet, Luss, Alexandria, and Bowling, to the city—a total distance of 107 miles. Three 12-h.p. Arrol-Johnston cars, one having a six-seated body, took part in the trials. Car No. 1 made a non-stop run on 6½ gallons of petrol; car No. 2 (the six-seated) had two stops on the hill-climb, one due to stoppage of engine, and a momentary one in changing gear—the petrol consumption was 7½ gallons; car No. 3 made a non-stop run on 6½ gallons of petrol.

MOTOR-CYCLING NEWS.

THE Lycett Saddle and Motor Accessory Company, Limited, of Birmingham, have sent us a sample of their new motor-cycle belt and connection, illustrated herewith. The belt itself is of V section, made of raw hide, stretched and run on pulleys before being sent out. A feature of the belt is the provision, at intervals of three-quarters of an inch, of central eyeletted holes, which



it is claimed will not pull out. The connection consists of a U-piece of steel, placed in position by twisting the two ends of the belt so that they lie alongside each other. Should the belt stretch it can quickly be shortened, all that is necessary being to cut one eyelet away and place the connection in the next one. The two ends of the belt are brought close to each other, this being claimed to obviate all possible loss of power.

MOTOR-CYCLING seems to have "caught on" in Wales, and two motor races are announced in the cycling meet at Carmarthen on Whit Monday. Suggestions are being made that the tracks at Cardiff, Pontypridd and Carmarthen should be re-banked so as to make them safer for high speed.

THE new accumulator bag for motor-cycles, recently referred to in our columns as the introduction of Messrs. A. W. Gamage, Ltd., is meeting with favour. The bottom portion is lined with tin to prevent the leather spoiling should the acid be spilled. The top is lined with rubber to ensure perfect insulation.

SOME new motor-cycle records were set up by Mr. F. Chase on the Canning Town track on Thursday of last week. Both the flying and standing starts records for the mile and five miles were beaten, while the ten miles standing was reduced by no less than 23 sec. The following are the new and previous times:—One mile (standing start).—1 min. 15 2-5 sec., previous record 1 min. 23 4-5 sec. (accomplished by Barnes). One mile (flying start).—1 min. 6 3-5 sec., or an average of 55 miles an hour; the previous record was 1 min. 9 3-5 sec., by Mr. Chase himself. Five miles (standing start).—5 min. 57 2-5 sec., previous record 6 min. 7 sec., by Barnes. Five miles (flying start).—5 min. 36 sec., previous best 5 min. 50 sec., by Chase. Ten miles (standing start).—11 min. 35 sec., previous best, 11 min. 58 sec., by Barnes. After doing 13 miles both of the tyres became so worn out that Mr. Chase had to give up any further attempts at record breaking. His time for the 13 miles was 15 min. 6 sec., but he had to slow down very considerably during the last few laps. The machine was a "Bat" with an M.M.C. engine.

THE New York and Alpha Motor Cycle Clubs held a joint run on the 10th inst. The course was from Brooklyn to Patchogue and back, a distance of 117 miles. Out of sixty-eight entries forty-seven started and twenty-nine finished within the time limit. This is considered a good result in view of the fact that the Long Island police were out in force to restrict the motor-cyclists to the eight-mile rate within corporate limits.

IN connection with the 200 miles reliability trial for the S. F. Edge trophy, on June 27, it is understood that it is a reliability and not a speed trial. The awards are—first, trophy value £20; second, gold centre medal; third, silver medal. Certificates

will be given to all members of the Motor Cycling Club completing the distance at an average speed of not less than eleven miles per hour. The route selected is over four out and home courses of approximately fifty miles each, radiating from one centre, situated within 20 miles of London. Competitors will be allowed to dismount for congestion of traffic, but such stoppages must be reported; no adjustments of any description whatever will be permissible. Entries should be forwarded in time to reach the Hon. Sec., Mr. G. E. Roberts, 17, Fieldhouse Road, Hyde Farm, Balham, S.W., not later than first post on Monday morning, June 22nd, accompanied by entrance fee of 5s.

JUDGING from the particulars we have received Whit Monday will be a day of motor-cycle racing. Events for the new machine are included in the programmes of the meetings to be held at Waterford, Tunbridge Wells, Putney, Carmarthen, Slough, St. Albans, Chichester, etc.

THE Motorcycle Club de France is organising a Whitsun tour from Paris to Dieppe and Treport. Perhaps it is a little too early to suggest a joint meeting of the Motor-Cycling Club with its Parisian compeer.

FROM Berlin (Gustav Schmidt's Verlag) comes a little book by Herr Wolfgang Vogel, entitled "Das Motor Zweirad und Seine Behandlung." Motor-bicycles, while a more recent innovation in Germany than in England, are rapidly coming to the front in the Fatherland, and the work before us is the first of the handbooks relating to the motor-driven bicycle that may be expected to make their appearance in quick succession. Herr Vogel appears to have produced a most useful guide; he devotes the first sixty pages to "theory," and in this section describes the action of the petrol motor, the carburettor, ignition, lubrication, cooling, etc., each chapter terminating in a series of questions, the answers to which the reader is recommended to put in writing, in order to the more familiarise himself with the various details. After the theoretical part comes ninety pages of "practical," the use of which is much enhanced by the clearly drawn diagrams accompanying the text. The book is, of course, intended for German motor-cyclists, and is printed in the language of the country.

FROM the chapter on lubrication in the book referred to above, we take what may prove to be a useful hint to motor-cyclists in this country. After a motor-cycle has been run two or three hundred miles, it is sufficient to give a fresh charge of oil to the crank chamber about every 20 to 25 miles. This to the average rider is equal to, say, an hour's run. Taking advantage of this, Herr Vogel suggests a method of converting a watch into a useful



indicator. On the rear side of the glass an arrow should be painted with Indian ink. In most watches the glass is not so tightly fitted that it cannot be rotated by the hand. Thus the arrow may be brought into line with the figure representing the hour, as shown in the illustration, when the crank chamber requires a fresh charge of oil. If the watch be fitted in a carrier on the handle bar, the utility of the arrangement will be increased, the rider having no need to trust to memory as to the time of oiling up.

THE 10-H.P. "KRUPKAR."

WE are this week able to illustrate one type of car which the recently-formed concern known as Krupkar, Limited, is introducing into this country. The vehicle, as will be seen, follows in general outline the standard lines, and is thoroughly up-to-date in every respect. The engine is of 10-h.p., and comprises two vertical cylinders, located under a Mercedes type bonnet with combined honey-

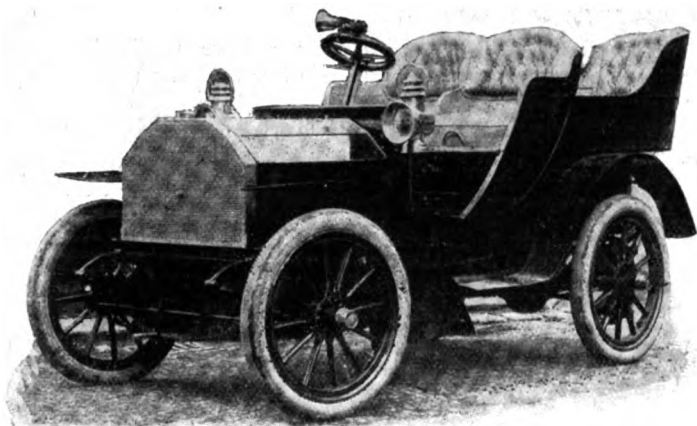


Fig. 1.—General View.

comb radiator and water tank, a current of air being drawn through the cooler by means of a fan. The inlet valves are mechanically-operated, while the ordinary type of electrical ignition is fitted. The governor is adapted to act on the gas admission, and in conjunction with this is a hand "accelerator." The power is transmitted in the usual way, through a pedal-operated friction clutch, gear box, cardan shaft and bevel-

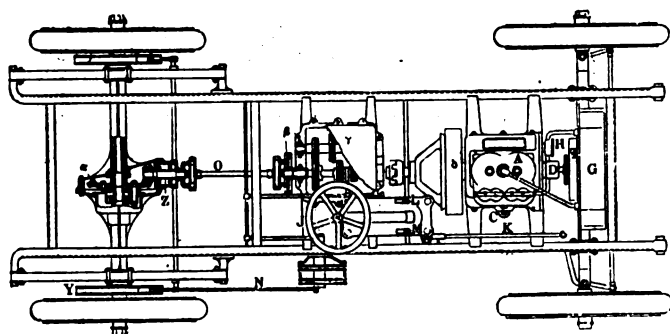


Fig. 2.—Plan of Chassis.

gearing to the rear live axle. Three speeds forward and a reverse motion are controlled by a single lever, the drive being direct on the top gear. Special attention has been devoted to the body work, which is of the most luxurious kind; the road wheels are of equal size, shod with stout pneumatic tyres. The car complete weighs about 16 cwt. and appears to run very silently. The company also expect over in a few days a 16-h.p. 4-cylinder car on similar lines.

THE Bath Rural District Council has passed a resolution in favour of the retention of the twelve-miles-an-hour limit, and the numbering of motor-cars.

MR. W. H. THOMAS, who has been connected with the Motor Manufacturing Company, Limited, Coventry, as chief of the clerical staff, for over five years, has resigned his position.

A VAN driver employed by a Harrogate laundry has been fined 2s. 6d., and 6s. 6d. costs, for unlawfully not keeping a wagon on the left side of the road, so as to allow free passage.

CORRESPONDENCE.

THE IRISH FORTNIGHT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The question of hotel charges in Ireland in connection with the Gordon Bennett race has been receiving a great deal of attention, and I fear many people will be influenced not to visit this country on account of the statements made. I would point out that it is only in the actual neighbourhood of the course that the charges are extortionate; the accommodation here is woefully inadequate, both in quality and quantity, and, taking advantage of the latter deficiency, prices have been put up to absurd figures. In Dublin, however, accommodation can be had on very reasonable terms. Only a few days ago I was able to get excellent rooms for a friend of mine at 5s. a night, the charges for breakfast and dinner being 2s. and 2s. 6d. respectively. The same reasonable policy prevails in Co. Down, Co. Cork, and Co. Kerry, where part of the programme is to be carried out. With the exception of two or three hotels which are specially high class and always expensive, the charges are reasonable, considering the great demand there will be for accommodation.—Yours truly,

R. J. MCCRERY.

INFORMATION WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you kindly give me your opinion as to whose car will most nearly suit my requirements? (1) Absolutely silent. (2) To seat the usual four people. (3) Chain gear (I presume it is the best). (4) Simplicity throughout. I do not wish the car to go more than ten miles an hour—if it will do this without question, it is all I want, but it must climb any hill; as long as it does, speed is no object. No one but a madman wants to go at a quicker pace than he can really enjoy the country he is going through. I quite understand that there are a few childish grown-up people who—while their toy is new—like to cut through the air in an insane manner, just for the novelty of the thing. But how mad? Nothing whatever is gained by pace—save (1) discomfort, and (2) a chilled system.—Yours truly,

VILLIERS LUCAS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I have the advantage of the opinion of your readers regarding the choice of a car of the following character:—a. To seat two, Victoria pattern, with hood and screen for weather protection, neat in appearance, and preferably having no radiator or bonnet visible, simply a dash-board. b. Speed not exceeding 20 m.p.h., but capable of taking long steep hills at half that pace. c. Silence in working, and also when engine is running with car at rest; I mean absolute silence, and not that which is possessed by some so-called silent engines. d. Simplicity of mechanism, so that one can look after it oneself; and means of starting engine from seat.

I am a surgeon, and want it for both practice and pleasure. I often have several visits in a quarter-mile, so it must be easily started, and there is nothing more disturbing than the throb of a petrol engine, when one is examining a patient, hence I am anxious to get a very silent car. Am I asking for the impossible, or can such a car be obtained at a moderate figure. What horse power and type of engine is most suitable?

I have an electric installation, but the price (7d. per unit) puts electricity out of the question for motive power, unless by combined petrol-electric engine.—Yours truly,

W. W. L., F.R.C.S.

STANDARDISATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Storey's letter in your last issue hits the nail on the head. What a blessing it would be if standard bolts and screws were used by every manufacturer of motor-cars. In the operation of automobiles screws are occasionally lost, bolts broken, or threads stripped, and the repair of such an accident, seemingly insignificant, causes grave difficulties if screws and bolts are not of standard thread. It is evidently impractical to carry duplicates of all bolts and screws on motor-vehicles, and in case of accident on the road it would then be necessary to have a new bolt or screw made to replace the one which was lost or damaged. On the other hand, if all bolts and screws used are standard, a supply of the standard sizes can be kept on hand, and almost any repairs of this nature can be made immediately. Some short-sighted manufacturers are employing screws and bolts with special threads, expecting to thereby monopolise the repair of vehicles of their manufacture. But a little reflection will show the error of this course. Frequently designers of motor-vehicles adopt special threads, because the standard seems to be too coarse, or for other reasons. While there may be excuses for such a proceeding, they are certainly rare, and standard threads, which can be cut with standard taps and dies found in every engineering shop, should always be given the preference. The use of standard bolts and screws not only reduces the chances of breakdowns on the road, but also reduces the cost of manufacture, for they are

turned out in all degrees of finish by special manufacturers at a price much below that at which the ordinary shop can produce them.—Yours truly,
DIE STOCK.

THE MOTOR QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It was stated in the *Times* of May 20th that on the previous day in the House of Lords the Marquis of Granby said: "The Chief Constable of one county, Hampshire, reported that he had received thirty or forty complaints as to motor-cars having done serious damage, but in only three or four cases were the police able to identify the drivers; they ran away." Please permit me to say that the noble Marquis's statement was not in accordance with fact. The Chief Constable of Hampshire, in reply to my enquiry, writes: "I have made no report at all on the subject." This should be conclusive. Motorists may expect Lord Granby to express his regret.—Yours truly,

H. STRATTON BATES, Colonel.

RESULT OF THE POSTAL VOTE OF THE AUTOMOBILE CLUB OF GREAT BRITAIN AND IRELAND.

THE result of the postal vote recently taken by the A.C.G.B.I. is as follows:—

Answers to Question I., viz.:—

- (1) Provided that the three following concessions are obtained—
 - (a) Abolition of the specific speed limit,
 - (b) Alteration of the law as laid down in *Sutton v. Mayhew*,
 - (c) Raising of the tare limit,

Are you in favour of identification of motor-cars by means of numbers or names conspicuous when the cars are in motion?

Yes 1,015 votes.
No 463 votes.

Majority in favour of the policy of the Legislative Committee 552

Answers to Question II., viz.:—

- (2) Are you in favour of nothing further being done by the Club at present to promote legislation?

Yes 277 votes
No 964 votes.

Majority in favour of the Club promoting Legislation 687

Answers to Question III., viz.:—

- (3) Are you willing, in exchange for the removal of the specific speed limit, to consent to the following additional restrictions?

- (a) Small and inconspicuous identification plates;
- (b) Certification of drivers;
- (c) An increase of the penalty for automobilists guilty of serious offences, such as giving false names and addresses or endeavouring to avoid identification after causing an accident.

Yes 474 votes.
No 718 votes.

Majority against Lord Russell's proposals 244

There were 45 spoiled papers, and a considerable number of replies were of a qualified character, and accordingly could not be tabulated.

The following is an analysis of the voting by Clubs:—

Name of organisation.	No. of members voting.	Question I.		Question II.		Question III.	
		Yes.	No.	Yes.	No.	Yes.	No.
A.C.G.B.I. ..	1152	800	292	192	733	311	542
Lincolnshire ..	29	12	14	7	11	13	11
Liverpool ..	29	14	13	5	17	13	11
Manchester ..	56	25	29	9	35	32	21
Midland ..	22	11	8	8	11	6	12
Norfolk ..	40	23	15	10	22	16	17
Nottingham ..	31	22	8	4	20	8	16
Yorkshire ..	57	26	28	7	30	25	18
Scottish ..	65	28	29	22	24	22	22
Irish ..	24	18	3	3	19	4	14
Motor Union ..	58	28	24	10	34	24	26
Auto-Cycle ..	8	8	—	—	8	—	8
Total ..	1571	1015	463	277	964	474	718

POLICE TRAPS.

BETWEEN Snettisham and Heacham, on the road from Lynn to Hunstanton, is a carefully-planned police-trap discovered by Mr. Frank Morris.

GREAT care is necessary in passing through Potters Bar and Cambridge.

THERE is a measured three-quarters of a mile on the London side of Stilton, on the Great North Road.

A SOUTH LONDON motorist sends us word of three traps into which he has fallen recently. One is at Twyford, near Reading, on the Bath Road

another is to be found on entering Maidenhead from Reading, and the third is on the London side of Colnbrook.

THERE is a police trap about three miles from Wetherby, on the road from Borobridge. It is a measured $\frac{1}{4}$ mile of good road, and is slightly down hill. Two men are stationed behind a gate, and another at the top of the hill—all three in plain clothes.

ON the Ross Road, near Abergavenny, there is a measured distance between the telephone posts Nos. 84 and 95.

MR. G. B. WAUGH, of Baildon, advises motorists that on the main road anywhere between Hellifield and Settle there are many traps. Going north there is a measured mile from where the road passes underneath the railway bridge to where it crosses over the railway near Long Preston. There are also in the village of Long Preston two 220 yards which one policeman controls; about half a mile further on towards Settle there is another trap near a barn on the left-hand side of the road. Going out of Settle there is a quarter of a mile from underneath the railway bridge to where the main road passes over the river Ribbles. The police in the district are very strict, and news of cars that they do not catch that are exceeding the legal limit is telegraphed in the hope of their being stopped some miles further on the road. Whitsun visitors please note.

FURIOUS DRIVING CASES.

COUNT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Wetherby ..	F. R. O'Callaghan, Guildford	20 m. p. h.	10s., etc.
Bromley ..	*F. Cunis, Blackheath	32 m. p. h.	20s., etc.
(Kent)			
Eastbourne ..	*F. Chart	18 m. p. h.	£1.
Maidenhead	P. D. Lee, Westminster, S.W.	—	£2, etc.
" ..	A. Merrick, Wargrave	—	£2, etc.
" ..	C. Georges, Esher	—	£2, etc.
Beaconsfield	P. T. Watson, Mount Street, W.	25 m. p. h.	£5, etc.
Alton ..	C. Dodd, Maidenhead	22 m. p. h.	£5, etc.
" ..	E. Slade, Shaftesbury Avenue, W.C.	26 m. p. h.	£1, etc.
Broxton ..	V. Lee	30 m. p. h.	£5, etc.
(Cheshire)			
Kingston ..	L. Savory, Westminster, S.W.	—	£2.
Weymouth ..	J. H. De. Matto, Weymouth	—	£2, etc.
Abergavenny	J. Platel, Abergavenny	37 m. p. h.	40s., etc.
Derby ..	R. J. Arundel, Derby	20 m. p. h.	10s., etc.
Bournemouth	W. Burnell, Bournemouth	—	£1, etc.
Aldershot ..	Hon. C. D. Baring	—	£5.
Epsom ..	B. Wingrove	19 m. p. h.	£2, etc.
" ..	W. Warren Smith, London, W.C.	22 m. p. h.	£3, etc.
" ..	B. Krettner	18 m. p. h.	£3, etc.
Richmond ..	H. Groom, S. Kensington	—	40s., etc.
Woking ..	A. Robertson, London, W.	24 m. p. h.	£3.
" ..	T. B. Percy, Ealing	22 m. p. h.	£3.
Winchester ..	*L. Savory, Westminster	24 m. p. h.	£10 10s.
Belfast ..	W. G. Watson	15 m. p. h.	10s., etc.
Abergavenny	J. Platel	—	40s., etc.
Newport	C. Peaty, Cardiff	—	10s., etc.
(Mon.) ..			
" ..	M. R. Monet, French Consul	—	10s., etc.

Where no alleged speed is given it is understood to be above the legal limit.

* Motor-Cycle Cases.

AT Winchester, on Saturday, Mr. L. Savory, of 36, Buckingham Gate, W., was fined ten guineas, including costs, for driving his car at twenty-four miles an hour at Kingsworthy on May 10th. He was pursued by a plain-clothes policeman, who caught him up at the George Hotel, where he declined to give his name until the plain-clothes man proved that he was a policeman by bringing a uniformed officer to identify him. While he went away for this purpose the motorist, he alleged, made a rush for his motor-car in order to get clear.

THE Hon. Claude D. Baring, a lieutenant in the Coldstream Guards, has been fined £5 and costs for driving a motor-car at the excessive speed of twenty miles an hour at Finchampstead, Berks. The evidence showed that in order to save a dog the car swerved on to the footpath, knocking over a woman with a perambulator and baby, smashing the perambulator to pieces, and injuring the woman.

CLAIM FOR DAMAGES.

CHARLES WATKINS, a valet, has been awarded £125 damages in the King's Bench for personal injuries received through a motor-car belonging to Mr. Henry J. King, of 138, Piccadilly, colliding on Maidenhead Bridge with a victoria which Watkins was driving.

"SOUND THE HORN."

At Terrington Petty Sessions, G. L. Pidgeon, London Road, King's Lynn, was summoned for being the driver of a motor-bicycle, and neglecting to give due warning of approach at West Lynn, on May 6th. The allegation was that there were two wagons, each drawn by three horses, proceeding along the highway at West Lynn, and defendant, who was on a motor-cycle, overtook them, but gave no warning of his approach. Both teams of horses shied when the cycle reached them, but one of the drivers stopped his team. The other team, however, bolted, and the reins of the two front horses were pulled out of the driver's hands, and the animals turned up Clenchwarton Road, where a man managed to stop them just in front of a large pit. It was also alleged that defendant passed the horses when they were running away, and went off at a great speed. Defendant said he sounded the horn before he reached the horses. He was fined 40s. and 15s. costs.

CLAIM FOR DAMAGES.

MR. JUSTICE KENNEDY and a special jury disposed of the case of Crossley and others v. the Imperial Motor and Cycle Works, on Tuesday. It was an action to recover damages for personal injuries alleged to have been caused through the negligence of the defendants. The defendants denied negligence. Counsel, in opening the case, explained that Mrs. Crossley on the 16th of July last year was driving a pair-horse wagonette in the New Forest, near Lyndhurst, accompanied by Mr. and Miss Furze. The carriage was travelling at a moderate pace, and when it arrived at a point a little to the south of Bramshaw Church a motor-car belonging to the defendants, and driven by one of their servants, approached from the opposite direction. Mrs. Crossley twice held up her hand as a signal for the motor-car to stop, but the driver took no notice and continued to approach, whereupon the horses became unmanageable, suddenly turned round, broke the pole, and bolted, with the result that the three plaintiffs were thrown out, and all were more or less seriously injured. A great deal of evidence having been given by both parties, the jury found that there had been negligence on both sides, and his lordship reserved his judgment.

MOTOR-CAR FATALITY.

BEFORE Sheriff Henderson, in Edinburgh Police Court, Alexander Mack, a motor-car driver, has been remitted to the Sheriff on a charge of culpable homicide, it being alleged that he drove a motor-car in a reckless and careless manner in Dalry Road on Saturday, in consequence of which Elizabeth Weston or Henderson, seventy-two years of age, was knocked down and killed. The motor-car is the property of Captain Ash, Mid-Calder. The prisoner appeared before Sheriff Henderson in Edinburgh Sheriff Court and made a declaration. Bail was asked for, and the Sheriff fixed the amount at £15.

SPEED TRIALS IN IRELAND.

ALL the events in the Phoenix Park, Dublin, on July 4th will be run over a course of one mile and one kilometre—2,853'6 yards—from a standing start, in heats of two cars or six cycles. In the motor-cycle section there will be three classes, five in the tourist section, two in the racing section, and two open events, one a scratch race for a 100-guinea challenge cup, which will be presented to the fastest car, weighing under 1,000 kilos., over the flying kilometre, irrespective of whether the successful car be driven by steam, electricity, petrol, or other motive power, provided it cover the kilometre in under 40 seconds = 90 kilometres, or 55·9 miles per hour; the cup to become the property of the member of an Automobile Club whose car or cars may win it two years in succession. The present holder is M. Leon Serpollet. The other open event will be a race for motor vehicles of any power or weight, propelled by any form of motive power. The winner will receive and become the holder of the challenge cup, provided that if there are not three starters the kilometre is covered in not more than 40 secs. or 55 miles per hour. The cup becomes the property of the owner of the car winning it two years in succession, or three times in all, the present holder being Mr. C. Jarrott.

At Castlewellan, on July 7th, there will be four miles' speed trials for motor-cycles, and in the tourist section a handicap for a trophy, to become the property of the competitor winning it three years in succession. Two events have been arranged in the racing section, and the open event will be a hill-climbing competition for the Henry Edmunds' trophy for cars driven by a spirit internal combustion engine. The distance will be 1,200 yards.

On July 10th there will be contests at Cork for cups presented by the Mayor and Corporation. Various other prizes are offered in connection with these events, and intending competitors can obtain definitions of the classes and further particulars from the Secretary of the A.C.G.B.I.

SERGEANT JARRETT'S VIEWS.

At Woking, G. Pratt appeared to answer a summons for being the driver of a light locomotive drawing a vehicle that exceeded the rate of 6 miles per hour in Ripley Street. P.S. Jarrett deposed that at 5.50 p.m., on May 10th, he saw defendant riding a motor-bicycle with a trailer attached and a gentleman riding in it. He came from the direction of Guildford through Ripley Street, and covered 176 yards in 15 secs., or at the rate of

24 miles an hour. Sergeant Jarrett added the motor-bicycles were getting a greater nuisance than the cars. With their high gears they simply flew through the village. A penalty of £3 was inflicted in this case also.

ACCIDENT AT A RACE MEETING.

A SERIOUS accident occurred in the final of the five-miles motor-bicycle race at Bristol Post Office sports on Saturday, by which two persons lost their lives and several others were injured. The riders left in for the final were T. H. Tessier, London; G. A. Barnes, London; E. Kickham, Bristol; and P. C. Bailey, Bristol. Kickham retired at the end of the first lap through his chain breaking, thus reducing the competitors to three. All went well until the middle of the third mile, when Barnes, who had completed eight laps, was about to pass Bailey, who had completed nine. Bailey looked round, and in doing so swerved his motor on to the upper part of the embankment. Barnes managed to pass him on the outside, but on descending to the lower level of the track his machine slightly wobbled. Bailey immediately cut into him, causing Barnes's machine to skid, and both men and machines were thrown amongst the spectators. Several people were rendered unconscious and were severely injured, but Bailey, who was riding a motor of 2½-h.p. and 110lb. weight, escaped with slight injury to the face. Barnes, who was riding a 2½-h.p. motor, was, however, very badly injured in the face and legs, and was promptly taken to the Bristol Royal Infirmary, as were ten spectators. The sports were abandoned after the accident, and no more motor-cycle races will be held there this season.

ON the 17th inst., the Swiss Automobile Club held a series of flying kilometre races near Geneva. The best time (39 3·5 sec.) was made by M. Perrot on a Rochet-Schneider (heavy car class). M. Duval, on a Georges Richard, was first in the 400-650 kilos category (time 49 sec.), while Duffaux, on a Griffon, was first in the motor-cycle section (47 1·5 sec.).

It having been decided to run motor-cars between Ilfracombe and Lynton and Lynmouth, in connection with the Lynton and Barnstaple Railway, two of the vehicles have arrived at Ilfracombe, and will, it is anticipated, commence running on June 1st. The cars hold twenty-two passengers each, and will run to Blackmore Gate and back, passengers taking the train to Lynton.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, JUNE 6, 1903.

[No. 222.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE action of a French society in petitioning the King of this country to prohibit the Gordon Bennett race because of the laxity of arrangement in connection with the motor-car contest in France must be regarded with anything but pleasure by the sticklers for propriety. Had the society been concerned with the general question of the protection of the public and had taken unto itself the lives of the French public its interference with the Irish event might have been tolerated; but, under the circumstances, we can assure our readers that the holding of the event will not be seriously influenced by outside meddling.

The Leicestershire Club.

THE Leicestershire Club had a very pleasant run on the 23rd ult., the weather being delightful, and the muster a good one. Starting from the Bell Hotel, an old coaching house, the cars proceeded to Oakham by way of Uppingham, which meant travelling along the stiffest road out of Leicester. The cars, however, negotiated the hills well, and even the famous Wardley Hill was successfully surmounted by the whole of the party. Thurnby, Houghton-on-the-Hill, Billesdon, Skeffington, Tugby, and East Norton were rapidly passed, and in very quick time the quiet old Rutlandshire town of Uppingham was reached. Turning to the left without even stopping to glance at the well-known school of the place, the party made, by way of Preston and Manton, for Oakham, where tea had been arranged for at the Crown Hotel. Rather more than thirty sat down to tea, and the company included Colonel Lionel Powell and Mr T. C. King, Vice-Presidents, Messrs. H. R. Harding, J. W. Hemmings, A. McAlpin, R. E. Parker, W. Dalrymple, J. Dalrymple, T. C. Clarke, S. W. Clarke, Hargrave, Orson Wright, V. Oliver, J. Bennett and others. The President of the Club, Mr. E. G. Mawber, started with the party, but was not able to make the whole journey. The return trip was commenced soon after 7 o'clock, the first stage being to Melton Mowbray, passing through Somerby and Burton Lazars. After a short halt at the hunting town a start was made for Leicester, which was reached about 10 o'clock.

The Reliability Trials.

THE following marks will be allotted under the various heads in connection with the Reliability Trials to be held this year: 3,000 for reliability; 1,500 for cleaning, lubricating, etc. (it has been agreed that the total amount of fuel consumed throughout the trials should be measured, and that each manufacturer might adopt any system he pleased for filling his tanks); 1,000 for hill-climbing; 1,000 for condition after trial; 250 for brakes; 250 for steering; 250 for absence of noise; 250 for absence of vibration; 500 for speed on the track; 500 for freedom from dust raising; 250 for re-starting on a hill; 250 for absence of vapour or smoke; 250 for finish and appearance before and after trials; 125 for general cleanliness of motor and gear;

250 for accuracy of horse-power; 500 for fuel consumption in relation to power (the details when formulated to be settled by the Judges and communicated to competitors); and 250 for cheapness.

Side-Slip Competition.

THE first Eliminating Test in connection with the competition organised by the A.C.G.B.I. with regard to side-slip will be held in November, the last day of entry being October 17th. Competitors will have to fit their devices for the contest to a car weighing not less than 15 cwt., and will be required to have pneumatic tyres fitted. In interpreting the results of tests, the design of the car on which the device is tested as affecting side-slip will be considered. Consideration will also be given to the effect of the device upon the speed or resiliency of the tyres or power needed to drive it; the effect upon the road; to the effect upon the life of the tyre; to the liability to dangerous derangement or fracture; and to the price. A contest of comparative merit may be ascertained on a private track, prepared with a coating of slippery, clayey, or other material, and the shortness of S bends between the limits which can be negotiated without material slipping shall give a figure of merit. Long runs on limestone or other natural greasy roads will be arranged for in suitable weather, one suggested being through Miller's Dale, Darley Dale, etc.

The New Petroleum Spirit Regulations.

WITH regard to the new regulations relating to the storage of petroleum spirit, Captain W. B. Lloyd, H.M. Inspector of Explosives, writes us as follows:—"It may be of interest to you to know that the present issue of the regulations was necessitated by the fact that, whereas petroleum spirit for use in light locomotives was exempted from the operation of the Petroleum Acts under the old regulations, and some owners of motor-cars were unable to observe the conditions laid down in those regulations, and a decision had been given by a magistrate that it would not be in order for a local authority to grant a licence under the Petroleum Acts for the storage of such spirit, it became impossible for owners to keep such spirit legally at all. The new regulations, as you will observe, deal with such a case, and motor-car owners, whose 'store houses' do not observe all the conditions, can now obtain a licence under the Petroleum Acts adapted each to the special case in question. This applies more particularly to many such places in London where a motor-car is kept in a coach-house forming part of an old stable and having living rooms over it, originally intended for a coachman." Since our recent comment the regulations have been published in the "Gazette."

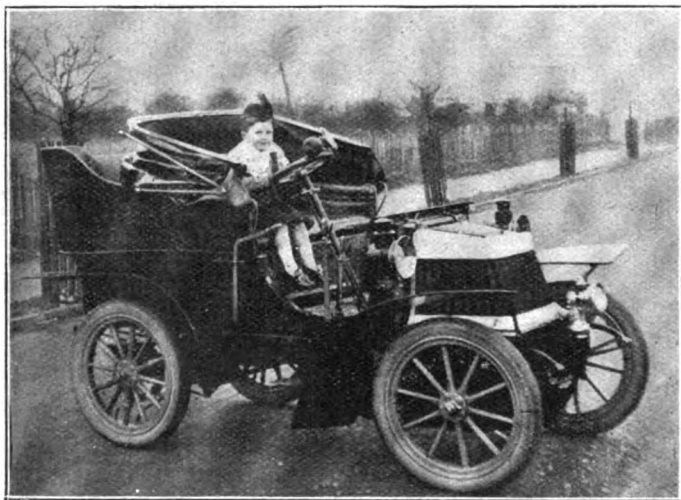
Ladies on Tour.

MRS. WOODHALL MARTIN, of Norton Park, Worcestershire, has just completed a motor-car tour on the Continent. She was accompanied by her daughter, and they motored from their midland home to London, thence proceeded to Dover and Folkestone. Having crossed to Boulogne they journeyed along

breaking their journey at Nice, Beaulieu, Monte Carlo, Mentone, and so on. After exhausting the beauties of the Riviera, Mrs. Martin and Miss Woodhull faced north, and set out on their homeward way. Their 20-h.p. Mercedes Simplex climbed the Alpes Maritimes like a bird, only, unlike a bird, it was never tired, and always ready to plume its wings afresh for another flight. After passing through most picturesque regions, but little known to the ordinary traveller, the voyagers reached the main road and motored on *via* Dijon to Paris. Arrived in England the car was unshipped again and the return journey made to London. Here, after a night's rest, the untiring motorists set forth again, and after an easy run found themselves once more gliding up the avenue of Norton Park, Worcestershire, after an absence of some six weeks.

Doctors and Motor-Cars.

IN connection with the interesting question as to the advantages of motor-cars to members of the medical profession, we are glad to give the testimony of Dr. J. E. Thomas, of Bangor, who since September last has driven his car—an 8-h.p. Argyll—over 4,000 miles. The doctor writes:—"When one takes into consideration the rough and hilly roads we have in this district, and the car having been in constant daily use, and in all kinds of weather, throughout the winter months, whilst doing my professional work, without causing scarcely any trouble, I must admit that the car is a thoroughly reliable one. It has also effected a considerable saving in time and money to me as com-



A Young Motorist on Dr. Thomas' Argyll.

pared with a horse and carriage. I have found that with the hood and glass front I am quite independent of the wet and inclement weather. I had no experience of machinery previous to buying the car; I have had no trouble in attending to it myself, and a young lad only is kept to wash and clean it."

A Kentish Club.

AN automobile club is being formed for Kent, which will probably become affiliated to the A.C.G.B.I. The club will consist of a patron, to be elected for life; an honorary president, vice-presidents, treasurer, secretary, and other officers; of honorary members, who shall be elected by the Committee, and exempt from all fees and subscriptions, but who shall have no right to vote at any of the club meetings; of life members, who shall subscribe not less than ten times the annual subscription; of founder members, elected on or before June 30th, 1903; and of ordinary members. The affairs of the club will be managed by a committee, and the annual subscription will be one guinea, with half-a-guinea entrance fee; the founder members not to be liable for this latter fee. The following

have been chosen as the Provisional Committee:—Dr. Firth (Gravesend), Dr. Woodman (Rochester), Messrs. H. Cosh (Gravesend), Shrubsole (Gravesend), Booth Hearn (Rochester), Austen (Detling), Cornell (Tonbridge), Ball (Maidstone), Packham (Ramsgate), and Hallows (Ashford). It has been resolved that the Star Hotel, Maidstone, be the head-quarters of the club for the present. A number of the members of the newly-formed club proceeded in their motor-cars to College Road after the initial meeting, where they and their cars were photographed.

In a Racing Town.

THE splendid roads around Doncaster were much used by motorists at Whitsuntide, and the police seem to have acted with considerable toleration. Staying half an hour at Conisboro—a pretty village a decade ago, but now spoilt by colliery development—we saw a dozen cars pass through, and on the run back to Doncaster eight others came along. In the yard of the Angel Hotel a Lanchester and a 20-h.p. Wolseley were stabled on Tuesday, the latter revealing the presence in the town of a well-known Lincolnshire motorist. Among other visitors to Doncaster were several motorists from Lancashire centres, including the manager of the motor department of a Manchester firm that is attaining considerable distinction in the automobile world.

£2 a month.

SOME people have queer ideas as to business, and from a leading firm in the trade we have received a letter sent by a would-be motorist who wrote in reference to an advertisement of a voiturette. "Seeing your advertisement of a 4½-h.p. voiturette, £100, the very thing I want, but I have not got the ready money at present, having had some lawyer's expenses lately, over the death of my father, and he dying without a will, and I being the youngest son (35 years of age). I expect, perhaps, you will laugh at my terms, the only ones I can possibly make at present, and that is to pay £2 a month until car is paid for, and of course, interest at a fair percentage. Yours truly." We are glad to know that the automobile industry is not in such a bad way that such orders are regarded as acceptable.

The Alarm of the "Vets."

THE quarterly meeting of the Midland Counties Veterinary Medical Association has been held in Nottingham at the Black Boy Hotel, where motorists frequently congregate. At the meeting which followed, the President, Mr. F. H. Gibbings, delivered an address, in which he pointed out that there was a phase of modern scientific development which had a deep concern for their profession. They had already electric trams, which had done away with a large number of horses; but the competition with horses from which most was to be feared was that of motor-cars and mechanical traction. Motor-vehicles were only in their infancy. At present the signs of the times indicated that the manufacture of automobiles for purposes of business and pleasure would develop into a great industry. There could only be one result of this to the veterinary surgeon, and to all persons connected with horses, and that was a disastrous one.

A Coroner's View.

AT the conclusion of the evidence in an inquest recently held near Bishop Auckland, Coroner Proud said that in this case the motor-car had little or nothing to do with the accident, as, if the witness's account was true, the horses became restive long before the car approached them, and the witness, who was with deceased on the wagon, admitted that they had been troublesome before whilst passing a steam-roller. Some people had an idea that a motor-car had no right on the road, but he

thought the time had arrived when old-time prejudices should be put aside. Motor-cars had come to stay. They were the vehicles of the future, and so long as the motorist observed the rules of the road he had as much right on it as a carriage drawn by horses or a cycle propelled by man. They had to be reckoned with, and could not be driven from the road by narrow-minded prejudice, and the sooner drivers of horses came to that conclusion, the better. The reckless motorist deserved no quarter, and the driver of a horse who took his horse upon the road before he had become accustomed to the sights and sounds he would meet there was not the less blameworthy. The jury returned a verdict of "accidental death," and added to their verdict an expression of opinion that the driver of the motor-car was not in any way to blame.

Co-operative Garages.

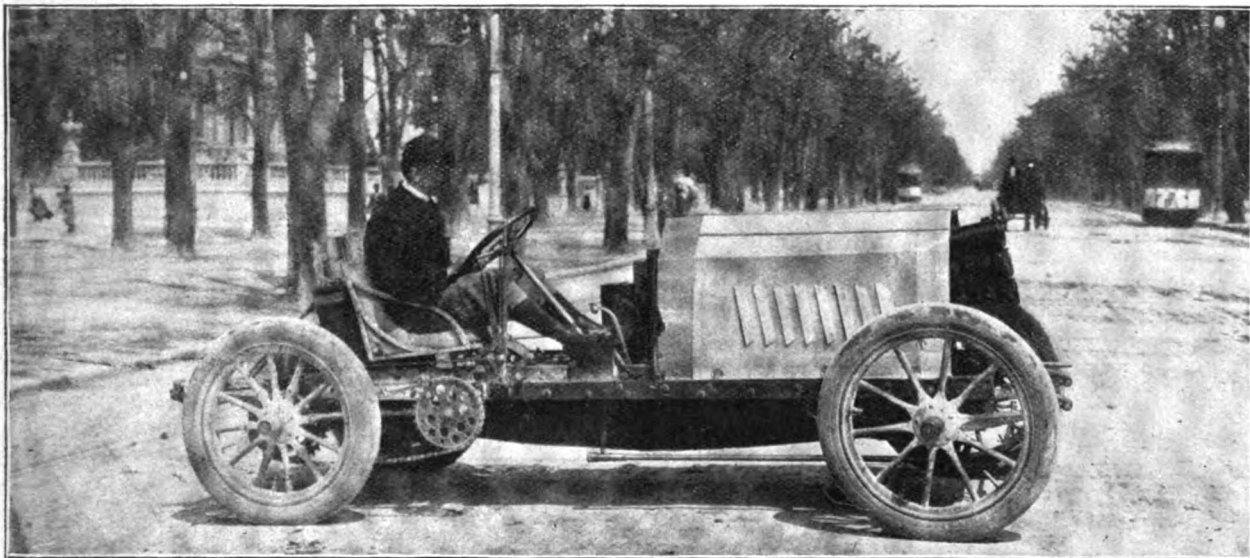
AN attempt is being made to form a co-operative venture in Washington, U.S.A., among the owners of motor-cars to provide for the care and storage of their vehicles. A certain charge is to be made each month for the service, and if any surplus accrues, it will be returned to the shareholders in the

Economical Motoring.

A PHASE of the problem alliteratively stated as motor-cars for men of moderate means appears in Major Matson's article in a recent "Badminton Magazine," who has come to the following conclusions. The car should have a single cylinder motor of $6\frac{1}{2}$ to 8-h.p., of the slow-running horizontal type. Solid tyres should be fitted. Transmission should be by belt, and the body should be of the tonneau type. These suggestions will probably cause a revival of the discussion begun by Captain Kenneth Campbell's paper late last year. We invite the views of our readers.

Ratepayers and Motor-Cars.

NOR often do we hear of ratepayers' associations concerning themselves with automobilism, and it speaks well for the progress which the movement is making in the metropolitan suburbs when motor-cars become a subject of serious debate in an association formed for the benefit of the ratepayers. The Eltham Association has just instructed its secretary to write to the proprietors of a public motor-car service, which has



The Paris-Madrid Race.—M. Rougier on his 45-h.p. Turcat-Mery Car, on which he finished ninth in the Heavy Car Class (time 6h. 16m.)

shape of dividends. It is hoped by this means to reduce the cost of stabling vehicles. There are many places in this country where a similar plan could be successfully carried through. It only needs a little careful selection of the original ten or a dozen members of the syndicate, a spirit of mutual helpfulness, and a wise selection of the scene of operations, to make the idea a success.

25 Miles per Hour.

MR. BAKER, the general manager of the London County Council Tramways, has hopes of an increased speed for the tramways under his jurisdiction. New cars are shortly to be provided capable of a speed of twenty miles an hour, and in the open parts of the Kennington, Greenwich, and Clapham roads he sees no reason why twelve or thirteen miles an hour could not be run with safety, and has told an interviewer of the twenty-five miles per hour allowed in New York. If tramways are thus to be allowed to move so rapidly, why not automobiles? In many provincial towns the speed of tramways is already greater than any motorist would care to attain in congested thoroughfares, and doubtless the regulation of the two classes of traffic will have to be considered in conjunction with each other.

been established between Eltham and Lewisham, asking them to consider the advisability of having a stated time for their first journey each day, and also as to the wisdom of inaugurating a service of motor-cars to Woolwich and other adjacent suburbs. There is no doubt that if motor-car services are to become a financial success, the promoters will have to issue time-tables and strictly adhere to them. This is being done at Hemel Hempstead and elsewhere, and should certainly be imitated by those responsible for the many public-service vehicles now running in and about the metropolitan area.

Speed Regulations in New York.

WHAT is known as the Bailey bill, providing for the regulation of motor traffic in New York State, came into force on the 15th ult. Every owner of a motor-car in the State must within thirty days from that date file with the Secretary of State, Albany, a statement giving his name and address, and a brief description of the vehicle, including the maker's name and the number of the car, a fee of one dollar being charged. Every person hereafter acquiring a motor-vehicle must make similar application within ten days from date of receiving same. Every person desiring to operate an automobile as mechanic, etc., must within thirty days file with the Secretary of State a statement

giving his name and address and description of vehicle he is able to operate. All the above classes will be duly registered and have issued to them a registration certificate which must be constantly carried when driving. The registration number for a car must be carried at the back of the vehicle in black numerals not less than three inches high, and stroke not less than one half inch on white ground. Certificates must be shown to police officers upon request. There is no speed restriction in the open country, but boards of supervisors of any township may fix the limit as they desire, but not below 20 miles per hour. Towns and cities may adopt ordinances fixing the speed limit for densely built districts at not less than eight miles an hour, and for sections in which buildings are more than 100 feet apart at not less than fifteen miles an hour. Speed must always be reduced to eight miles an hour (1) in passing pedestrians or domestic animals being driven on the highway in either direction; (2) in passing a public school during school hours; (3) within a distance of one-half mile of any post office, provided the local authorities erect at the limits of such districts, signboards with an arrow indicating the direction and the words "Slow down to eight miles"; speed must also be reduced to ten miles an hour in passing a church on the Sabbath during the usual hours of worship, and to four miles an hour in crossing a dam or causeway where the road is less than twenty feet wide.

New Scotch Works.

On Friday week the Albion Motor-Car Company, Limited, formally opened their new factory at Scotstoun, Glasgow, in the presence of a large number of guests, who were met at Scotstoun Station and conveyed to the works in motor-cars. There they were shown round the new premises, the plan of which was much admired. The rough material is brought in at one end, carried through the machine shop and produced at the other end in the form of completed cars. The pneumatic automatic hammer attracted much attention among the visitors, as also the numerous automatic tools. Mr. John Adam, chairman of the western section of the Scottish Automobile Club, formally declared the works open and wished the company every prosperity, which was acknowledged by Mr. T. Blackwood Murray, B.Sc. Further particulars of the works will be given in a later issue.

Sensational Stories.

It would appear that writers for the newspapers, as well as the correspondents admitted to the columns of the press, have been affected by the recent outburst of summer. Hardly a day passes when the motor-car fails to fill the placards, and scarcely a newspaper can be seen without some exaggerated view of the dangers that lurk in the car. Sensationalism may sell the evening journals, but such methods should not be imitated by the staid organs that seek to influence public opinion, and we would ask our journalistic confreres to realise their responsibility in the matter and consider whether they are not doing a grave injustice to an industry that has too long been regarded with prejudice.

Comparison of Fatalities.

FROM the report of the Commissioners of Police for 1901—no later official figures are available—light locomotives were responsible for one fatality in London in that year, whereas 186 persons were killed by vans, cabs, carts, private carriages, and tramcars in the same period. Such statistics demonstrate the hollowness of the charges made against automobiles as machines of destruction.

The Lincolnshire Club.

THE Lincolnshire Club is likely to have an interesting season, and monthly runs are being arranged. Invitations to the Club have been accepted from Captain Cole, Northolme Hall; Major Errington-Josse, Grimsby; Mr. G. Linnell, Market Deeping; Dr. Gilpin, Bourne; Dr. Hancock-Stoil, Colsterworth; and Sir Hickman Bacon, Bt., Thonock Hall, Gainsborough. A

special meeting of the Club has been held at Sleaford, under the presidency of Sir H. B. Bacon, when a suggestion that the committee should communicate with the whole of the provincial clubs, with a view to arranging a scheme of federation, was adopted.

The Reading Club.

THE third of a series of five monthly runs in connection with the Reading Club's Challenge Cup Competition for reliability, took place on Whit Monday to Savernake Forest, Wilts., and back, via the main Bath Road (64 miles). The weather and the road were perfect, and the run was keenly enjoyed by the participants. A picnic was arranged in connection with the run, and the members and their friends taking part enjoyed their luncheon beneath the shade of the stately oaks and beeches in the Forest. The homeward journey was reserved for the cool of the evening. Amongst those taking part in the run were:—Messrs. E. J. Wickens (20-h.p. Pipe), Dr. Claude Truman (9-h.p. Prunel), G. L. Brigham (Mabley), Dr. Major (Baby Renault), A. C. Brewerton (8-h.p. M.M.C.), Skurray (Accles-Turrell), C. H. Dodd (8-h.p. Renault), Phillips (Enfield motor-cycle), Albert E. Newion (De Dion tricycle and trailer), and Mr. A. H. East (8-h.p. Corré) with the club president (Dr. Walters) on board.

Why not the Catapult?

SIR RALPH PAYNE-GALLWEY, Bt., the gentleman who has kindly suggested the use of shot guns in connection with the Anti-Automobile Campaign, would be a capital commandant of the brigade. Not only is he the author of "Letters to Young Shooters," but he is a first-rate sportsman, and a good shot. But it appears somewhat strange, seeing how old-fashioned are his views with regard to motorists, that he did not advise the use of the catapult, upon which subject he is an acknowledged authority. Only a fortnight ago a volume of his was published on the Crossbow, with a Treatise on the Catapult of the Ancients. Sir Ralph Payne-Gallwey at the head of a band of bucolic youngsters armed with catapults, would be a valuable adjunct to Sergeant Jarrett's forces in Surrey.

LORD KINGSTON has become the owner of a Horbick motor-car.

A MOTOR-CAR service between Salisbury and Amesbury and the Camps will be started in a few weeks.

ON Monday the second meet of the Norfolk club was held at Sheringham. Between thirty and forty cars were present.

THE members of the Manchester Club paid a visit to Astle Hall, Chelford, the residence of Colonel Dixon, J.P., Chairman of the Cheshire County Council, on Saturday. About twenty cars and some seventy members and friends responded to Colonel Dixon's kind invitation. The weather was all that could be desired, and the excursion will long be remembered by all members who were fortunate to take part in it.

ON Wednesday at the South Western (London) Police Court, Edwin Nicholls, a motor-car driver, of South Kensington, was charged with being drunk during his employment and committing damage to a hansom cab. After hearing the evidence of Thomas Tildesley, an officer of the R.S.P.C.A., and a lady who said she narrowly escaped being run over, the magistrate said the prisoner ought to consider himself extremely fortunate that he was not standing in the dock on a charge of manslaughter. It was necessary, considering the fearful risks that the public were exposed to by the furious driving of motor-cars, that when a driver was found to be drunk he should be made an example of. He sentenced him to a month's imprisonment. Mr. George Bell, representing Mr. Hargreaves, the owner of the car, subsequently asked his worship to reconsider his decision, remarking by the way that the car cost £700; but the magistrate refused.

Automobile Demonstration at Hertford.



The Scene in the High Street at Hertford.

IN response to an invitation from Mr. C. Kenneth Murchison, the Mayor of Hertford, a number of motorists journeyed to the county town on the 28th ult. for the purpose of demonstrating the advantages of the motor over the horse. in a series of brake tests. These took place in the main street of the town, before a large and enthusiastic crowd of spectators. Proceedings commenced with a luncheon, over which the Mayor presided, and at which nearly one hundred guests sat down. After the usual loyal toasts, the chief constable of Herts, Col. Daniel, proposed the toast of "Automobilism," remarking that the motor had a great future before it. He thought the County Council was opposed to the retention of the speed limit, and suggested that only those vehicles should be numbered the drivers of which had been fined.

Mr. Scott Montagu, M.P., in replying, thanked His Worship for his hospitality, and stated that after all they must admit that they were a great nuisance on the main highways, especially in dusty weather.

In responding to the toast of his health, Mr. Murchison expressed his pleasure at the opportunity afforded him of welcoming the members of the Automobile Club, and hoped that the Hertford demonstration would be as useful to the industry as insensate motor racing was the reverse.

After luncheon several brake tests took place between horses and cars, the latter being naturally able to pull up the quicker. A ride round the town; more brake tests on a steep hill; and tests of skill at driving completed an enjoyable afternoon's sport. All the arrangements were in the capable hands of Mr. Basil Joy.

Amongst those present were Mr. Ernest Owers, 16-h.p. Napier; Capt. Deasy, 22-h.p. Rochet-Schneider; Mr. Forge Benz; Mr. Kenyon, 7-h.p. Panhard; Mr. W. J. Peall, 12-h.p. Daimler; Mr. Brown, on a Brown car; Mr. Wooldridge, Lancaster; Mr. Cordingley, 40-h.p. Mercedes; Mr. Weller, 14-h.p. Prunel; Mr. Blomfield, 9-h.p. New Orleans; Dr. Barnes, 9-h.p. Daimler; Mr. Fielder, 8-h.p. De Dion; Mr. Munn, 10-h.p. De Dion; Mr. Rockford, 10-h.p. Wolseley; Dr. Brittan, 7½-h.p. Wolseley; Capt. Kenneth Campbell, Lancaster; Mr. Beeton, 7-h.p. Panhard; Mr. J. M. Martin, 10-h.p. Wolseley; Mr. A. Stippy, Dennis; Mr. Gilbertson, steam car, etc. There were also present a number of other members of the Automobile Club, who came down on friends' cars or by train.

THE Edinburgh Motor Omnibus Syndicate, Limited, has started a service of omnibuses. The first route to be opened up is the important one from Preston Street to Haymarket Station, via the Bridges, the General Post Office, and Princes Street. The end to end fare is 2d., with intermediate 1d. stages. The omnibuses have been constructed at the Granton Harbour works of Stirlings' Motor Carriages (Limited).

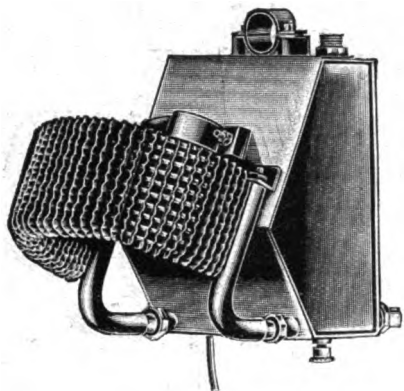
THE municipality of Hartford, Conn., was the first to adopt electric petrol wagons and ambulances, and the Chief of Police is authority for the statement that the cost to the Police Department for one year has been about 50 per cent. of that for maintaining horses during the last year they were used. He also says there were further benefits because of instant readiness for use and the higher average speed of the motor-vehicles.

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MOTOR-CYCLING NEWS.

A MEETING of motor-cyclists was held in Stuttgart on the 24th ult., when the formation of the Deutsche Motorradfahrer Vereinigung (German Motor-Cyclists' Union) was decided upon.

Now that water-cooled motor-bicycles are coming into use, special accessories in connection therewith are naturally making their appearance. Thus we are this week able to illustrate a combination water tank and radiator for use on



machines fitted with water-cooled engines, which has been put on the market by the Aachener Stahlwaarenfabrik, of Aix-la-Chapelle. As will be seen, the water tank is of such a form that it fits in the angle of the frame formed by the top bar, the head and the lower cross tube, being fixed by clips round the two first-named members. The radiator, which is connected to the tank by unions, is fitted in front of the head of the machine.

In connection with the Cambridge University Automobile Club, which has a membership of about fifty, a number of motor-cycle races were held on the Clarence Park track, St. Albans, a few days ago, motor-cycles only competing. For the ten miles scratch race there were five competitors, Mr. Lascelles winning in 19 min. 23 sec. Mr. Moore-Brabazon won the flying mile scratch race in 1 min. 31 sec. A five miles' handicap was won by Mr. Hart Davis.

THE Catford Cycling Club's seventeenth annual hill-climb will be held this year on July 4th, at Westerham Hill, Kent. The proximity of the date to the Gordon Bennett Cup race is somewhat unfortunate, but it will give an excellent opportunity for private owners of "pet" motors to score in a big event. The contest will be divided into two classes: Class I., machines up to and including 114 lbs. weight; and Class II., up to and including 170 lbs. weight; allowance being made for petrol and oil. Last year's event was keenly contested, and enquiries so far this year give promise of a record entry.

THE motor-cycle section of the Austrian Touring Club held a race meeting on the Prater track in Vienna on the 21st ult. The 100 kilometre race was won by Herr Wondrich on a $2\frac{1}{2}$ h.p. Laurin-Klement, covering the distance in 1 hour 27 min. 21 $\frac{1}{2}$ sec. This rider also headed the list in the flying kilometre event, his time being 50 sec. The winner of the 10 kilometre event was Herr S. Eckerl on a $2\frac{1}{2}$ -h.p. Puch (time 9 min. 18 sec.).

THE first motor-cycle road race in Australia is to be held on the 22nd August next. The route is from Warrnambool to Melbourne, a distance of 165 miles.

A COMMITTEE meeting of the Ulster Centre Irish Motor-Cycle Union was held at Belfast last week, when a vote of condolence with the relatives of the late Mr. Nixon, killed in the Paris-Madrid race, was passed. Out of respect to his memory the amalgamated run between the Dublin and Ulster Centres, arranged to take place on Saturday last at Rostrevor, was postponed to the 20th inst. The committee recommend that no

motor-cycle races be held in future on the Ulster, Celtic, or Balmoral tracks, and expressed the opinion that the only suitable places in Ulster for such events are the Glentoran new track and the Ballymena cement track.

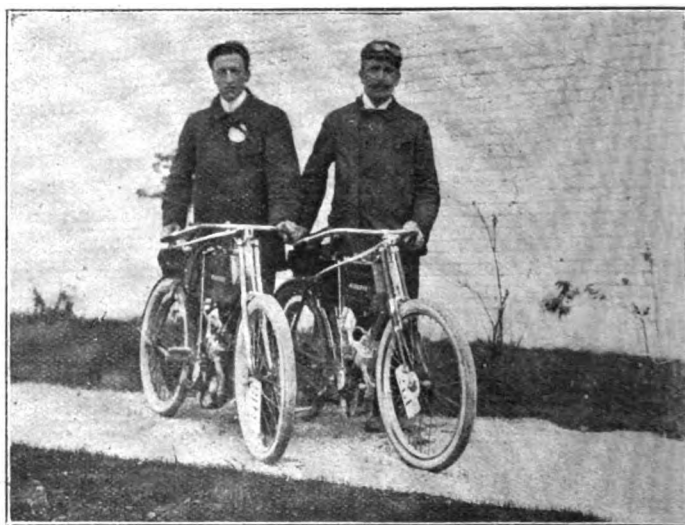
OF the fifty motor-bicycles which started for Bordeaux in the Paris-Madrid race the following fifteen arrived:—

No.	Name.	Machine.	Time.		
			h.	m.	s.
1.	Bucquet ...	Werner ...	8	55	1
2.	Demester ...	Griffon ...	9	30	44
3.	Jollivet ...	Griffon ...	9	25	54
4.	Cissac ...	Peugeot ...	9	39	36
5.	Lanfranchi ...	Peugeot ...	9	40	40
6.	Derny ...	Clement ...	10	23	23
7.	Griet ...	Griffon ...	10	43	46
8.	Momo ...	Peugeot ...	11	3	20
9.	Maillart ...	Werner ...	11	9	18
10.	Prost ...	Doze ...	11	42	53
11.	Arnot ...	Werner ...	12	5	20
12.	Martel ...	Griffon ...	13	11	2
13.	Barret ...	Bruneau ...	13	59	
14.	Coudere ...	Peugeot ...	15	41	16
15.	Preudhomme ...	Denis ...	20	8	

It will be seen that the fifteen machines comprise three Werners, four Griffons, four Peugeots, one Clement, one Doze, one Bruneau, and one Denis.

At Carmarthen, on Monday, Bert Yates won a five-mile motor cycle scratch race in 7 min. 28 4-5th sec., T. Tessier being second. G. Hitchcock won a ten-mile handicap at St. Albans on the same day, on a New Hudson machine. The Whit-Monday motor-cycling events on the Putney track were somewhat of a fiasco. F. W. Chase and C. F. Barden were to have ridden a series of matches, but the Auto Cycle Club had declined to permit the race. Instead, Mlle. Jeanne Merveaux gave a couple of exhibition rides, a flying two miles being ridden in 3 mins. 4-5 secs. The performance was not regarded favourably. A track record was claimed for a mile ridden in 1 min. 20 secs. by M. Longdon.

J. F. CRUNDALL was the victor of the motor-cycle races on the Canning Town track on Monday. With 10sec. start he was first on his Humber in the five miles handicap; S. C. Hill (25sec.) being second, and H. J. Trow (3min. 40sec.) third. Time, 9min.



Messrs. Flamand and Elskamp and their $2\frac{1}{2}$ -h.p. Minerva Motor-bicycles.—The winners of the Motor-Cycle Section of the recent Circuit National Belge.

44sec. In a three miles match, Crundall beat H. A. Collier by 100 yards. Time, 3min. 54 2-5sec. Crundall also attacked the motor mile record, but failed, his time being 1min. 22sec.

MR. J. VAN HOODYDONK has just supplied a Phoenix motor-bicycle to Mr. H. C. A. Goodall, the Superintendent of Government Telegraphs at Agra.

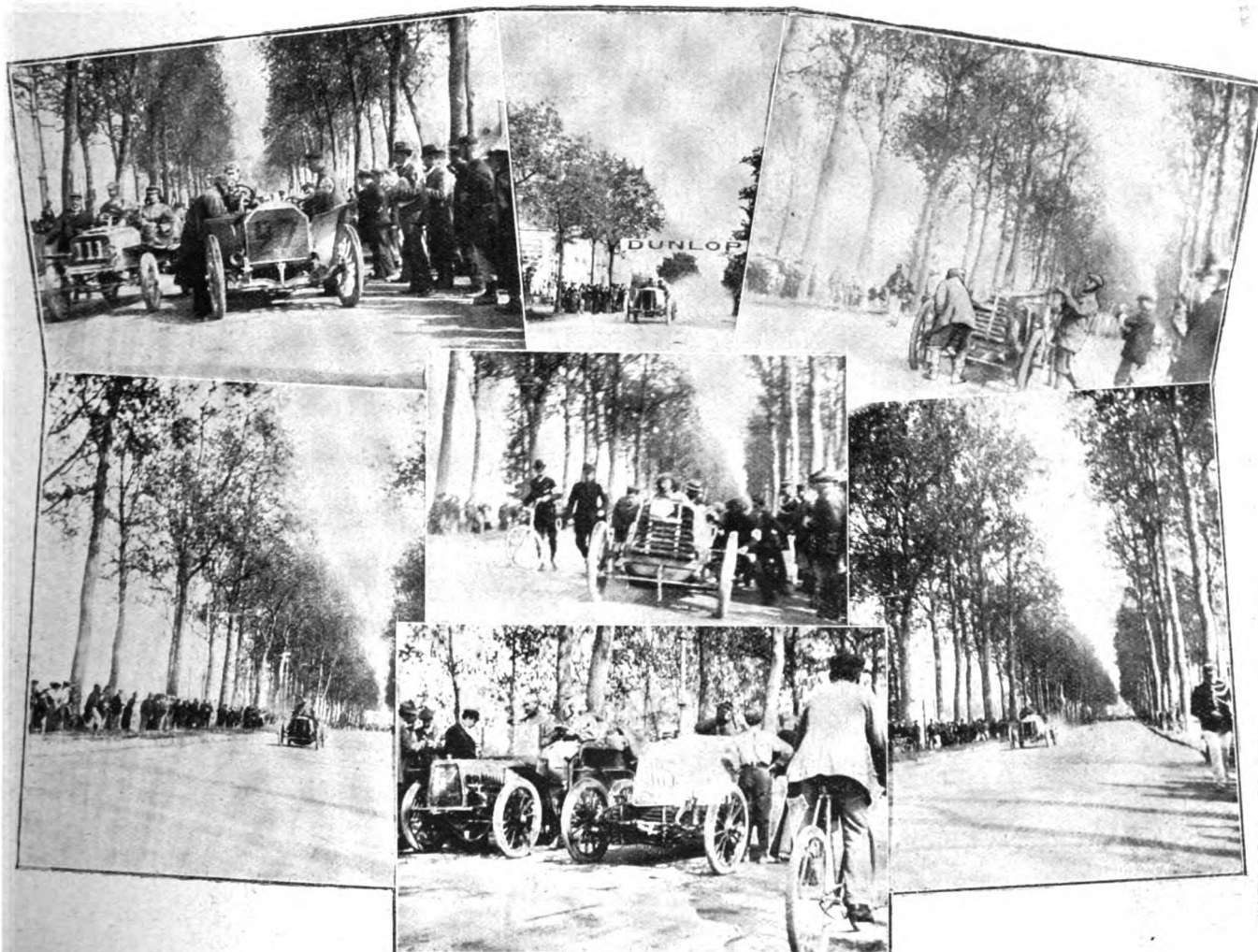
CONTINENTAL NOTES.

"BY AUTOMAN."

BY the time these lines appear in print, Marcel Renault will have been in his grave almost a week. As everyone knows by this time, he never regained consciousness after his accident at Couhe-Verac, but lingered on for some days and then passed away, surrounded by his family. The accident which resulted in his death was caused in the following manner. For some little time he had been pressing Thery and seeking for an opportunity to pass him; they were just approaching a bad turn in the road, which was being taken care of by a flagman, whose duty it was to warn the arriving cars of the same. Thery saw the danger signal and also the curve, and slowed down, whilst

The car, stopped in its headlong course, turned over and round, mowing down a tree on its way.

Of all those connected with automobilism in France, perhaps the Renault brothers have been the most universally liked. They came into the automobile industry in a peculiar manner. Their real business is in cotton cloth. But in the early days of the motor industry they amused themselves by making a little car with a 3½-h.p. motor. This vehicle was so successful that they were induced to purchase De Dion motors, and make a series of little cars. The Paris-Bordeaux race in 1901 brought the Renaults a great deal into evidence. Everyone remarked how regularly their little cars ran. If I remember right, they all came in together at Bordeaux. In every race they went in for, they seemed to do better and better, until the climax of their



Burns de Caters on Mercedes Car and Pellisson on De Dion Car.

Guders on Pipe Car (No. 24).

Jarrott on De Dietrich Car.
A Friendly Push-off.
Augieres on Mors Car (No. 185).

Rougier on Turcat-Mery Car preparing to re-start.

Mouton on De Dietrich Car.

PARIS-MADRID RACE—SNAPSHOTS AT TOURS.

Marcel Renault saw nothing but Thery's dust, and not knowing the reason of his slowing down took the opportunity to pass him. Taking a wide sweep in order to avoid colliding with Thery, he came on the bend in the road before he was prepared for it, and ran on to the grass at the side of the road, where trees were planted at intervals, and where trenches had recently been cut around the trees in order to be able to water them. Not being aware of the trenches, Marcel Renault did not stop, but only let up the accelerator and slowed down slightly, as he saw no danger in running with two wheels on the grass. His front wheel, however, got into a trench and dashed into the opposite side, which was made at a sharp angle. The shock at the terrific speed he was going at burst the tyre at the point of impact and smashed the wheel.

success came when Marcel Renault surprised the whole world by winning the Paris-Vienna race last year, beating all the big cars.

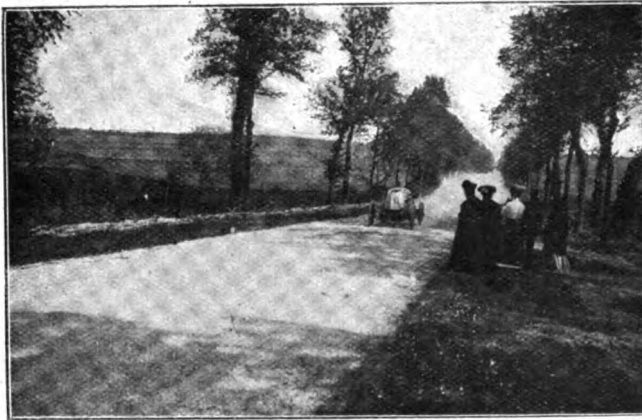
THE Renault brothers are quite young men, and a most united family. Marcel was only 31 years of age, tall and slight, with a sandy beard, and with a retiring, modest manner, which made him sympathetic to everybody. His funeral took place on Saturday last in Paris, and at the service, which was held at the Church of St. Augustin at 11 o'clock, everyone belonging to the automobile world in France was either present or represented. It was a demonstration worthy of a victim in the cause of progress, cut off just at the time when he was beginning to reap the full benefit of his courage, intelligence,

and perseverance. It must be a great consolation to his family that he has not died in vain, and that the automobile industry of the future will carry the indelible mark of his life and labour.

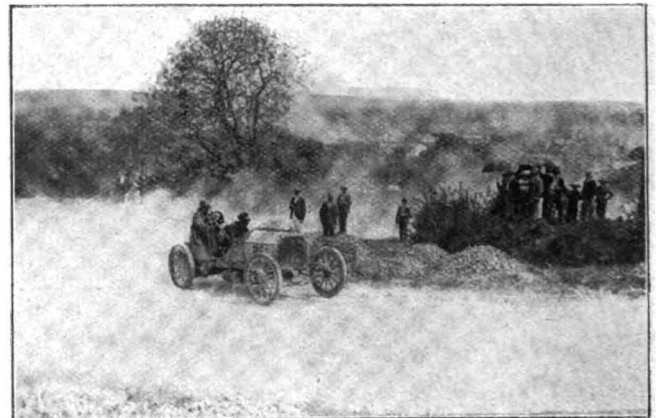
◆ ◆ ◆
TOURAND, the driver of the car which was the subject of the accident at Angouleme, where the mechanic Normand met with his death, has returned to Paris and is quite better. This accident occurred through the faulty organisation of that part of the road and the reckless imprudence of the spectators. It seems that at the point in question no one was keeping the road. A child was playing in the middle of it, and the spectators around were laughing at its antics, when Tourand came along at

bits. The mechanic was killed, and Mr. Loraine-Barrow seriously injured. The fourth and last fatal accident occurred to the Wolseley car of Mr. Porter, and was also caused by faulty organisation, or, to speak more correctly, by the failure to do his duty of the person who had been detailed to look after the dangerous curve leading to a level crossing at Bonneval. Mr. Porter saw the level crossing too late, and in trying to stop, ran into the wall of the house belonging to the crossing keeper, and his car turned over, pinning the mechanic Nixon beneath it.

◆ ◆ ◆
I HAVE given a succinct account of the fatal accidents, and they total up, unfortunately, to six deaths, divided as follows:—1 driver, 3 mechanics, and 2 spectators. The causes of the



Gabriel on a Mors Car in Full Flight.

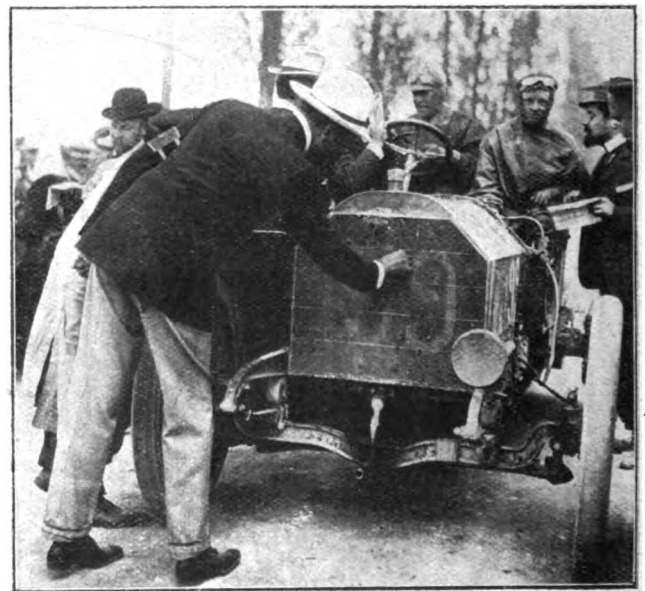


Jenatzy on 90-h.p. Mercedes Climbing the Hill amidst clouds of dust

THE PARIS-MADRID RACE—SNAPSHOTS AT PETIGNAC, 70 MILES FROM BORDEAUX.



Baras on a Darracq, using alcohol as fuel, does the journey in 6hr. 12m. 49sec.



Warden on a 90-h.p. Mercedes, fifth in Heavy Car Class, his time being 5hr. 56m. 30sec. Insects are being extracted from the Honeycomb Radiator.

THE PARIS-MADRID RACE—THE ARRIVALS AT BORDEAUX.

a high rate of speed. Seeing the child, Tourand swerved and put down on brakes in order to avoid it, with the result that the car was thrown off the road and into the spectators, of whom two were killed and one dangerously wounded. The mechanic of the car was also killed.

◆ ◆ ◆
THE accident to Loraine-Barrow occurred just after he had left Libourne. It was caused by a dog, which rushed out in front of the car. The axle of the vehicle is very low, and the steering bar, which joins the wheels together, is in front of the axle. The dog, after being struck by the car, jammed the steering gear, and the vehicle plunged into a tree and was smashed literally into

accidents may be summed up as follows:—1 caused by a dog, 1 caused by the spectators, 2 caused by insufficient marking of the turnings, and 2 by neglect of the observers. It is, of course, very easy to talk after the event and say what should have been done, and there is no doubt whatever that, if proper precautions had been taken, nearly all the accidents could have been prevented. For instance, if the turning at Couhe-Verac had been treated with tar, Marcel Renault would have seen it, for it would not have been hidden in the dust of Thery. Notices should have been put up before the race, that all dogs must be kept on the chain, subject to severe penalty. Had this been carried out, Loraine-Barrow

would not have been lying in the critical state he is, and his mechanician would still be alive. The accident to Tourand would not have occurred had stricter measures been enforced to keep spectators back. But all of this theorising after the event is of little use, and the question that presents itself, is: What influence will this disastrous race have on the trade? The readers of the *Journal* will have judged from time to time by these notes that I have steadily advocated road racing, and now that things are becoming re-established to their just proportions, and the thrilling headlines and ridiculous exaggerations of the halfpenny papers have become a thing of the past, the time has come to reason matters out calmly. Without road-racing, the automobile industry of to-day could barely be said to exist. Year after year we have been told that the racers were monsters unsuitable for anything except a mad rush from start to finish of the race, with just enough strength to carry the distance and then fall to pieces or be sent back by train as a useless mass. Year by year I have combated this absurd theory, and shown that the racing car of to-day is the touring car of to-morrow, and I have no hesitation in affirming that this has proved to be absolutely true. Almost every improvement in motor-cars which has become classic has been brought to the fore by its powers of resistance or by its undoubted advantages in comparison with other cars in the only real possible test, that is, an end-to-end race. I think it is hardly necessary for me to enter into details on this subject, but I might point out what an enormous progress has been made in tyres, all on this account; how the stamped steel frame originated by the Cannstatt-Daimler Company has become classic and has replaced armoured wood. These two illustrations will suffice; but I could go over the present touring car piece by piece, and find the same to be true in nine cases out of ten. If it were not for road-racing we should be still where we were five or six years ago, with the 12-h.p. engine, and a car weighing 30 cwt. or more, dangerous in the extreme, unmanageable down-hill, and subject to the great danger of running back on inclines; whereas to-day we can have a good, substantial touring car weighing under a ton, with anything between 20 and 40-h.p. available.

THAT road-racing proper is as dead as Queen Anne is patent to everybody, that is to say, at least, on the scale of the late Paris-Madrid race, but if it be not replaced by racing on a long track the motor industry will stay practically where it is now, or make but very slow progress. The one incentive to skill in choosing the correct materials and in placing them in economical and suitable positions, and getting out of them the greatest possible result, will be gone, unless those at the head of the automobile movement bestir themselves and organize large autodromes where racing can be carried out under proper conditions and under guarantees against the imprudence of the public.

WITH regard to the victims of Paris-Madrid there remains little more to be said, except that progress always claims its victims, and, sad as it may be, it is the inevitable history. It should not for one instant cause us to deviate from our work of popularising and consolidating the self-propelled vehicle. I was talking the other day to a railway official on the subject, and he was telling me of the press campaign and the vapourings and the attempts to stop the movement in favour of railways, when in 1845, or thereabouts, the terrible accident of Versailles took place, which resulted in a holocaust of 150 victims. The campaign against the holding of the Gordon Bennett race will at any rate receive no echo on this side of the Channel, where it is looked forward to with the same enthusiasm as it was a fortnight ago.

A DISGRACEFUL incident occurred in connection with the Paris-Madrid race, in which two Englishmen, whose real names it would be interesting to know, took part. They were driving in a yellow car near Chartres, when they came upon a child in the middle of the road. They put on the brakes and stopped the car in time to miss the child. The passers-by, as is frequently the case, shouted after them and threatened them with proceedings. So far there is nothing to be said; but two witnesses of the event,

the Count Edgar de la Briquardiere and M. Victor Brazon, volunteered to give evidence in favour of the two Englishmen, and drew up a document, which they signed themselves, and in which they stated the facts of the case. The Englishmen, to whom these Frenchmen were rendering such a gentlemanly service, gave the false and ridiculous names of "Doctors Probe-Bladder" and "Funny Yeoman," and the document appears in the "Auto," which has printed it in all good faith. It would be interesting to know the real identity of these two English "gentlemen."

HIS HIGHNESS the Grand Duke Michael Alexandrovitch has become the honorary president of the Automobile Club of Russia. Founded a year ago, the Club has already a garage and repair shop in St. Petersburg entirely reserved for the use of members.

IN the French Senate, on Friday last week, M. Le Provost de Launay asked M. Combes to take fresh measures to prevent accidents caused by motor-cars. He declared that the existing regulations were not and could not be observed. M. Combes replied that a commission of experts would be appointed to examine the question, and he would be guided by its advice in proposing further legislation.

UNDER the patronage of the Crown Prince of Sweden, another automobile club has just been formed in Sweden. There are now two clubs in the country—Gothenburg and Stockholm.

THE Dutch Automobile Club is organising a tour of Holland to be held this summer, terminating with an automobile fete at Apeldoorn.

THE Automobile Club of Namur-Luxembourg, is organising a race meeting for the 17th and 18th inst. On the first day there will be a series of flying kilometre races on the Namur-Huy road between Gires and Ban, while on the 18th inst. there will be a hill-climbing competition at Huy over a kilometre course having an average gradient of $8\frac{1}{2}$ per cent.

AN automobile meeting is to be held at Munich from the 4th to the 8th of July. On the first day the motorists will be received by Prince Ludwig Ferdinand of Bavaria; on the 5th there will be a run to the Nymphenburg Castle; on the 6th a run to Starnberg; on the 7th one to the Taubenberg, and on the 8th, one to the Bavarian highlands.

MANY Austrian automobilists having complained lately of the inconvenience they are put to while driving in the country by the antics of dogs, a notification has been issued calling upon dog-owners to do all in their power to prevent accidents, and threatening them with punishment if they refuse to look after their dogs. Even if a dog runs after a motor-car, its owner is liable to be prosecuted. The police are authorised to inform all dog owners of the risk they run by disregarding the order.

CONSTERNATION reigns among Leipzig motorists owing to the issuing by the Leipzig municipal authorities of a regulation prohibiting automobiles from using any public roads in the neighbourhood of the city. At a meeting of the Leipzig Automobile Club it has been decided to appeal to the Courts against this prohibition. The meeting claimed that it is not right to make many suffer for the faults of a few scorchers who have been the cause of the prohibition. It is urged that such measures must impede the development of the automobile industry in Germany, and that as the military authorities of every civilised State have adopted the automobile, the time may come when Germany will be placed at a disadvantage through having at her disposal less perfect machines than those possessed by other countries.

IN consequence of the unfortunate result of the Paris-Madrid race, the question as to whether the Circuit des Ardennes shall be held is under consideration. The Baron P. de Crawhez has suggested that it be postponed to the end of July and that not more than forty cars be allowed to compete. He also recommends that the course, which is over sixty miles in length, should be roped off and closely guarded. No decision has, as yet, been arrived at by the A.C.B.

THE IRISH FORTNIGHT.

THE Countess of Dudley, wife of the Lord Lieutenant of Ireland, left Rockingham, co. Roscommon, on Monday for a tour in Connemara. Her Excellency and party travelled by motor-car to Castlereagh, where a special train was waiting to convey them to Westport. The motor-car tour was then resumed through Connemara to Recess, where they remained for the night.

MANY events will be crowded into the earlier portion of the Irish Fortnight, and there is just a fear that this is being rather overdone. Certainly it is to be hoped that nothing more will be arranged in the way of trials than has already been approved by the A.C.G.B.I. The great race will be run on Thursday, July 2nd; on the Friday a motor-cycle gymkhana with three events will be held in the Phoenix Park, Dublin, where speed trials will take place on the following day, the entries being divided into three classes for machines up to and including 70 lbs., 114 lbs. and 170 lbs. respectively. The four-mile time test and hill climb will

hurry to return if they are fleeced unmercifully. Thus one object of the projected motoring fortnight, the opening up of Ireland to touring automobilists, would be defeated. On this point Mr. Mecredy has sent us an interesting letter, which was published in our Correspondence columns last week, and at a meeting of the hotel proprietors of the South of Ireland a resolution of protest against the reports that have been circulated in the English Press that the hotel charges will be excessive during the period of the automobile race for the Gordon Bennett Cup has been adopted. The Tourists' Information Bureau, of 6, Westland Row, Dublin, is acting as agent for many motorists visiting Ireland in connection with hotels and apartments.

THE City of Dublin Steam Packet Company are conveying motor-cars from Liverpool to Dublin for 35s. at owner's risk up to 50 cwt. Forty cars can be carried in any of their steamers, and in the new steamer "Kilkenny" they will be able to carry about sixty. It will be well for those who propose to forward cars to Dublin to advise their Liverpool agent, Captain Bell, as

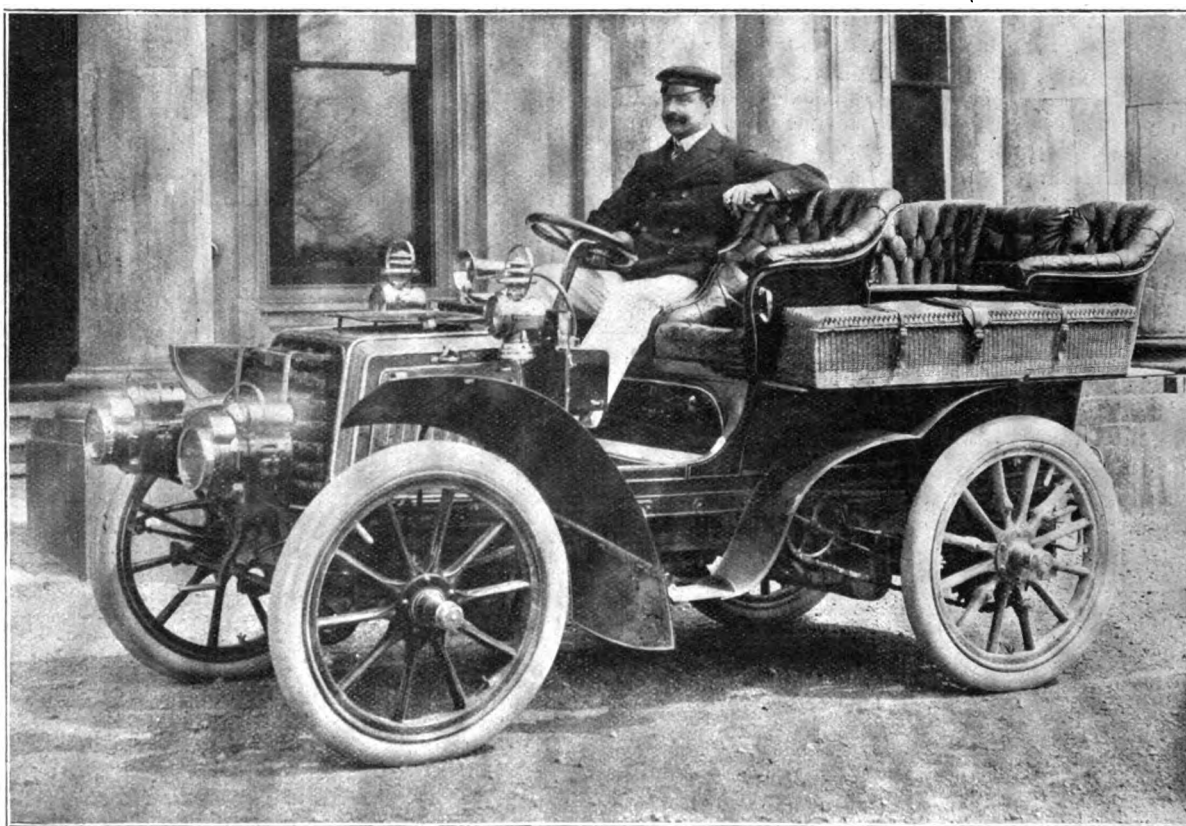


Photo by)

The Earl of Dudley, Lord Lieutenant of Ireland, on his Panhard Car.

(Lafayette, Dublin.

take place on the Clough-Castlewellan road, Co. Down, on July 7th, and the County Council has unanimously agreed to the closing of the road from public traffic on that date.

MR. J. E. HUTTON has issued a large scale map of the Gordon Bennett Race Course, together with a key map of the surrounding country, which will doubtless be of value to motorists visiting Ireland. It is published at 1s., and is issued in a very convenient form.

IRISH hotelkeepers are apparently expecting to reap a rich harvest from the great race, and are evidently convinced that automobilists are overburdened with wealth. Prices of accommodation have risen fast, and the "Daily Telegraph" points out, unless the hotelkeepers and others concerned exercise a little caution they may overreach themselves. For, greatly as all motorists and many other persons will desire to witness the contest, they will not be inclined to pay exorbitantly for the privilege; while those who visit the Emerald Isle will be in no

early as possible. The Lancashire and Yorkshire, Great Northern, Midland, and Great Central Railway Companies book passengers to Dublin by the City of Dublin Company's steamers via Liverpool. On the boats used in connection with the company's mail service between Holyhead and Kingstown no cargo is carried, and they will therefore be unable to take any motor-cars.

THE last American mail brings the news that Mr. C. J. Wridgway will accompany Mr. L. P. Mooers to Ireland as alternative driver of the Peerless car, which forms one of the American team for the Gordon Bennett race. Mr. Wridgway, who is well known in this country, will leave New York with Mr. Mooers on the 10th inst.

MESSRS. ALEXANDER WINTON AND PERCY OWEN, who will drive Winton cars in the Cup race, sailed from New York in the "Campania" on Saturday last.

MEMBERS of the Royal Irish Constabulary are learning how to ride motor-cycles, and it is reported that they will use these machines when accompanying the Lord Lieutenant on his motor-car rides through Ireland. Probably, too, they may find plenty of activity during the Irish Fortnight.

AFTER the great race and the festivities at Dublin a few days in the north will be followed by a return to the capital and the beginning of a great exodus to the South on the morning of Thursday, July 9th. From Dublin to Cork the distance is 156 miles, and the official suggestion is that whilst some may go direct to that town others will proceed *via* Waterford (97 miles), sleeping there on the Thursday night and arriving at Cork (76 miles from Waterford) on the Friday in time for the afternoon



Photo by] Lismore Castle. [Keohan, Dungarvan.

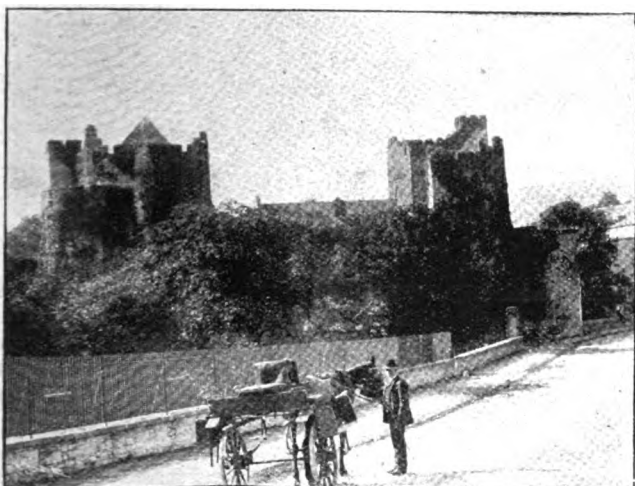


Photo by] Cahir Castle. [Holborn Clonmel

arrangements. Others will spend the night at Lismore. The latter place was a famous town in the twelfth century, and its castle dates from those early days. In his "Beauty Spots in the South-East of Ireland" Mr. C. P. Redmond, to whose delightful pages we are indebted for the accompanying illustrations, says the first bicycle seen in Ireland was made and ridden by a Lismore whitesmith in 1886. From Dungarvan there is a good flat road to Lismore, and over the town and valley the castle looms large on the landscape.

THOSE who journey from Dublin to Cork will go *via* Maryborough, Cashel, with its lonely rock and ruins, and then, forty-nine miles from their destination, will arrive at Cahir. The roads in the district are better than the average of Irish roads. Beyond Cahir the road rises somewhat and will be found decidedly uneven in many places. The district is a beautiful one

and well cultivated, the castle on the river Suir being a striking feature of the local scenery. The district is of importance to salmon fishers.

THOSE who stay at Waterford will probably take a run out to The Sweep, making a detour to see one of the most picturesque passes in the South of Ireland. Then by way of Fenor a view of the fine ruin of Don Isle, or Dunhill, is obtained. The castle is raised about a lofty rock, standing isolated from the roadway and seemingly invulnerable from attacks of mediæval marauders, who were as plentiful as blackthorns in these parts.

A WORD as to Waterford itself. This is a town of historic interest, commercial importance, and pleasant surroundings. As

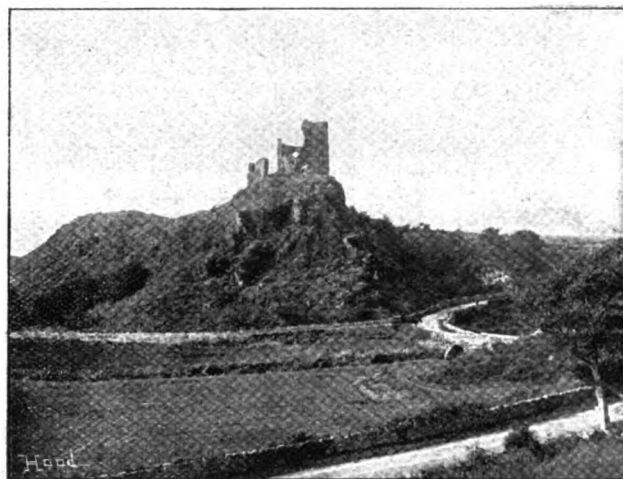


Photo by] Dunhill Castle. [Goodman, Waterford.

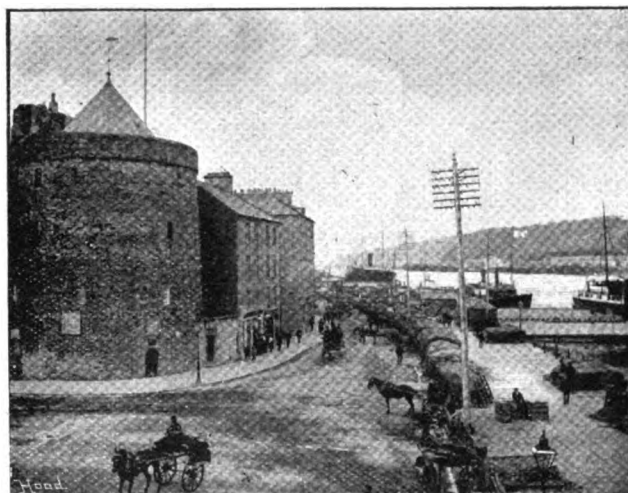
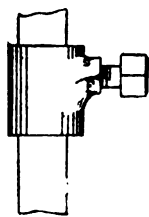


Photo by] Reginald's Tower and Quay, Waterford. [Pools, Waterford.

the scene of Earl Roberts' boyhood it will be of interest to many, while the antiquarian will revel in its streets and along the quay. Here Reginald's Tower is preserved as a reminder of Reginald MacIvor, whose exploits in the eleventh century were no able in their way. Successively it has been a fortress, a prison, a mint, an armoury, and a police station. Now it seems to have retired from active service and has advanced to the position of an object of interest.

WHETHER the direct route to Cork is taken or a detour is made via Waterford, the beauty spots of the South-east of Ireland will bring new pleasures to many motorists from the Sister Isle and from distant lands, who will find in the excellent Guide of Mr. C. P. Redmond, of Waterford, the proverbial "philosopher and friend"—a literary companion well recommended.

SOME USEFUL NOTES.



NOVICES and careless motorists frequently apply wrenches and spanners with so much power to an adjusting screw that the part into which the screw goes is cracked, as shown in the accompanying sketch. Dirt and gummed matter may work into the crack and fill it, so that the defect will not be observed. The chances are that the mechanical action due to the vibration of the vehicle is making the weak place dangerous by expanding the crack, which may ultimately break through to the shaft. If, on inspection, defects of this sort are found, new parts should at once be substituted.

IF motorists will make it a rule, when starting out on a trip or ride, to "know" and not only to "think" that their petrol tanks are full, many a long walk will be prevented.

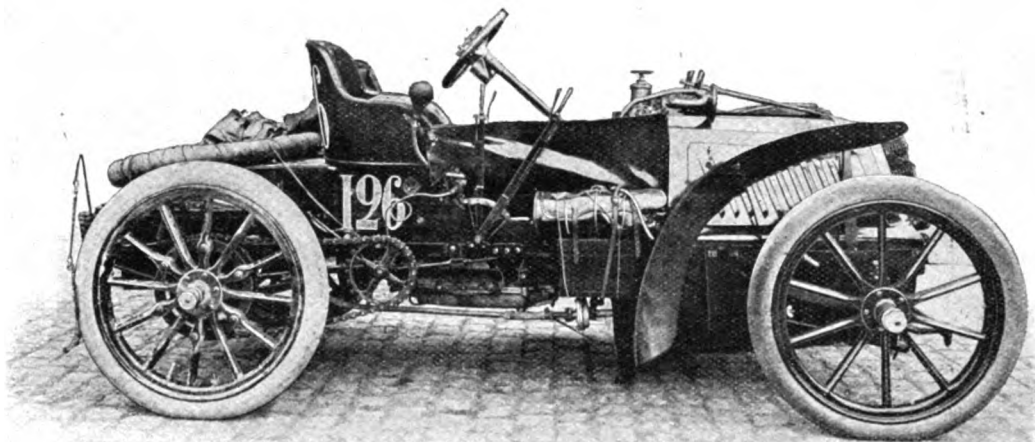
GREAT care should be taken of the spare inner tubes it is advisable to carry when out on a long run, and they should be so stowed in the car as not to be damaged in any way. It is really astonishing the careless way many motorists carry their spare tubes. They are often stowed in the tool boxes or lockers without sufficient, and usually, in fact, without any protective

night. When plenty of water and a hose are available, all that is necessary is to play water on the car, as is usual with a carriage, sponge down to dry and afterwards polish with chamois leather. On no account should the car be rubbed with a dry cloth, as little particles of grit and dust will quickly spoil and scratch the paint.

FULLERS' earth or lime make a very good brake dressing, as it dries up any oil and gives a good grip. It is not advisable to use resin, as this makes the brake too fierce at first and quickly wears off, leaving a hard polished surface which does not grip so well as the Fullers' earth dressing.

WHEN driving over greasy or slippery roads, use the brakes as little as possible. If they are applied suddenly the car is likely to skid and turn round. The best thing to do when skidding commences is to disengage the clutch, slow down the engine, and manipulate the steering-wheel until the car is going straight, then accelerate engine, and let the clutch in very gently.

BOTH the inlet and exhaust valves require grinding in occasionally. Of course, the frequency of the operation depends on the amount of care that has been taken in running the car. If too much lubricating oil and a mixture of too great strength has been used, the valves and seatings will deteriorate very rapidly,



The Paris-Madrid Race.—The 24-h.p. Pipe Racer.—The Car was driven by M. Van de Poel, which reached Bordeaux in 28 h. 124 min. 6 sec., being 27th in the Heavy Car Section.

covering whatever, and there exposed to influences most destructive to rubber. Subjected to friction from tools and other articles when the vehicle is in motion the rubber rapidly deteriorates, this deterioration being assisted and hastened by the presence and contact of oil or greasy articles. The tubes should be kept in a suitable box or a strong rubber cloth bag, the interior of which is well treated with powdered talc, the latter acting as a lubricant, any slight friction which may take place between the inside of the box or bag and the tube has no bad effect. Thus protected, an air tube may be kept folded up for a long period without losing anything of its durability or elasticity.

THE novice motorist will be well advised to "hurry slowly": in other words, he should not be too anxious to get on to his top gear. He should become well accustomed to the first speed before attempting to put in the second, and become familiar with that before attempting to drive on the top gear. There is more in this than is perhaps apparent, but it must be obvious that much finer steering is required when travelling at say twenty miles per hour than at five, and one can only learn to properly and confidently steer a car running swiftly by thoroughly learning first of all how to handle the car when travelling slowly.

To maintain the appearance of a car it is necessary to clean it every time it has been used before putting it away for the

pits and depressions forming in them. To grind in the exhaust valve run a little olive oil round the face of the valve and seating, and put on a little emery flour. Before putting on the emery, the cylinder port should be carefully plugged with some rag so that no emery can get into the cylinder and score its walls. Work the valve to and fro on its seat with a screw-driver, raising it occasionally and letting it drop back on to its seat. When all the depressions and irregularities have disappeared, the emery and oil should be carefully wiped and washed away, and the valve ground for a few minutes with oil only. To grind in the induction valve, the operation is the same except that this valve can be worked in the hands or placed in a vice.

AT a meeting of domestic servants in Hyde Park on Sunday the chairman said he, as a coachman, objected to having to clean motor-cars.

OUT of fifty-one starters in the tourist section of the Paris-Madrid race, forty-seven reached the Spanish capital within the specified time.

PHENIX MOTORS, LIMITED, is the title of a company registered with a capital of £10,000 to manufacture and generally deal in and with automobiles, and to adopt an agreement with Messrs. J. Van Hooydonk and A. F. Ilsley. The first directors are Messrs. J. Fraser, R. Ibbotson, J. Van Hooydonk, and A. F. Ilsley.

HERE AND THERE.

ANOTHER motor-omnibus is now on trial at Eastbourne.

SR. JULIO A. ROCA, President of the Argentine Republic, has, we learn, acquired an Oldsmobile.

MOTOR CYCLES have just made their first appearance at the Bath and West of England Agricultural Show.

THE Doherty Motor Accessories Company, Coventry, have opened a department for the manufacture of bucket, phaeton, and other seats.

MOTOR-VEHICLES are now admitted to the carriage enclosure on the Goodwood racecourse on the same terms as ordinary carriages.

AMONG the victims of police watchfulness in a recent list of alleged furious driving cases was Mr. J. Drysdale Sanders, the High Sheriff of Lincolnshire.

A SOMERSET county magistrate has been fined 10s. and costs at Bristol for causing an obstruction with his brougham in Cattle Market Road, at Bristol.

A USEFUL guide to the Metropolitan Railway Extension in Middlesex, Hertfordshire and Buckinghamshire has been issued by Mr. A. C. Ellis, the general manager.

FROM the A. L. Dyke Automobile Supply Company, of St. Louis, U.S.A., comes a 200 page catalogue of motors and motor accessories, in which everything required for petrol and steam cars will be found.

MESSRS. WEBSTER AND BENNETT, engineers, Coventry, report that the demand for machine tools for the British motor industry is developing, although the major part of their output still goes to France and Belgium.

THE Durkopp Motoren Gesellschaft, Limited, has been registered with a capital of £100, to carry on the business of manufacturers, vendors, and factors of, and agents for, motor-carriages, etc. Mr. R. Asch is the first director, and the registered office is at 3, The Exchange, Muswell Hill, N.

At the Waterford Petty Sessions Mr. C. P. Redmond was the complainant in a civil summons to recover from the Waterford Bridge Commissioners £5 for having exacted from him 4d. for a bicycle, the charge not being authorised by law. After a lengthy hearing the case was dismissed. An appeal will probably be taken against the decision.

SOME trials took place a few days ago in the neighbourhood of Andover, in the presence of a number of officers from the War Office, with the object of testing the "Little Giant" steam motor of Messrs. W. Tasker and Sons, for Army transport purposes. The task set the "Little Giant" was to haul a load of 5 tons a distance of 20 miles, which, we understand, it performed in a most satisfactory manner.

THE Governor of New York State has signed the Bailey Automobile Bill, which contains regulations in regard to motor-cars which put them on a level with ordinary street vehicles with regard to speed. They must reduce their speed to eight miles an hour when passing a pedestrian or a horse-drawn vehicle, which means that this speed will be the limit, as, naturally, pedestrians or vehicles must be constantly met.

At the last meeting of the Liverpool Chamber of Commerce a letter was received from the London Chamber asking whether the Chamber would be willing to ask the Association of Chambers of Commerce not to move further at present in the matter of the resolution recommending the raising of the tare limit of motor-vehicles, which was carried at the recent spring meeting of the association. The Liverpool committee, however, considered that the question of increasing the tare limit for motors should be kept separate from other questions, and a letter to that effect was sent to the London Chamber and the Association of Chambers.

A MOTOR-CAR is to be ordered for the use of the officers of the Wiltshire County Council.

R.A.C.E. is the short title by which the recently-formed Royal Automobile Club of Spain is known.

MORE than £700 worth of cars were sold at the May auction sale of the Speedwell Motor Co., at Reading.

ACCORDING to the Board of Trade Labour Department, employment is good in the motor-car industries of the Midlands.

THE Lanchester Engine Co., Ltd., had an exhibit at the Bath and West and Southern Counties Agricultural Society's Show at Bristol.

A MEMORIAL has been prepared setting forth the claims of the West Limerick district for a motor-car service under the new transit scheme.

WE hear that the Gas Lighting Improvement Co., of 18, Devonshire Street, Bishopsgate, E.C., have introduced a new petroleum spirit.

MESSRS. J. PHILLIP AND SONS, 37, Wilton Place, S.W., have accommodation for the storage of cars, either temporarily or by the week or month, etc.



The Tourist Section of Paris-Madrid. Madame Lockert on the 12-h.p. Ador Car in the Auvergne Mountains.

THE exports of automobiles and parts from the United States during the month of March were valued at £18,722, compared with £17,670 in the same month last year.

A RESOLUTION has been adopted by the Holderness Agricultural Club in favour of the retention of the speed limit and the imprisonment of motorists charged a second time with furious driving.

SPECIAL articles on the Gordon Bennett race have appeared in most of the Irish newspapers, one of the most notable having been published in the Cork Exhibition issue of the Dublin "Weekly Independent."

CAPTAIN WOODS, D.S.O., has acquired a 15-h.p. Panhard car from the British Automobile Commercial Syndicate, Limited. The body has been fitted by J. Rothschild et Fils, Limited, of London and Paris, and is of the Roi d'Espagne double phaeton type.

THE new 400 gallon motor steam fire engine built for the Portsmouth Town Council by Messrs. Merryweather and Sons has been tested before the Mayor and Council. The engine turned out from the fire station in 55 seconds from the alarm travelled at a high speed along the road, and gave a display with one, two, and four jets.

THE Chief Constable of Hull has given the local police instructions to keep a watchful eye on motorists.

THE Right Honourable Sir J. H. Macdonald (Lord Kingsburgh) has been appointed Honorary Colonel of the Motor Volunteer Corps.

At a bazaar held at Theydon Bois, Epping Forest, the patrons were taken for short rides into the Forest on the Premier's motor-car at 1s. per head.

CANTERBURY, Brighton, Worthing, Eastbourne, Folkestone, and Basingstoke are towns to be visited by the competitors in the Auto-Cycle Club's Reliability Trials in August.

MESSRS. ALFRED DUNHILL, LIMITED, have just introduced the specially designed straw cap for summer motoring illustrated herewith. So far as it has yet been supplied it has met with



unqualified approval. In addition to the cap illustrated Messrs. Dunhill can supply one with a patent peak. They have also similar caps, both in white and burnt straw, plain and pleated, for ladies.

MR. KER-SEYMER and Lieut. Trippel have been doing duty for the Motor Volunteer Corps for the General Officer commanding the Home District. The Inspector-General of Fortifications has also employed the services of a member of the Corps for his inspection of Hounslow and Windsor.

THE members of the Halifax Automobile Club, following their very successful excursion to Southport at Easter, promoted a trip to Scarborough for Whitsuntide. A start was made on Whit Sunday morning from the Plummet Line Hotel, Halifax, the Post Office Square at Leeds being the first stop. Then the journey was continued to York, where lunch was served, the subsequent route being via Malton. At Scarborough the party stayed at the Grand Hotel.

THE 10-h.p. Argyll car which was driven from Glasgow to London in the Scottish Automobile Club's Competition was fitted with a thermo-syphon cooling bonnet. When the car reached London, the driver, Mr. Whitehead, found that the bonnet would not take another pint of water. The efficiency of the thermo-syphon depends on slow circulation. That is to say, the greater number of tubes put into the bonnet the slower the circulation becomes, and hence more efficient. As soon as there is a difference in the temperature the circulation starts, and the whole design is based on the assumption that a difference of temperature will always be maintained between the top and the bottom of the bonnet. This is controlled by the size of the waterways top and bottom.

A MOTOR fire engine has been purchased for the new Haringay fire station of the Tattenham District Council.

THE Basingstoke Town Council is erecting a number of caution boards for the benefit of motorists passing through the town.

A HERTFORD motor-cyclist has been fined £5 for not stopping when requested to do so by the driver of a horse-drawn carriage.

MR. A. E. MAJOR, of Reading, has been appointed agent for Darracq cars in Berkshire, Buckinghamshire, Hampshire, and Oxfordshire.

SOME members of the Cardiff Health Committee have been making an inspection of motor-vans for the town scavenging department.

A PUBLIC motor-car service is about to be started between Como and Chiasso, Italy. The vehicles selected are 24-h.p. De-Dietrichs.

THE South Tipperary County Council has resolved to co-operate with Lord Iveagh and Mr. Pirrie in establishing motor-car transit routes in the county.

NEW regulations in Denmark fix the maximum speed of automobiles at nineteen miles per hour on open country roads, and nine miles in towns and villages.

MR. W. THOMPSON has established a well-equipped garage at the Central Cycle Works, Castle Northwich. He has every facility for repair work, and keeps a stock of petrol, etc.

At the annual conference of the Rural District Councils Association, held at Bristol, a resolution was carried urging that the present speed limit of motor-carriages should not be unduly increased.

MESSRS. ANDREW MELVILLE AND SONS have opened a repair depot with inspection pit at 114 and 116, High Street, Dunbar. They are also keeping a large stock of petrol, spare parts, oils and greases, etc.

HENLEY-ON-THAMES Corporation have unanimously resolved to send a petition to the Prime Minister, urging that the speed of motor-cars when passing through any town shall be limited to not more than eight miles an hour.

THE King took a trip on his new petrol motor launch on Monday afternoon on the Thames, and had a cordial welcome from the thousands who were on the river. The launch is 33ft long, and has accommodation for ten persons.

THE Mulliner Motor Body Company, of Church, Accrington, have sent us a photograph of a new double artillery wheel they are introducing. It is in the form of two light artillery wheels, as regards the hub, the spokes converging on one felloe; it is designed to resist the strain of a side slip or twist going round corners, for, instead of the spokes taking this strain like an ordinary artillery wheel, at right angles, it is taken by a direct downthrust of the spokes. The Mulliner Company inform us that they can make the new wheel as light, if not lighter, than an ordinary one, and they claim that it is three times as strong; it is easily adapted to any axle, and the cost is not great.

THE "Figures, Facts, and Formulæ of Photography" is a practical little work issued by Messrs. Dawbarn and Ward, Ltd., and edited by Mr. H. Snowden Ward. So many motorists are amateur photographers that reference to this practical guide will be widely welcomed by our readers. Within 200 pages we have here much concise information with regard to the lens, exposure, developing, and printing; while the instructions as to lantern slides will be useful to those who are asked to give lectures to various societies on the automobile, and who are anxious to make them doubly interesting by the introduction of pictures. Directions are given to facilitate the use of any kinds of plates or films, and we commend the volume as one of the best of its kind.

CORRESPONDENCE.

A CAR FOR DOCTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to Mr. Villiers Lucas and W. W. L.'s letters in last week's issue of the *Journal*, I venture to refer them to the Albion Motor Car Company, Limited, for the car that meets with their wishes. It is the most suitable I know of for a doctor. (1) It is not absolutely silent—no petrol motor is—but it is as silent as any now on the market. (2) Seating for two or four. (3) Chain and live axle drive. Is easy to drive and manage, and is geared to 14 or more miles per hour. It is strongly built and made to last for a dozen years, anyway, taking 4,000 miles a year out of it. The tyres are solid rubber and cost 3d. per mile, petrol-fuel 3d. per mile. Repairs per year for 4,000 miles, £15.

The engine is fitted underneath the seat, though the firm make cars with the vertical motor in front. It can be started from the seat by a rope starter.

I know many doctors who are using this type of car in their work, and they all speak highly of them. There are no batteries or accumulators. The ignition is magneto, with generator for making current. It is simple and not liable to get out of order.—Yours truly,

"AULD HAND."

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Do you not think the time has now come when an International Committee should meet and settle rules that would make racing of much greater interest than it is at present, make it open to many more than it is nowadays, and at the same time improve the efficiency of motor-cars in every direction? Broadly speaking, my suggestion is that the gross cubic capacity of the cylinders should be settled with a maximum limit, and that the weight of the cars should not be less than a certain amount. The effect of this would be that everybody would build their cars up to the biggest cylinder capacity, and by various arrangements of stroke and bore a highly-efficient engine would probably be evolved.

By setting out that a car should not weigh less than a certain amount the weights could not be cut down to a dangerous extent, and then the only way one could improve a car would be by friction-reducing devices, more efficient gears, more efficient tyres, and improvements in a hundred and one small points which all go to make up a perfect motor-carriage. If everyone was mounted on a vehicle which did a maximum speed of thirty-five or forty miles an hour, it would be just as interesting, in fact racing would be more interesting, as the personal element would come in to a large extent, and also the condition in which the car was kept.

I think if the whole matter was thoroughly well ventilated by an International Committee, and that if this took place immediately before or after the Gordon Bennett Race, when representatives of all countries would be present, a highly-satisfactory result could be achieved and an interesting sport preserved. It is, of course, necessary to settle this very quickly, so that the models that would be suitable to come under new racing rules can be put in hand at once.—Yours truly,

S. F. EDGE.

QUERIES RE PEUGEOT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I read in your issue of the 16th ult. that Mr. A. Winter is troubled with knocking in the engine of his 8-h.p. Peugeot car when thrown into top speed gear. Perhaps the following explanation may prove interesting and useful to him. The knocking is probably caused by Mr. Winter having his ignition too far advanced when changing from second to top speed. What happens is this: he is probably running on second with ignition fully advanced; in changing to top gear the change is not made quickly enough, consequently the car loses a certain amount of impetus, and when the top is in the engine cannot pick up sufficiently quickly to correspond with the position of the ignition, hence the knocking or pounding. To avoid such a thing, which is very bad for the engine, Mr. Winter should retard his ignition a little directly the top gear is in, and then as the engine picks up gradually advance his ignition again. As an owner of an 8-h.p. Peugeot, I have found that the engine does not run anything like her best when using the heavier petrol; it is quite possible this might be Mr. Winter's trouble. I have never driven a more reliable or nicer car than this Peugeot.—Yours truly,

M. F. MIEVILLE.

HIGH-SPEED TREMBLER COILS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Dr. McClymont's letter, I may say that I have a 34-h.p. De Dion voiturette, fitted with a wipe contact and a trembler coil with a Charpentier trembler, which I obtained from Van Raden, of Coventry. I consider that the engine power is increased, and do not think that the engine is "slowed" in the slightest. The engine generally starts at the first turn, and misfires (except those from a wrong mixture) are practically unknown.—Yours faithfully,

R. SUTTON CLIFFORD, JUNR.

THE SPEED LIMIT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a sequel to the Paris-Madrid scandal, we have now a revival of the agitation against the abolition of the speed limit. This is one of the many annoyances for which the ordinary motorist has to thank that pest of the roads—the high-powered car. Here is a sample of the stuff now influencing public opinion for the worse. I quote from a leader of an important provincial paper, the "Western Daily Mercury":—"The sad events in France will inevitably exercise a great influence over the Bill which Mr. Walter Long is to introduce into Parliament," and it declares forthwith against the projected removal of the speed limit. "The French motor race has shown us the danger in time." This semi-hysterical style of writing (now to be seen in all quarters) must do our cause great mischief. What a fine opportunity for the reactionary party! And why does this party get the chance of doing mischief? Why are we to incur increased risks of being numbered, placarded and policed? Simply because a handful of big car owners want to break records on roads which are not suitable for the speeds attained.

It appears to me that it is high time for the ordinary car owner and motor-cyclist to enter their protests against automobile racing of any sort being held on public roads. The upshot is a general growth of the belief that automobiles are all piloted by Jehus. Commercially speaking, the racing automobile may be a good advertisement for some particular firm which caters for big car owners. But, after all, the big high-powered car is very unwelcome on most roads, and, as usually driven, a general menace. What the public wants is tests (e.g. "non-stop touring" trials) which go to improve the ordinary automobile as used for business or pleasure. It may not be feasible to limit the horse-power of the automobiles allowed on highways, but one is apt to regret that the racing car ever appears there, its place being a private track or motor-way. We motorists of the ordinary and far more important class know very well how much of the hatred of us is due to the abuses of big car driving on the high road. And we know also that this racing craze only serves to make our position in the eyes of the public worse.—Yours truly,

E. DOUGLAS FAWCETT.

INFORMATION WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If Mr. Lucas, who asks for advice about a car, succeeds in getting one to suit him, it will be interesting to hear after, say, a year's use of it, his candid opinion on his own letter. I venture to say that he will be heartily ashamed of it.

It is curious how speed, the fascination of which is yielded to by the driver of every type of vehicle, from the coster in his donkey-barrow to the millionaire in his Mercedes, is always denounced, generally in somewhat discourteous language, by those who have obviously had no experience of its exhilarating effects, and who generally imply that vehicles are never used except for the purpose of "admiring the country"—blessed phrase!

Does Mr. Lucas never have to drive hurriedly to catch a train, or to keep an appointment; and does he always take a slow train to town in order the better to admire the country? The fact is that by far the greater number of vehicles—cars included—on the road are there, not for the purpose of admiring the country, but of getting from one place to another, and the quicker they can do this the better for everyone.

I quite admit that, if there is a time for speed, there is also a time for going slowly, and I wish to point out that the pleasure of a slow and quiet drive, in which many, myself included, wish to indulge on occasion, is quite spoilt by the noisiness of the petrol car at low speeds—a noisiness which not only often induces a driver to use, for the sake of quietness and smoothness of motion, a higher speed than he would otherwise employ, but undoubtedly creates a prejudice in the minds of the rest of the public against these vehicles.

On this point "steamers" have a great advantage, and I cannot but think that makers would find it worth while to try and remedy this defect. For instance, wheels with skew teeth (of course, with proper ball thrusts) might be used in the change speed and valve gear; or a spring drive, by keeping the teeth steadily in contact, would probably be an advantage.

I should like, while writing, to draw attention to what seems to me want of tact on the part of the advocates of automobilism. They talk much of the "sport" and "the industry"; which enables their opponents to reply that the sport is a rich man's monopoly, and is a nuisance that should be suppressed, and that the country would not be much the worse for the stoppage of a new industry which provides the nuisance. It would be far better to lay less stress upon the sport, and more upon the large and increasing number of moderate-sized cars that are used by their owners precisely as they would use an ordinary horse drawn vehicle. And it might be well to try to convince the public that a ten-horse car is practically only equivalent for all-round work to a carriage and pair.—Yours truly,

FABER.

MESSRS. JOHN CHILD MEREDITH, LIMITED, write:—"Now that so many motorists are interested in the wipe contact, particularly in converting their De Dion motors, we think it as well that it should be mentioned that it is necessary to have a vibrating coil if a wipe contact is used. We more particularly mention this as during the last few weeks we have been having a great deal of unnecessary correspondence, owing to the fact that many motorists do not understand this point, being under the impression that if they fit the wipe contact they can still use their present non-trembler coil."

THE GLASGOW TO LONDON NON-STOP TRIAL.

THE Committee of the Scottish Automobile Club (Western Section), having carefully considered the observers' reports on the various vehicles entered for the Glasgow to London Non-Stop Trial, 13th and 14th May, have approved and adopted the following tabulated report. Certificates will be issued in respect of the vehicles which completed the entire distance, with exception of No. 25, in accordance with the results shown, in due course. The total possible marks in each case is 1,000.

CARS.													
No.	Entrant.	Description.	B.h.p.	Approximate Weight		No. of Marks Deducted for Stops.		No. of Marks Gained.	Particulars of Stops and Remarks.				
				Unladen.	Cwts.	For Tyre Troubles.	For other Causes.						
1.	Weston Motor Syndicate	14-h.p. Chenard-Walcker	17	..	17½	..	—	..	999	..	Driving stop.		
2.	Miss Dorothy E. Levitt ..	Gladiator	12	..	15½	..	4	..	994	..	Puncture, 20 mins. Battery run down, replaced by spare, 1½ mins.		
3.	Chas. Jarrott	24-h.p. De Dietrich ..	30	..	19½	..	—	..	10	..	990	..	Petrol not reaching carburettor, 7 mins.; do., 2 mins. Engine stopped momentarily when enquiring route.
4.	Lanchester Engine Co. ..	10-h.p. Lanchester ..	*10	..	19	..	—	..	—	..	—	..	Broke reverse gear, and withdrew between Skipton and Leeds—previously non-stop.
5.	Lanchester Engine Co. ..	10-h.p. Lanchester ..	*10	..	19	..	—	..	—	..	1000	..	Non-stop.
6.	Rennie and Prosser, Ltd.	10-h.p. Wolseley ..	10	..	19	..	—	..	4	..	996	..	Ignition, 4 mins.
7.	Wm. H. Kingsbury ..	Darracq	24	..	20	..	—	..	—	..	—	..	Did not start.
8.	John Marston Ltd. ..	4-cylinder Sunbeam ..	10-12	..	16	..	—	..	—	..	1000	..	Non-stop.
9.	John Marston, Ltd. ..	4-cylinder Sunbeam ..	10-12	..	16	..	—	..	—	..	1000	..	Non-stop.
10.	Hozier Engineering Co. ..	Argyll	10	..	13	..	3	..	3	..	994	..	Puncture, 15 mins. Delay in re-starting engine at Leeds, 3 mins.
11.	Middleton and Townsend	6-seated British Serpollet	†12	..	32	..	—	..	6	..	994	..	Delay in re-starting at Leeds—time occupied getting up steam.
12.	J. R. Richardson and Co.	Tonneau	14	..	14	..	—	..	—	..	—	..	Did not start.
13.	Frank F. Wellington, Ltd.	Brooke	14	..	20	..	—	..	—	..	—	..	Stopped for broken speed lever fork, 45 min., and for 2½ hours to replace pump, and was withdrawn at Kendal.
14.	Henry B. Hemmons ..	Argyll	9	..	12	..	—	..	—	..	—	..	Was delayed at start, and abandoned trial. Ran unofficially to Leeds.
15.	Captain H. H. P. Deasy	Rochet-Schneider ..	22	..	20	..	—	..	1	..	999	..	Driving stop, 1 min.
16.	Delahaye Chief Depot ..	Delahaye	12	..	16	..	—	..	—	..	—	..	Did not start.
17.	Mann and Overton's, Ltd.	12-h.p. Georges Richard	13	..	13	..	11	..	—	..	989	..	Punctures, 20 mins., 12 mins., and 12 mins. Pumping tyre, 2 mins.
18.	Mann and Overton's, Ltd.	24-h.p. Georges Richard	26	..	16½	..	—	..	192	..	808	..	Petrol tin found to contain water was by mistake emptied into petrol tank, and caused delay of 3 hours 12 mins.
19.	Mo-Car Syndicate, Ltd. ..	Arrol-Johnston Dogcart	12	..	22	..	—	..	—	..	1000	..	Non-stop.
20.	J. W. Stocks	De Dion-Bouton ..	10	..	15	..	—	..	3	..	997	..	Filling tank, 2 mins. Replacing plug, 1 min.
21.	Mo-Car Syndicate, Ltd. ..	6-seated Arrol-Johnston Car	12	..	23½	..	—	..	—	..	1000	..	Non-stop.
22.	Thomas Shaw	10-h.p. Wolseley ..	11	..	18½	..	—	..	—	..	1000	..	Non-stop.
23.	Hozier Engineering Co. ..	12-h.p. Argyll	16	..	17	..	—	..	—	..	1000	..	Non-stop.
24.	Glasgow Motor Co. ..	Peugeot, 2-seated ..	6½	..	6½	..	6	..	9	..	985	..	Ignition, 3 mins., 2 mins., 3 mins., and 1 min. Punctures, 15 mins. and 15 mins. Replaced trembler.
25.	Farman Automobile Co.	F.A.C. Tonneau ..	24	..	20	..	—	..	—	..	—	..	Disqualified for non-compliance with regulations.

MOTOR-BICYCLES.

										lbs.						
1.	Triumph Cycle Co., Ltd.	..	..	..	..	2½	..	120	..	—	..	—	..	—	..	Abandoned trial before reaching Leeds. No records received from driver.
2.	Triumph Cycle Co., Ltd.	..	..	..	..	2½	..	120	..	—	..	—	..	—	..	Abandoned trial at Kirkby Lonsdale. No records received from driver.
3.	Quadrant Cycle Co., Ltd.	..	..	..	..	2½	..	130	..	—	..	5	..	995	..	Time occupied filling tanks at Leeds, 5 mins. Otherwise non-stop.
4.	Weller Bros., Ltd.	..	..	..	..	2½	..	120	..	—	..	—	..	—	..	Did not start.
5.	Weller Bros., Ltd.	..	..	..	..	2½	..	120	..	—	..	—	..	—	..	Did not start.
6.	Ariel Cycle Co., Ltd.	..	..	..	..	2	..	120	..	—	..	—	..	—	..	Trial abandoned at Shap. Cause as reported by entrant, "Bad petrol." Afterward tested, and found 625 density.
7.	Brown Bros., Ltd.	..	..	..	..	2½	..	124	..	—	..	40	..	951	..	Filled tank twice. Stopped to lubricate. To replace belt three times. Pushed up Shap and hill near Kirkby Lonsdale. Stops to adjust trembler and change accumulator.
8.	Humber, Ltd.	..	..	..	..	2½	..	156	..	—	..	12	..	988	..	Stops for filling petrol twice and to fasten plug.
9.	Humber, Ltd.	..	..	..	..	2½	..	156	..	—	..	20	..	980	..	Stops for filling petrol, cleaning out carburettor, and for loose terminal.

* At normal revolutions—viz., 720.

† Nominal.

NOTE.—It is believed that no motor-cycle came through without pedalling, but no marks are deducted in that respect.

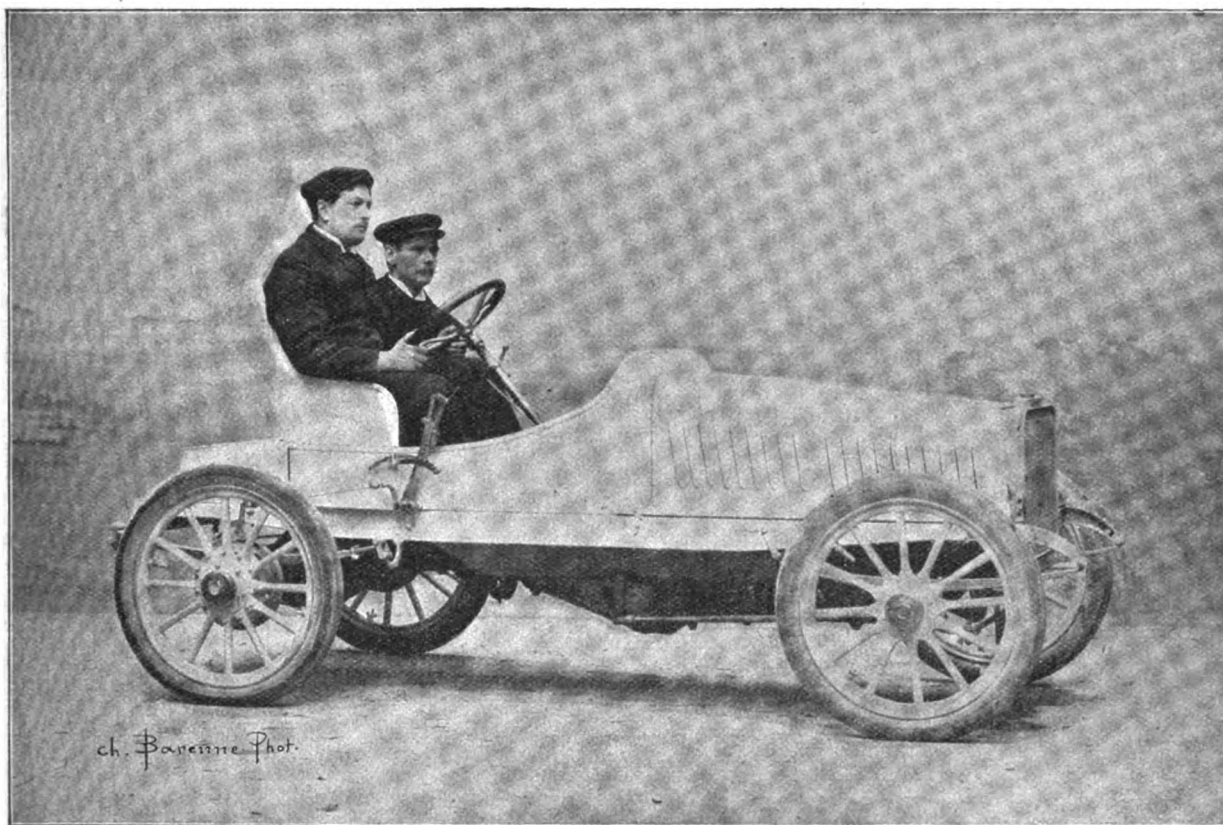
A DRIVER SENT TO PRISON.

At the Clerkenwell Sessions, before Mr. W. R. McConnell, K.C., Alban Gentilli, 18, mechanic, of French nationality, surrendered to his bail on a charge of having, whilst in charge of a motor-car, caused bodily harm to William Smith, a valet, by furious driving and wilful misconduct. On the morning of March 17th the prosecutor and a friend were riding on bicycles in Hyde Park. They proceeded at a moderate pace from Stanhope Gate to Apsley Gate, at Hyde Park Corner. As Smith, who was leading, was about to leave, the accused was alleged to have suddenly swerved his motor-car on to the off-side. It was said that he sounded no horn or alarm, and, running at a great speed into Smith's bicycle, caused the prosecutor to be shot up into the air. He turned one or more somersaults, and alighted on his head on the granite crossing. Gentilli continued to drive on, in spite of shouts of spectators, but constable 579A, recognising him as working at "Automobilia (Limited)," in Oxford Street, W., went there and arrested him. Smith, in an unconscious condition, was conveyed to the St. George's Hospital, where he was found to be suffering from a scalp wound, concussion of the brain, and shock. He was bruised about the body, shoulder, and limbs, and was detained in the hospital for nearly a month, and now remembered nothing of the affair. The jury, in convicting Gentilli, commented on the youth of the accused, and censured "Automobilia (Limited)" for allowing him to have charge of heavy, powerful cars in London streets. A previous

riding recklessly, and that he nearly ran Worthington down. A number of witnesses were called, and the case was eventually dismissed.

ALLEGED REFUSAL TO STOP.

At the Albrighton Petty Sessions, at Shrewsbury, Percy Martin, manager of the Daimler Car Works, Coventry, was summoned for refusing to stop a motor-car when requested to do so. He was represented by Mr. J. C. H. Bowdler. Mr. T. S. Minton, farmer, Montford, hon. secretary to the Shropshire Association for Protection Against Dangerous and Reckless Motor-car Driving, stated that while driving in a pony trap towards Shrewsbury, on the 9th inst., he saw a motor-car coming along towards him at a speed of about twenty miles an hour. When a distance of about fifty yards divided them he called out to the defendant to stop, and held up his hand, in consequence of his pony growing restless at the sight of the car. Defendant, however, took no notice whatever of these warnings, and came right up to the trap without slackening his speed. The defendant denied that Mr. Minton held up his hand at all, at any rate in such a way that he could see it. Mr. Minton, as a matter of fact, was on his wrong side of the road, and the vehicle came in contact with the car, which was actually at a standstill at the time, through the pony swerving across the road. The



The Paris-Madrid Race.—The 20-h.p. Decauville which finished third in the Light Car Class, doing the journey to Bordeaux in 6h. 19m. 8sec.

offence for furious driving a motor-car having been proved, Gentilli was sentenced to three months' imprisonment in the second division.

CLAIM FOR WORK DONE.

At the Ilford County Court, Ernest Jacques sued The S.X. Cycle and Motor Company, of Ilford, for £2 paid under protest to the defendants for re-leathering the clutch of a motor-car, also for £4 damage caused by the alleged negligence and unskilful work of the defendants to the car; and for the return of goods alleged to be unlawfully detained, or £1 14s. their value. His Honour gave judgment for the plaintiff for £5, to be reduced to £4 if the battery is returned within ten days, with costs.

DOG V. MOTORIST.

At the Derby County Court, Joseph Butler claimed £7 from Samuel Worthington for damages sustained to himself and his motor-cycle by reason of defendant's dog not being under proper control. It was alleged that the defendant's dog, a St. Bernard, weighing 10 stone, was romping and racing about Victoria Street on the night of 25th March, and ran into the plaintiff, who was on his motor-tricycle, knocking him off and damaging his machine. For the defence it was contended that the plaintiff was

Bench, concluding that a signal was given by Mr. Minton to stop and that defendant disregarded it, imposed a fine of £5 and the costs.

POLICE TRAPS.

BERKSHIRE police traps include one at Old Windsor, and another about a quarter of a mile from the police-station at Clewer, in addition to those already reported.

We understand there is a police trap on the London side of Dorking by which motor cars are stopped in the town (even though going slowly through) if they have been seen travelling fast outside. This is said to be effected by means of signals from Box Hill.

THE Avenue, Southampton, is now regarded by the police as an enticing trap for motor-car drivers, a mile having been measured off for the purpose. At Totton there is a measured distance about 500 yards from the bridge between Southampton and Totton.

SOME person, probably a member of the Yorkshire Automobile Club, who has evidently been caught at the Spacey Houses Police Trap, has been good enough to paint a warning sign on the wall in bold letters, about 12 in. high, "Motor Trap," and if any other motorist is caught there it will most probably be his own fault.

THE following police traps and measured distances are most elaborately arranged near Malton and York. One at Four Alls Public House, six

miles from York; also between the seventh, eighth, and ninth milestones, at Barton Hill, and 1½ miles from Malton, past Old Malton Cross Lane, 400 yards after the school with clock tower. There are notices posted in and about Malton, printed in bold red letters, and stating that the full penalties will be inflicted.

MOTORIST SENT FOR TRIAL.

At Marlborough Street (London) Police Court, Emile Soland, a French engineer, of Bloomsbury Square, was charged, on remand, with furiously driving a motor-car in Regent Street on Sunday, May 3rd, thereby causing bodily harm to Hugh Evans.

Constable Hollands deposed that at about 12.30 on the morning in question the defendant came along Regent Street at about eighteen miles an hour. At Foubert's Place the car shot between the kerb and a cab. A shout was heard, and witness found Mr. Evans lying injured in front of the car, which had stopped. Mr. Denman said that in cases where persons were mangled he always committed for trial, and expressed his opinion that until there had been two or three convictions for manslaughter the public would continue in an unsafe state. Soland, who pleaded not guilty, and reserved his defence, was committed for trial, bail being allowed.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Grantham ...	C. Gaulard (driver to Capt. Wemyss)	—	Adj.
Coleshill ...	N. Parish, Coventry	—	£3, etc.
St. Neots ...	J. Wilson, Newcastle	20 m. p. h.	£6, etc.
"	H. Goodwin, London	—	£7, etc.
"	F. Mundy, London	—	£5, etc.
"	B. Shaw, Sheffield	—	£6, etc.
Farnham ...	W. Payne (driver to Sir W. Pearce)	—	£5, etc.
Slough	C. Thomas	—	£6, etc.
Oxford	V. A. Whitehead, Oxford	—	£5, etc.
Leeds	H. Fenton, Dewsbury	16 m. p. h.	Dismissed
Weymouth ...	F. Martin, Weymouth	—	20s., etc.
Grimsby ...	T. H. Swaby, Grimsby	—	15s.
Chertsey ...	Sir A. Cooper, J.P., Surbiton	—	10s.
Lancaster ...	J. Hall, Oldham	—	£5, etc.
"	G. W. Hodge, Blackpool	—	£5, etc.
Croydon	A. Anderson, Orpington	—	5s. 6d. costs
"	A. Wood, Shirley	—	£5, etc.
"	M. Barkley, London.	22½ m. p. h.	£5, etc.
"	H. S. Hilsley, Lee	—	£2, etc.
High Wycombe	J. Reynold, driver to Major Cecil Grenfell	20 m. p. h.	15s.
"	W. Banks, driver to Lieut. A. Grenfell	—	15s.
Wokingham	G. Dupare (driver to Captain Fletcher)	—	£25.
Norman Cross	T. Staples, Kingston	20 m. p. h.	£5, etc.
Watford	*E. H. Gates, Watford	20 m. p. h.	£3, etc.
Coventry	G. Herbert, Coventry	—	2s. 6d.
Windsor	G. Wright, (driver to Lady Geraldine St. Lawrence)	—	Dismissed
Newmarket	J. E. Collin	—	£5.
Birmingham	S. H. Pinsent, Birmingham	18 m. p. h.	10s., etc.
"	*C. H. Smith, Moseley	18 m. p. h.	10s., etc.
"	G. Holliday, Acocks Green	—	Dismissed
Lancaster ...	T. Scarisbrick, Mayor of Southport	—	Adjourned
Nottingham	M. Granger, Ilkeston	16 m. p. h.	21s.
Doncaster ...	P. Walker, Pontefract	—	20s., etc.
Lincoln ...	A. Leigh	—	15s.

Where no alleged speed is given it is understood to be above the legal limit.

* Motor-Cycle Cases.

Pressure on our space prevents the publication of all the cases heard during the week.

As a result of a trap at Carshalton Hill, a batch of motorists appeared at Croydon Police-court on Saturday last. In the case against Andrew Anderson, police-constable Ewers said that on May 9th he was on duty at Carshalton Road, where he saw the defendant coming along in a motor-car, and he covered a measured 220 yards in 27 seconds. This worked out at 17 miles an hour. The defendant vigorously disputed the evidence. The car, he said, was only purchased the day before he was stopped by the police, and it was his first run out. He had since tried it twenty times under similar conditions and found it impossible to travel at the speed named. The magistrates were impressed by Mr. Anderson's defence, and in the hope that he would be careful in future they let him off on paying 5s. 6d. costs. Another defendant, Harold S. Hilsley, denied going at the rate as alleged. His tyre, he said, was punctured, his brake was on, and his friends in the car warned him of the trap when they saw the first police-

man give the signal. He (the defendant) then simply crawled down the hill. A fine of £2 8s. 6d. was imposed in this case.

At High Wycombe on Saturday John Reynolds and William Banks, drivers for Major Cecil Grenfell and Lieut. Arthur Grenfell respectively, were summoned for driving at excessive speed. Evidence showed that in 30 secs. defendants travelled 300 policeman's paces, which worked out at 20 miles an hour. Defendants admitted the offences, saying they had driven their masters' guests from Beaconsfield to the Yeomanry camp at Wycombe.

At Lancaster, on Saturday, Mr. Scarisbrick, the Mayor of Southport, was summoned for furious driving. The defending solicitor obtained an adjournment, as defendant had a similar charge to meet at Garstang.

In the case of G. W. Holliday, who was summoned by police-constable Harris (71A) for furiously driving a motor-car in New Street and Corporation Street, Birmingham, the defendant denied he was the man, and said that on the date in question his car was being repaired at the works. Evidence to this effect having been given, the case was dismissed.

At Wokingham (Berkshire), on Tuesday, George Dupare, driver to Captain A. Fletcher, of the 2nd Life Guards, was fined £25 and costs for two offences on the same day, and for refusing to stop when called upon by the police.

MR. T. TAYLOR has opened a repair shop and garage at Forest Row, Sussex, where a stock of petrol and accessories will be kept on hand.

MESSRS. CHIPPENDALE AND CO. inform us that they have taken the Grand Hotel Garage, Harrogate, with accommodation for fifty cars.

TO-DAY (Saturday) the members of the Scottish Automobile Club are to pay a visit to Philiphaugh, Selkirk, on the invitation of Mr. W. Strang Steel.

WE understand that Mr. E. Shrapnell Smith has resigned his position as general manager and secretary of the Road Carrying Co., Limited, of Liverpool.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C.4, and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, JUNE 13, 1903.

[No. 223.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



UNHAPPY is the member of the canine tribe who wantonly rushes beneath the wheels of an automobile. Such a course of misconduct invariably leads to fatality, and is usually followed by letters to the Press denouncing as murderous villains the occupants of the motor-car that is nearly upset by the canine onslaught. Owners of animals must really keep them under control; that they have been allowed to wander aimlessly across the carriage way and to suddenly threaten passing cyclists is an old custom that needs revision, in view of the new locomotion, and we would impress upon lovers of dogs the necessity of training them to regard motor-cars with the indifference that all well-disposed animals show to other vehicles. Otherwise the consequences to the dogs will be as serious as Stevenson thought they might be to the "coo" that wandered on to the railway track.

Motor-cars at an Agricultural Show.

THE forty-sixth annual show of the Ormskirk and Southport Agricultural Society had a novel feature in a contest between about a dozen motor-cars. It was stated at luncheon by the Mayor of Southport (Mr. T. T. Scarisbrick), who is president of the Society, that so far as agriculture is concerned the motor-car has come to stay. In the motor-car they had a representation of the spirit and the progress of the age. The farmers present, so far as could be gathered, however, had not quite the opinion on this subject that Mr. Scarisbrick had. They raise horses for agricultural work, and are not yet prepared for scientific adjustments such as bring the motor-car to apply to their industry. If the farmers had their doubts the general public gave no consideration to them. They were delighted by a novel competition. Each car had to run round the track, had certain evolutions to make, and all was done swiftly and skilfully. The first prize went to Mr. Leonard Williamson with his 10-h.p. Lanchester, the second to Mr. Harold Bell, and the third to Mr. W. Dudley Coddington with his Georges Richard car. The first motor-car display at an agricultural show took place at the Highland Society's exhibition at Perth in 1896, when there was one entry and no competition.

Furious Driving.

OUR list of alleged cases of furious driving seems to have been increased in length by the fine weather, which has taken policemen as well as motorists on to the highways, there to lie in wait for unsuspecting wayfarers. Scotland and Ireland are represented in the list, while hardly an English district where good roads are found is absent. It is a curious revelation of the respect in which the law is held, and should convince legislators as to the widespread dissatisfaction with the existing state of things. At the same time, we would draw attention to the publication of police traps in our columns as constituting a useful feature for motorists on tour.

Police Traps.

AN enterprising Yorkshireman has improved upon our plan of helping our readers, and has posted bills on the telephone poles warning passers-by of the existence of a police trap. Pieces of paper on the roadside have long been familiar to motorists as warnings not to be lightly disregarded, but this scheme has had sufficient of the element of novelty to arrest the attention of the police, with the result that this public benefactor has had to appear before the magistrates, by whom he was promptly fined. Fortunately, the *Journal* cannot thus be hauled before a Yorkshire Bench for seeking to prevent the flow of fines into the county coffers, and we would take this opportunity of thanking those readers who have kept us informed of the presence of police traps in their localities.

The Automobile Mutual Protection Association, Limited.

A GENERAL committee meeting of this Association was held at the registered offices, 88, Chancery Lane, London, W.C., on Friday, the 5th inst., when there were present Mr. J. J. Mann (chairman), Messrs. E. Shrapnell Smith, E. Lisle, Charles Cordingley, A. E. Hodgson, R. Moffat Ford, and F. F. Wellington. Mr. G. R. Helmore, F.C.A., the secretary of the Association, was in attendance. A large amount of business was done, and numerous cases brought before the committee by members arising out of patent and other claims were dealt with. The Holland Park Motor Company, Messrs. G. T. Riches and Co., and Mr. Alfred Harmsworth were elected members of the Association. A satisfactory bank balance having been reported, the meeting concluded with a vote of thanks to the chairman.

The Stage and the Motor-Car.

APPARENTLY the automobile will soon prove an important method of vehicular progression for actors and actresses in their leisure hours and for the purposes of going to and from the playhouse every night. But as the "Era" points out, for real purposes of utility it must appeal more directly and seriously to the music hall performer, who at present has to keep or hire a carriage to enable him to do his nightly "turns." Among theatrical motorists are Mrs. Beerbohm Tree, Miss Eva Moore, Miss Ethel Mathews, Miss Kitty Loftus and Mrs. Arthur Bourchier. Messrs. Arthur Collins, T. E. Dunville, Lewis Waller, and Mr. George Edwardes are also motorists, and, according to Mr. W. P. Warren-Smith, Sir Charles Wyndham has for some time been thinking of going in for a car, but, owing to the car breaking down on a trial run, which made him late for rehearsal, we believe he has not yet decided to purchase. Mr. Frederick Stanley (Terry's Theatre) has lately joined the ranks, in ordering a car, and it is very probable that Mr. Herbert Sleath, of the Avenue, will follow. Then there are Chirgwin, Gus Elen, and George Foster, who are all seen to be riders and drivers for professional or private purposes. As far as memory serves, Mr. George Musgrove was the first manager to employ a motor-car for advertising purposes. It was during the run of the "Scarlet Feather," some four or five years ago, at

the Shaftesbury Theatre. Since then many managers have adopted this method of preventing their light and their programme from being hidden under a bushel." The practical side of motoring in the profession was forcibly illustrated the other day as a happy party drove up to the "Era" office. The motorists were four in number, and consisted of Mr. Harris Fineberg, of the "Star," Liverpool, Mr. and Mrs. E. Mill-Mitchelson, and Mr. J. G. Stafford. They had journeyed up from Liverpool, calling at Birmingham, Coventry, and Wolverhampton on the way to the metropolis, making an agreeable combination of business and pleasure.

The Scottish Automobile Club.

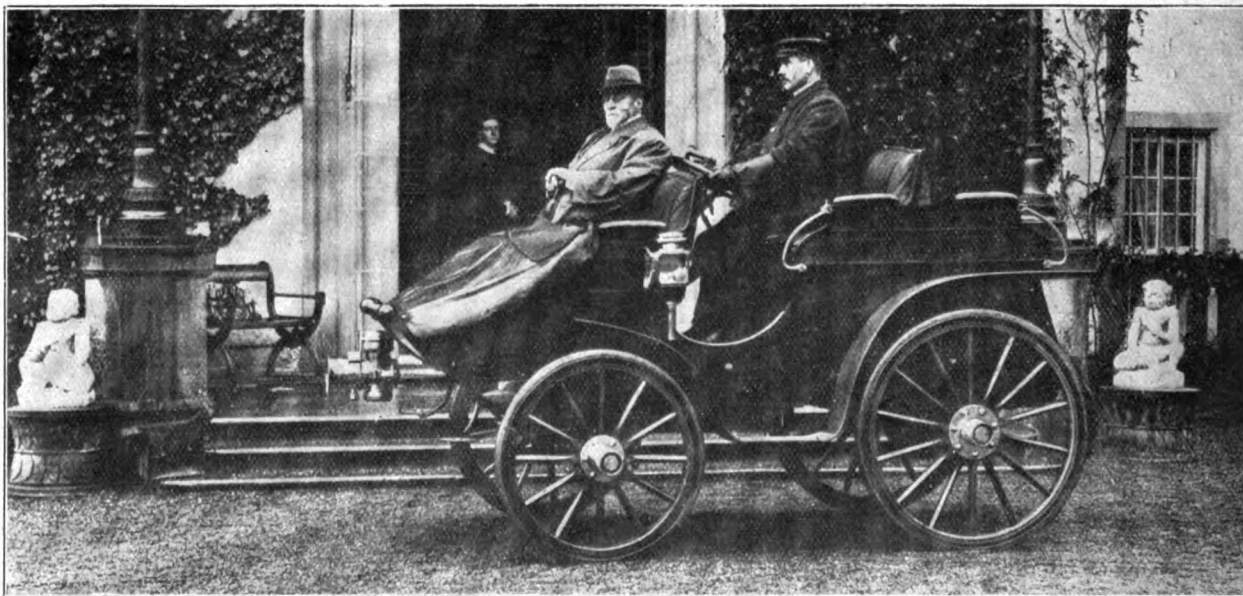
THE annual run of the Eastern and Western districts of the Scottish Automobile Club took place on Saturday to Philliphaugh, the residence of Mr. Strang Steel, a few miles from Selkirk. The weather was charming, but the roads were rather dusty. There was a large turnout of members and friends, and fully one hundred enjoyed Mr. Steel's hospitality. After lunch Mr. Norman D. Macdonald proposed Mr. Steel's health, to which the latter replied. Sir J. H. A. Macdonald (Lord Justice Clerk), in replying to the toast of his health, said that

steam emitted into the air behind. Whether the experiment was successful is not known. Pictures of Symington's car of 1786 and Hancock's steam car of 1833 were shown. Sir David severely criticised the conservatism of the country in not repealing the Light Locomotives Act before 1896. He estimated that 10,000 cars were made in France every year, half of which were exported, and although we were now improving, we were still copying the French patterns. The lecturer then discussed many technical points of importance to designers and purchasers of cars, and concluded with a cinematograph exhibition of the Paris to Berlin Motor-car Race. The view was taken at the Belgian frontier, and depicted the cars arriving, the examination of passports, and their subsequent departure.

Motor-car Drivers.

THE summary of the Census returns for England and Wales for 1901 has just been issued, and reveals the fact that in that year 623 men were classified as motor-car drivers, an occupation which had not appeared in any previous figures.

Probably since that date another two or three thousand could be added, and in future returns the automobile industry will prove a considerable factor in the totals. There is no doubt a



Mr. W. Strang Steel, of Philliphaugh, N.B., on his 12-h.p. Arrol-Johnston Car.

he came from Edinburgh in company with the Chief Constable, who had taken care that neither within nor without his jurisdiction had the speed limit been exceeded. After lunch the guests had plenty to occupy their interest in visiting Mr. Steel's Burmese Museum, which contains, among many curiosities, King Theebaw's state bed and the full-dress state armour of the commander-in-chief of his army. It was generally remarked that there was a great increase of large and high-powered cars among the members. Amongst those present were Messrs. John Macdonald (Chairman Eastern Section S.A.C.), George MacMillan (Secretary Eastern Section), Professor Dawson Turner, J. D. Crombie, Dr. Elder, W. L. Sleight, Councillor W. W. MacFarlane, John Adam, R. J. Smith (General Secretary S.A.C.), and Professor Galt.

Sir David Salomon's Views.

SIR DAVID SALOMON, Bart., delivered a lecture in the chemical lecture theatre, Oxford, recently, on the "Self-Propelled Vehicle." He commenced by giving Sir Isaac Newton the credit of conceiving the first idea of a self-propelled vehicle. This vehicle, which was constructed in 1786, was propelled by

large number of young men are going into the motor industry as drivers, and hardly a week passes without someone in another line of life writing for advice as to how to enter into the service. Unfortunately, we are afraid many mechanics have placed their calling in some disrepute by their forward and wayward manners. The coachman who has had experience only of carriages seems to give more general satisfaction to private owners, for the simple reason that he is accustomed to take an interest in the appearance of his vehicle. This may seem a small point, but it is one which should not be ignored by mechanics and others who wish to drive cars for private users.

In North and South.

THE "Yorkshire Post" in the north and the "Daily Telegraph" in the south have been admitting to their columns letters and news with regard to automobilism. In the last-named newspaper the views of motorists have been fairly stated by such authorities as Messrs. D. M. Weigel and S. F. Edge; in the former they have been misrepresented by editorial leader writers,

who seem to regard the whole thing as a joke. The new Bill produced by the Automobile Club with regard to the regulation of motor-cars on the highway is described in the Yorkshire daily as fit for the columns of a comic paper, and our contemporary seeks to ridicule the movement to place the present position in a more satisfactory light. The law is now disobeyed by J.P.s who motor as well as by motorists who are not J.P.s; judges have declared its absurdity; the Premier himself cannot keep within its restrictions; the author of the existing Act declares its inadequacy, and altogether the merit of the Bill is that it seeks to remove a state of things that would be laughable if not so serious. Why, then, should a great newspaper seek to travesty the position?



Picnicing in Savernake Forest. (See page 264 last issue).

Newspaper Sensation.

REALLY, it would appear that some of the editors of newspapers have instructed their correspondents to chronicle every mishap to a motorist and to give the most exaggerated picture of such incidents. The most insignificant occurrences in which motor-cars happen to figure are being glorified in the boldest type, and nothing is apparently being left undone to prejudice the public mind against what every reasoning person recognises as the inevitable. In fact, it would appear that some editors have reverted to the days of prejudice that followed the passing of the Act in 1896.

"In the Heart of the Country."

ON a petition being received by the Warwickshire County Council from a number of parish councils within its area, the Roads and Bridges Committee recommended that, as there were bye laws dealing with the subject of which it treated, viz., the speed of motor-cars, nothing more should be done. Alderman Bolton King made a temperate speech in support of further instructions being given to the police, and on a division being called his amendment to that effect was lost by the casting vote of the Chairman. Warwickshire people are apparently rather prejudiced, and not only the agriculturist but the huntsmen of the country have proved unfriendly to the automobile. We look to the Midland Automobile Club to educate local public opinion on the subject.

South African Needs.

OUR correspondent at Cape Town sends some suggestions with regard to automobiles from South Africa which will be read with interest and profit by all concerned with the industry. At present the export from this country is of quite miniature proportions, but is likely to advance quickly in some of the

colonies. Naturally, South Africa is well regarded in this connection, and hence the increased interest at the present time attaching to the thoughtful contribution by our correspondent.

The Value of the Motorist.

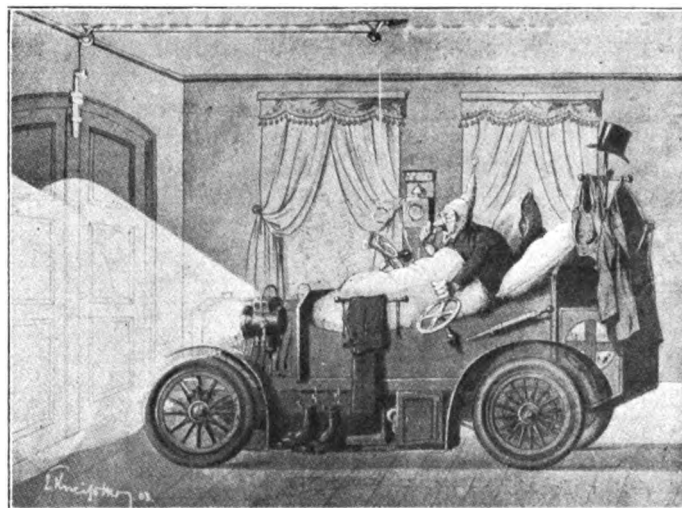
STATISTICS recently published show that in the year ended March 31st last thirty-two motorists were fined in the East Riding Division of Yorkshire. The fines amounted to £93, an average of about £3 per case. Such enterprise on the part of the constabulary is not only likely to be commended by the ratepayers, but there is a fear that they will urge greater activity on the part of the police. "Here, surely," we can imagine the chairman of the Finance Committee saying to his colleagues, "is a source of revenue into which we should dig deeper, especially as most of the victims live in other counties and cannot vote against us at election times."

The Hooded Van.

THE Tunbridge Wells Town Council has adopted a bye-law requiring every van or other covered vehicle intended to be driven by a person sitting inside to be so constructed with side windows or otherwise as to enable the driver to see the approach of cycles, motor-cars, or other vehicles from behind or on either side. This is a policy we should like to see adopted by councils in other parts of the country. There is no doubt that many of the accidents occurring every day are the result of the carelessness associated with drivers of hooded vans, and the sooner a general application of the prohibitive principle is made the better for all who make up the traffic on the highways.

Good Roads Wanted.

IN the last of his Cantor lectures on "Mechanical Road Vehicles," Mr. W. W. Beaumont, referring to motor-omnibuses, said that if greater speed than that of the horse omnibus, and economy in running were desired, it would be necessary to have lighter cars carrying fewer people than at present. We had not yet enough experience in motor-omnibuses to indicate



The Doctor of the Future—All ready for night calls. (Das Schauferei, Munich)

either qualified success or failure, but there was no doubt that a vehicle had been designed which might be successfully used under proper conditions. There was another form of omnibus which might come to the front in the future, and that was a vehicle electrically propelled by a current received either from an overhead or a side wire. The motor question, in his opinion, was a road question, for upon the quality of roads very largely depended economy in vehicles and working, and even the price of articles distributed by them. As far as vehicles were concerned, there was little doubt

that the development of the internal combustion motor would be so great as, at all events, to retain the place it now had, though the electric car was likely to grow in favour where only short distances were required to be covered. The motor-car for carrying loads from five up to twenty hundredweights had not been, up to the present, as successful as could have been wished. Perhaps too much had been expected of it and not sufficient care had been shown in looking after its mechanism.

The West Surrey Club.

THE West Surrey Automobile Club held a run on the 30th ult., when members met for tea at St. Mary's, Godalming, the residence of Mr. R. W. Buttemer, the Hon. Secretary, and subsequently continued the run to Haslemere. About eight cars were present. On the 6th inst. a general meeting for the election of the committee was held at "Kincraig," Guildford, by the kind invitation of the Chairman, at which the following officers were elected:—Chairman, Rev. A. Armitage; Treasurer, Col. Howard Fairtlough; Committee, Capt. Rouse, Messrs. Wilson Noble, W. G. Crothers, J. F. Ponsford, and A. C. Tesier; Hon. Sec., Mr. R. W. Buttemer. After tea a run was made to Leatherhead and Dorking, in which the following members took part:—Mr. Wilson Noble (14-h.p. Daimler); Mr. E. Pullman, 12-h.p. Durkopp; Rev. A. Armitage, 12-h.p. Darracq; Mr. Buttemer, 10-h.p. Decauville; Mr. W. Maclean and Dr. Wyatt Smith, 9-h.p. De Dion; Mr. Crothers, 9-h.p. Darracq; Dr. Fennings, 5-h.p. Benz; Mr. A. King, 3½-h.p. Benz. Warning had been given of a "trap" at Boxhill, so a funeral procession was arranged for the few miles into Dorking, but the enemy were not to be seen, and the climbing of Coast Hill, 1 in 8, proved an interesting trial, particularly to the weaker members of the party. The "dust question" was much in evidence, and it is sincerely to be hoped that Surrey surveyors will tackle the problem of dustless roads to some effect.

Cars on the Course.

NOT all lovers of horses regard the motor-car with aversion, and those responsible for the various race meetings taking place in different parts of the country are often found most careful in making arrangements for the comfort of motorists who journey to the meetings by road. Recognising the increasing support given by the owners of motor-cars to race meetings, the executive of Lewes Races has decided to provide facilities for the execution of repairs and for the purchase of petrol on the course each race day. A repairing pit has been constructed, and two repairers will attend with a complete set of tools. In order to give this idea a fair trial we learn that the usual admission charge to the carriage enclosure of £1 was suspended in favour of all members of the A.C.G.B.I. attending on Thursday of this week. Should the experiment prove successful, it will probably lead to similar arrangements at Gatwick, Folkestone, Alexandra Park, Plumpton, and other race fixtures under the management of Messrs. Pratt and Co.

A Motor Track.

THE intentions of those who hoped to make Bexhill a centre of automobile interest by reason of a motor-car track having been frustrated, one or two suggestions have since been made that other seaside resorts should thus welcome the motor-car. Blackpool, Clacton, and Southport have each been favourably mentioned and once Lowestoft was to the fore in this connection. The credit of realising the proposal would seem to be reserved for Eastbourne, a fashionable town that recognises the important part motor-cars are likely to play in the future. At the last meeting of the Eastbourne Highways Committee, Councillor Simmons suggested that a motor track should be established there, and we understand that the Town Clerk is now in correspondence on the subject with the Duke of Devonshire, Mr. Freeman Thomas, M.P., and Mr. Davies-Gilbert, the three landowners through whose estates the proposed track would run.

The Paris-Madrid Race.

THE Sporting Committee of the A.C.F. has decided that the Paris-Madrid event shall be considered as "no race," the times from Paris to Bordeaux being only published as a matter of information. Gabriel has been awarded the prize given by the city of Bordeaux for the best time from Paris, and also the cup which the Royal Automobile Club of Spain destined for the winner of the Paris-Madrid race. The examination of the records from the various controls has slightly altered the placings and the times, and the following results are now given as final:—Heavy cars: The first three placings are unaltered, De Crawhez steps into fourth place with 5h. 54m. 11 2-5s., Warden is fifth with 5h. 55m. 30 4-5s. In the light car class the placings are unaltered, but the times are increased by a few minutes. In the voiturette and motor-cycle sections the first five places are unaltered. The Arenberg cup, for the fastest car in the run to Bordeaux using alcohol as fuel, has been awarded to M. Rigolly, who drove the Gobron-Brillié, No. 21, his time being 7h. 44m. This cup was formerly held by M. Rene de Knyff.

The German Daimler Works destroyed by Fire.

A DISASTROUS fire broke out on Tuesday at the works of the Daimler Motoren Gesellschaft, at Cannstatt, Germany, where the Mercedes cars are manufactured. The telegraphic accounts so far received give the number of completed and partly-completed cars destroyed as anything between 60 and 200, these including the 90-h.p. vehicles intended for the Gordon Bennett race. A special meeting of the German Automobile Club was to be held on Thursday to consider the steps to be taken as regards the German cars for the Cup race.

THE competing cars in the Gordon Bennett race will be started at intervals of seven minutes.

MR. C. CORDINGLEY'S Star racing car, and also a 10-h.p. Star car, are among the entrants for the speed events in Phoenix Park, Dublin.

THE Motor Mart, Limited, has adopted some ingenious designs in its advertisements, one of which suggested the illustration with which we introduced our "Comments" last week.

JUST as we go to press we learn that, as a result of representations made by the local authorities through whose districts the cars will pass, the Belgian Automobile Club has reversed its decision with regard to the Circuit des Ardennes, which will now take place on the 22nd and 23rd inst.

THE first heavy vehicle trial in America under the auspices of the Automobile Club of America took place on the 20th and 21st ult. There were fourteen entries, of which twelve put in an appearance, one of which was a five-ton steam lorry sent over by Messrs. T. Coulthard and Company, of Preston. As we go to press we learn that this vehicle has been awarded a gold medal.

ONE of the surprises of the week is the announcement that the Locomobile Company of Great Britain, Limited, have been appointed sole agents for the Oldsmobile petrol car in Great Britain. From now onwards none of these vehicles will be shipped to England except to the Locomobile Company. We are also informed that the price of the car, fitted with the new carburettor, will be £150 net.

AMONG the companies registered during the past week is one with the title Charles Jarrott and Letts, Limited, and with a capital of £10,000, to carry on the business of dealers in motors, motor-cars, etc. The first directors are C. Jarrott (governing director), W. M. Letts, and E. R. Kennedy. As a result of enquiries as to the concern we learn that it has been formed to carry on and extend the motor-car agency business lately established by Mr. C. Jarrott in Great Marlborough Street, W. Mr. W. M. Letts, who has been connected with the Locomobile Co. of Great Britain for the last few years, has resigned his position as managing director of this company to join forces with Mr. Jarrott in developing the business in De Dietrich and Napier cars. We also understand that it is intended to introduce a popular-priced vehicle.

SOUTH AFRICAN NEWS.

[FROM OUR OWN CORRESPONDENT.]

CAPE TOWN, May 15th, 1903.

A BUSINESS trip of 440 miles by motor-car has just been made by Mr. D. Menzies, the chief engineer to the Dunlop Motor Company at Cape Town. The places visited included Caledon, Hermanus, Staddford, Napier, Bredasdrop, Swellendam, and Worcester, and by the ordinary railway and Cape cart the journey would probably have occupied eighteen days. On the coast road near Hermanus Mr. Menzies had to drive the car through twenty miles of heavy wet sand, both he and his passenger having to get out of

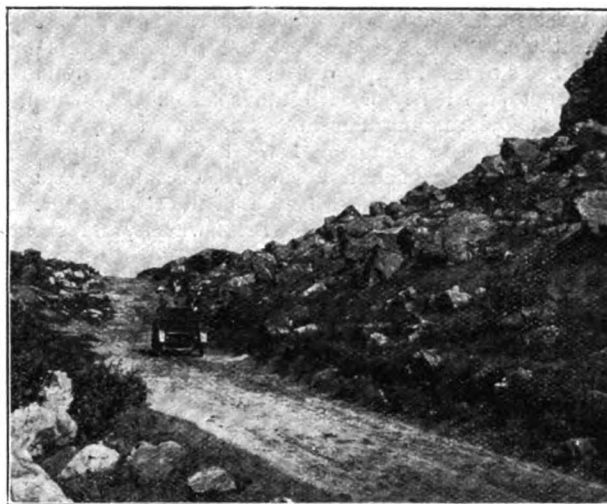
Opera Company. There is room for improvement in the roads. Mr. Kitchener tells me that it took six men to slide his car down a drift into the river. The road, beside sloping downwards, tilts at an acute angle sideways to a twenty foot drop over the bank.

Now that the automobile has come into such general use, it may not come amiss to make a few suggestions regarding the construction and fitting of cars for export to South Africa.

The first consideration must undoubtedly be strength. The sudden severe shocks to which the car is subjected when travelling over the rough South African roads render tubular framing hardly suitable. The tubes are liable to get dented or bent. Occasionally, too, sheer drops of sometimes as much as



On the Veldt.



Among the Kopjes.



Crossing the Crocodile River.



Camping near a Dismantled-Boer Farm.

AUTOMOBILE SNAPSHOTS FROM SOUTH AFRICA.

[Automobile Welt.]

the vehicle and walk alongside. Just out of curiosity, he asked a farmer what he would charge for a Cape cart and four horses to take them through the sand. He said he would not let his horses go under £10, or 10s. a mile! He thought Mr. Menzies wished to leave the car at his farm, and go on by cart. The car made the 130 miles from Worcester to Cape Town in a little over eight and a-half hours.

I send a snapshot (see next page) taken in Alexandersfontein, 6½ miles from Kimberley, outside Messrs. De Beers' new hotel in that town. The car shown is the "Swift" Messrs. Day and Kitchener, which made the first run from Kimberley to Bloemfontein, the latter being at the helm. The gentleman with the Werner motor bicycle is Mr. Thomson, of the D'Oyly Carte

twelve inches are encountered when touring in the Cape Colony, and when these are approached from the higher level it is often impossible to see them in time to slow down. Drifts and "sluits"—narrow ditches running across the road—make it imperative that, while being light, the frame must be strong and rigid. The frame of the Soames car, described in a recent issue of the *Journal*, seems to me to be very suitable for these roads. In this case, the engine is built in a sort of underframe, which renders it immune from bad road shocks, while it isolates the passengers from any vibration. The driving mechanism should be built as high from the road as possible, as large loose stones are constantly met with, some being so large as to necessitate clearing them out of the way to

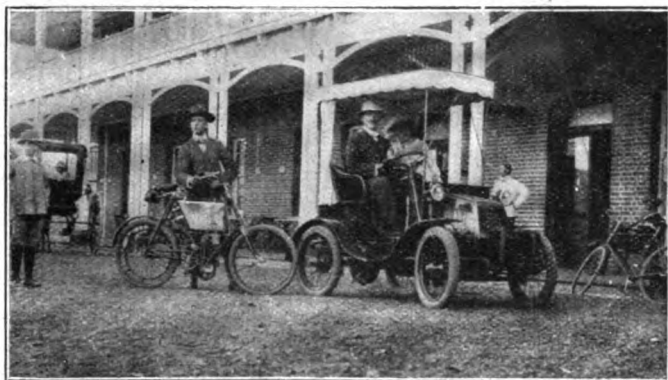
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allow the car to proceed. On most of the country roads the only decent portion is the track made by wagon and cart wheels. The wheels and tires should also be larger than those usually fitted to cars for use at home, and wire wheels are preferable to wooden ones, as they are more resilient, besides which the majority of wooden wheels are liable to shrink.

The question of suitable tyres is too large a one to be dealt with fully here. The statement has been freely made that double-tube tyres were unsuitable for these roads, and that single tubes were better. The argument was that the outer covers of double-tube tyres would be reduced to rack and ruin so quickly as to render the cost of upkeep almost prohibitive. I think that, were this the case, the same remark would apply to single tube tyres. In my opinion, a double-tube tyre with a properly reinforced outer cover is as good as any. Solid tyres are unsuitable. The late Mr. Rhodes had solid tyres on the driving wheels of his 10-h.p. Wolseley, and it was found that they did not sufficiently absorb the road shocks, which were severely felt by the mechanism. The car afterwards passed into the hands of the Rudge-Whitworth Cycle Company here, and is now fitted with pneumatics, with the result that the speed of the vehicle is considerably increased and it rides much more easily. All tyres should be on equal size wheels, and should be interchangeable.

The steering gear must be of the non-reversing wheel type a large steering wheel, and should be stoutly made to withstand jolts.

The steering centre lines should be coincident with the planes of the wheels near the ground, thus making the car practically self-steering like a bicycle.



A Snapshot at Alexanderfontein, South Africa.

Three speeds forward should be provided, and, rather than have the car fast, it should be geared for climbing stiff grades.

Two sets of brakes should be fitted, one on the differential gear, and inside band or rim brakes on the rear wheels.

Lamps are an important item out here when driving at night, and should be very powerful. A red tail lamp must also be carried.

I do not think that, owing to the uncertainty of the water supply in this country, steam cars are at present suitable. The springs are almost all dry during the summer, and during the rainy season are sure to be impregnated with foreign matter, which would corrode the boiler very quickly. All the same, the Royal Engineers used a Locomobile car with marked success during the recent war, towing a trailer, operating a searchlight, firing mines, etc., and it was put to some very hard usage, such as fording rivers and running over the rough veldt.

The third motor-car to visit Mafeking was a 12-h.p. Gladiator from Johannesburg driven by Mr. Atkey, of Nottingham, who was accompanied by Captain F. G. Connock. They left Johannesburg twelve hours later than would have been necessary had they gone by rail, and arrived at Mafeking thirty-six hours before the train was expected—a saving of 48 hours. The consumption of petrol was five gallons, purchased at Johannesburg at 3s. 6d. per gallon, bringing the cost of the trip to 17s. 6d., or under 1½d. per mile.

THE IRISH FORTNIGHT.

At daybreak on a recent morning Messrs. S. F. Edge, C. Jarrott, and J. W. Stocks left London for Holyhead, en route to Dublin and Athy. Each drove a 35-h.p. Napier car, Messrs. Jarrott and Stocks steering the machines they will drive in the race, while Mr. Edge, whose 110-h.p. Cup defender is not yet ready, took over a spare machine, one of four which accompanied the party. A. E. Bianchi and J. Macdonald, who will act as mechanics to Messrs. Jarrott and Stocks, were also of the party.

THE British team is now installed at Castle Rheban, about two miles from Athy, and Mr. Edge bears testimony to the improvement that has been made in the condition of the road since his last visit. The local police are exercising great vigilance with regard to keeping stray animals off the course, in view of the number of motorists now to be seen every day in the district, and at the Ballylinan (Queen's County) Petty Sessions, on Saturday, a number of people were fined in connection with these offences. The magistrate warned the defendants that if they were brought up again they would be very severely dealt with. In one case it was stated that a goat was trespassing on the road at Simmon's Cross, being tethered to a bush on the roadside.

MR ALEXANDER WINTON and Mr. Percy Owen, two of the American team to represent the United States in the Gordon Bennett Motor-car Race, landed from the "Campania" at Queenstown on the 5th and proceeded to Dublin, where four American cars (two racing and two touring) had already arrived. Mr. Harold B. Anderson, Mr. Winton's mechanic, had arrived a few days previously, accompanied by Mr. John J. Jack and Mr. Charles J. Graham, two gentlemen who are connected with the Winton Factory.

WE learn on good authority that the German team for the Cup race will be Baron de Caters, M. C. Jenatzy, and Hieronymous. As regards the French team, it is expected that Fournier will use the Mors car which Gabriel drove so successfully to Bordeaux in the Paris-Madrid race. The Panhard cars to be driven by Messrs. Rene de Knyff and Henri Farman will be the same as took part in the Paris-Madrid race. It is reported, however, that various modifications in them are to be made, particularly as regards the engine, the sloping position of which is, it is said, to be altered.

ARRANGEMENTS have been made by which Monasterevan and Stradbally have been added to Kildare, Athy, Castledermot, and Carlow as control stations, and, consequently, it will be possible, at stated intervals, for the public to cross over the roads at these points, in addition to the other control stations which have already been arranged. This will enable the people to concentrate on such points of vantage as Maryborough Heath, the Rock of Dunamase, and on the high cliffs along the sides of the Windy Gap road. At Windy Gap a large stand is being erected, and one of the finest views of the whole course is obtainable. In addition to a magnificent view of the motor course, seven counties can be seen from it. Stradbally is within easy reach, and this point and the Moat of Ardscoil will be popular.

MR. J. W. ORDE, secretary of the Automobile Club, has visited Athy, and had an important conference with the Urban Council. It was made clear in the course of the discussion that the Club is taking every possible precaution to guard against accidents in the forthcoming Gordon Bennett race. The Council were unable to promise to the Club the services of 100 local stewards in the town of Athy itself, as they were unanimously of opinion that on the day of the race every able-bodied inhabitant of the town would migrate to parts of the course where the cars could be seen at their top speed. It was the opinion of the Council that the police, who have already promised to supply seven of their number for every mile of the open course, should be asked to arrange for the control of the towns. The services of the

military, as at present arranged, will be mainly confined to the Curragh and the Heath at Maryborough.

A LOCAL GOVERNMENT BOARD Order, addressed to the Councils of the administrative Counties of Carlow, Kildare, and Queen's County, and making regulations for the forthcoming Gordon Bennett Motor Race, has appeared in the "Dublin Gazette." The Local Government Board Order requires that when, in accordance with sub-section 1 of the Act, any of the said Councils declare by Order that such of the public roads mentioned in Schedule "A" as are within their jurisdiction shall be used for the said race, such Order shall provide—That from the hour of 6 a.m. on the second day of July, 1903, or on such other day as the Automobile Club with the consent of the County Councils may fix, and until the race is officially notified by the stewards of the course to have been completed, the public roads mentioned in Schedule "A" shall, save as regards such portions of the course as are specified in Schedule "B," be closed to all persons and traffic other than persons appointed by the Automobile Club as official stewards of the course, members of the Royal Irish Constabulary, military on duty, light locomotives engaged in the race and persons in charge of, or directly employed in connection with, such light locomotives. That within the

foreign visitors, as well as the Club members, and on either side of the road fields have been secured, and will be reserved, for the use of the Club members and their friends, where, in marquees, will be served luncheon and afternoon tea. A short distance from the Club stand will be found another stand to seat some 3,000 persons. Between these two stands the racing cars start and also finish, so that it seems that for the occupants of these positions nothing remains to be desired from a sight-seer's point of view. The work of construction is being carried out by Mr. George Langley, of Dublin, from plans by Mr. H. J. Lundy, M.R.I.A.I.

THE Committee of the Yorkshire Automobile Club have made arrangements for their members viewing the race. They have obtained permission to exclusively use a portion of a field near Ardsclull, and commanding a view of over two miles of road. As hotel accommodation on the route is almost unobtainable, camping is being arranged for, providing sufficient members signify their intention of requiring same. Three large sleeping tents, dining tents, and all cooking utensils, etc., have been promised to accommodate fifty persons during the race day, and the night before and the night after the event. The inclusive price for this accommodation on the field per member or friend, exclusive of food



Photo by

The Gordon Bennett Course—The Junction of the Long and Short Circuits at Athy.

(Lawrence Dublin)

boundaries of each area specified in Schedule "B" the speed of light locomotives shall not exceed ten miles an hour, and that no regulation or prohibition of the County Council totally suspending ordinary traffic on the course or the roads leading thereto shall apply within such boundaries. That each County Council shall require, at such of the points specified in Schedule "C" as are within their jurisdiction, an official to be stationed who shall give notice of the approach of any light locomotive engaged in the race by sounding a bugle or in some other sufficient manner immediately upon such light locomotive appearing in sight.

ABOUT a mile and a half from Athy a grand stand is being erected, from which the competing cars can be seen for three miles, and before which they will pass seven times. In the vicinity are fields for camping-out purposes, which can be secured at about £2 per one and a-half acre.

THE Automobile Club has completed arrangements for the reception of their visitors at Kilrush, where will be constructed across the public road a stand in the form of a bridge to seat 1,000, and on this stand on the day of the great event will be found the Lord-Lieutenant and suite, a number of the

(which will be arranged for and charged at net cost), based on fifty acceptances, will figure out at about £1 per head.

MESSRS. CARLESS, CAPEL, AND LEONARD have just shipped large consignments of petrol to Mr. M. T. Woods, of Newbridge, and Messrs. J. and J. Haslett, of North Street, Belfast.

THE railway and steamer authorities in Ireland should do all they possibly can to facilitate the conveyance of petrol and motor spirit, and it is to be hoped that no unnecessary red-tapeism will militate against the supply of such indispensable liquids.

MESSRS. S. P. COLEMAN and T. H. WOOLLEN will be the official timekeepers in the Gordon Bennett Race.

THE LORD MAYOR OF BELFAST will, on July 8th, give a luncheon to the distinguished foreign and English motorists visiting the northern city, and Lord Dudley has invited a large house party, including the Premier, for the race.

At the last meeting of the Louth County Council the following letter was read:—"To the Secretary of the Louth County Council. *Re* Gordon Bennett Race Cup. Dear Sir—We, the undersigned chauffeurs, beg to lay before your Council the application for permits and licences to drive our cars on the

public roads of the County of Louth at a rate not exceeding fifty miles an hour. We are fully qualified to drive, steer, and repair. Our Panhards are expected daily. We beg to draw your attention to the dangerous condition of the Federard Bog Road, and trust you will see your way to improve same, as that part of the county will be frequented by members of the clubs of different nationalities who intend visiting Ireland, and particularly County Louth.—Wm. Crawley, Laurence J. Curran." Mr. James M'Court said they were both good, reliable men and skilled mechanics. The Council unanimously acceded to the application.

THERE is no truth in the rumour that the Phoenix column, in the Phoenix Park, Dublin, is to be removed in consequence of the speed contests to be held there.

THE Sports Trading Company, Ltd., of Oriel House, Westland Row, Dublin, have a garage with accommodation for about a score of cars, and stock petrol, lubricating oil, etc.

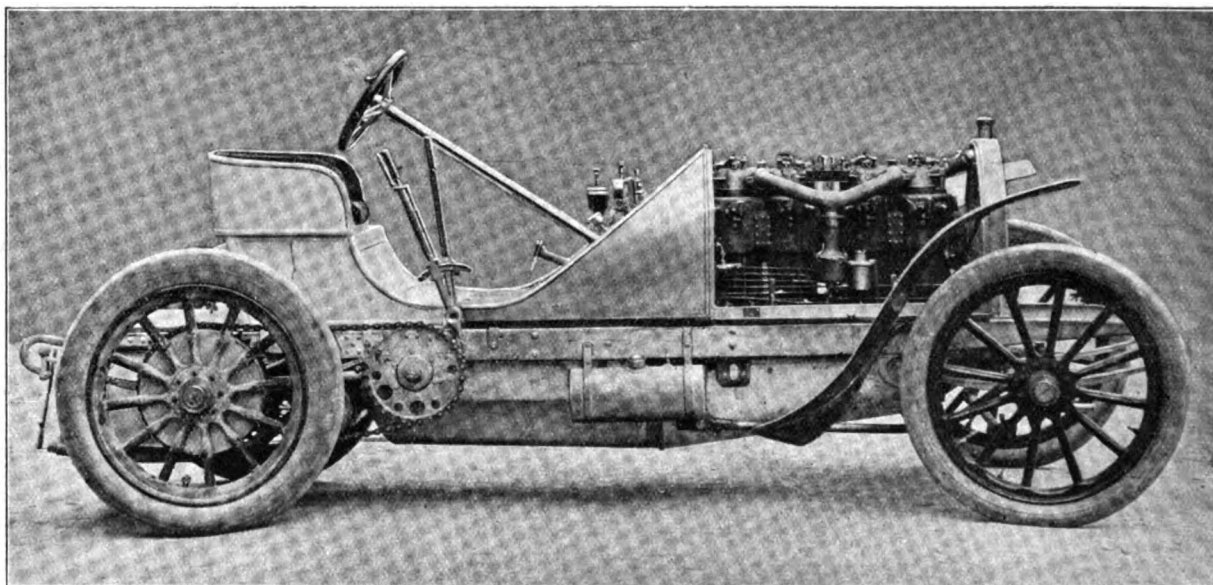
THERE is likely to be good accommodation for motorists at Naas, and quite close to the Town Hall a spacious yard is being fitted up as a garage. Provision will be made for looking after

basis of calculation with regard to the profitable running of motor-cars.

At a specially convened meeting, presided over by Lord Walter Fitzgerald, of the magistrates of the Castledermott Petty Sessions district, through which the Gordon Bennett race will pass, a resolution was passed expressing the unanimous opinion that it "would be most dangerous and indiscreet that any occasional licenses should be granted to any parties in the district for the day of the motor race."

AMONGST the features of the King's visit to Ireland at the end of July, and which (according to the "Freeman's Journal") will probably not be mentioned in the programme, will be an inspection and drive by motor-car over the Gordon Bennett Cup course. This would probably take place in company with Lord Dudley and the Duke of Connaught. The start would probably be made from the Curragh, where the motor-car would be waiting, and the trip would be to Ballyshannon cross-roads and thence along part of the Course.

WE are this week able to publish an illustration of the 90-h.p. Mercedes racing cars which took part in the Paris-



The 90-h.p. "Mercedes" Car—the type which will represent Germany in the Cup Race.

[Allgemeine Automobil Zeitung.]

the cars—a point upon which those leaving cars at garages should insist.

At the last meeting of the Lisburn Urban District Council a conversation arose as to the danger to pedestrians from motor-cars and bicycles going at a high rate of speed, and it was resolved to put up notices of warning in the public park, and to call the attention of the police to the practice.

MR. ROBERT MANNIX, of Dublin, suggests that at the sharp corners where dust is likely to be a source of danger in the Gordon Bennett race, the experiment of treating the road with boiled flax seed should be tried. Flax seed, thoroughly well boiled, and afterwards diluted with water, will, he suggests, hold the particles of dust together better than any other substances that could be used.

UNDER the Railways (Ireland) Act, 1896, coach and steamer services have been established under Government subsidies as follows:—Coach services between Tarbert and Listowel and Rooskey and Dromod, all the year round, and between Ennislymon and Ballyvaughan between June and September. Steamers are also being run between Tarbert and Kilrush and Sligo and Belmullet. The coach services are proving of great service to the localities through which they run, and may possibly afford some

Madrid race, and which it is understood will represent Germany in the forthcoming Gordon Bennett race. Only six of the vehicles have been built. The engine is practically identical with that on the 60-h.p. car already illustrated in the *Journal*, except that it is larger. The bore of the four cylinders is 165 mm., and the stroke is 150 mm. The inlet valves are, of course, mechanically-operated and the honeycomb radiator and tank is retained. The dash-board has been considerably modified in shape, and, as will be seen, does not project above the bonnet. The seat is unusually far back, being but little in front of the rear axle, with the result that a much greater "rake" has had to be given to the steering column. It may be mentioned that the fly-wheel of the engine is located at about the centre of the frame, while another point to which attention may be drawn is the new form of the front wheel mudguards. The wheel base of the vehicle is nearly 10 ft., and the wheels, which are of equal size, are shod with Continental tyres.

MOTORISTS going to the Giant's Causeway will find a garage at the Northern Counties Hotel, Portrush, under the management of Mr. Frank Cox. Pratt's motor spirit is also stocked in Portrush under his personal supervision. This is on the Belfast and Northern Counties Railway, whose circular tours will doubtless be taken by many sightseers without cars.

CONTINENTAL NOTES.

"BY AUTOMAN."

GRADUALLY, as the levelling effect of time brings down to their just proportions the facts connected with the unfortunate Paris-Madrid motor-car race, which will always have the distinction of being the last great open international motor-car test, the calm and unprejudiced minds are beginning to see how eventually good cometh out of evil. The growth of the motor-car industry has been so remarkably rapid, that mistakes were sure to creep in. It was an error of judgment on the part of the Racing Committee of the A.C.F., which has been the leader of the whole world in this matter, to allow the Paris-Madrid race to be held without stringent precautions, which were totally unnecessary in the case of the Paris-Berlin or even Paris-Vienna, but which became essential as the speed and number of the cars increased, and also as the public interest in the race grew.

It was a mistake to start the race on Sunday. The object of it was the further popularisation of the motor-car by giving everyone near the line of route a chance to see the race without neglecting the work that brings in his daily bread. It was due to this in a great measure that there were such crowds every-



The Cars at Zarauz, Spain.

therefore every event must now be surrounded with every precaution, in order that the public alarm may be calmed down, and road-racing may survive its great trial.

THE Ardennes race will be held some three months later, and will be limited to a certain number of competitors, say forty. These forty will be chosen after eliminating trials, so that the difference of speed between the different competitors will not be very great, and passing will be reduced to a minimum. The roads will be roped from start to finish, and no one allowed on the course. The place for arrival and starting will be fixed away from agglomerations, and the severest regulations will be made in order to ensure a successful event. The congratulations of the automobile world are due to the Belgian Club for having taken this wise course, and the result will be greater prominence for their competition.

THE "Auto," in writing of the Paris-Madrid motor-car race, has made an analysis of each of the three great weight categories in the motor-car section. This tends to show that weight tells, and that the heavy car is the most reliable vehicle of the three classes, for more than half of the cars that arrived in Bordeaux belonged to this class, the numbers being, 52 heavy cars, 26 light cars, 21 voiturettes.



Madame Lockert on 12-h.p. Ader Car at the Fishing Village of Ondarra, Spain.

THE TOURIST SECTION OF THE PARIS-MADRID RACE.

where along the roads. It was an error of judgment, too, this time not quite so pardonable, not to have caused strict police instructions to be issued, ordering all dogs near the line of route to be kept on the chain, and threatening penalties against those who neglected this precaution.

THE result of this neglect was disaster, a disaster which threatened and still threatens, to injure materially the motor-car industry. However, on every side, there seems now a tendency to come back to the logical conclusion, and submit automobile road racing to the proper precautions, which will bring it into line with all other kinds of sporting events. The result will be that this new sport will take its proper place amongst other pastimes, and become recognised all over the world.

THE first signs of the good that will come out of the terrible experiences of Paris-Madrid emanates from Belgium, where the A.C.B. has wisely postponed the "Circuit des Ardennes," which was to be held towards the end of this month. They have not postponed it because they think that it would have led to accident, but they have, in wise, sportsmanlike fashion, postponed it for the simple reason that any further mistake now made would seriously compromise the future of automobile road racing, and

OUT of the fifty-two heavy cars that arrived in Bordeaux, that is to say, that accomplished three-sevenths of the Paris-Madrid course, Mors has the unqualified victory, for not only was the winning car a Mors, which accomplished the distance at the rate of a mile a minute, but the second place also fell to Mors. Out of the fifty-two cars, not less than seven were Mors cars, whilst out of the first nineteen of the fifty-two, Mors counted five places, and the Dolphin car—for the Mors wind-shield makes the car look just like a dolphin—is the victorious vehicle of 1903. Dietrich comes next, with the third place in the whole race, and six cars out of the fifty-two. Panhard and Mercedes divide between them the honour of having the largest number of cars arrived, that is to say, nine of each out of the fifty-two. Panhard takes the fourth place, and he is not as well placed as he has been in races in preceding years. A curious detail with regard to this is that for the first time lubrication has been the trouble, and this, no doubt, was due to the inclined engine, proving once more that the vertical engine is the only one which lubricates successfully under all circumstances. Mercedes takes the 5th, 7th, 11th, and 12th places. Serpollet has the distinction of being the only maker all of whose cars got in. Seven started and seven arrived. The four C.G.V.'s arrived, the first, driven by Voigt, being placed sixth, whilst two out of the

four were touring cars. Three Gobron-Brillies, with their high-powered engines, arrived, and two Pipes.

IN the light car class Louis Renault, of course, was nearly one hour ahead of everybody else, but all the other drivers of Renaults stopped at Couhe-Verac at the bedside of their dying comrade, Marcel Renault. Five Darracqs out of the first ten cars to arrive makes a splendid record. Decauville takes the 3rd and 6th place with the two cars which arrived, whilst a little De Dion-Bouton came in 5th, and another 9th.

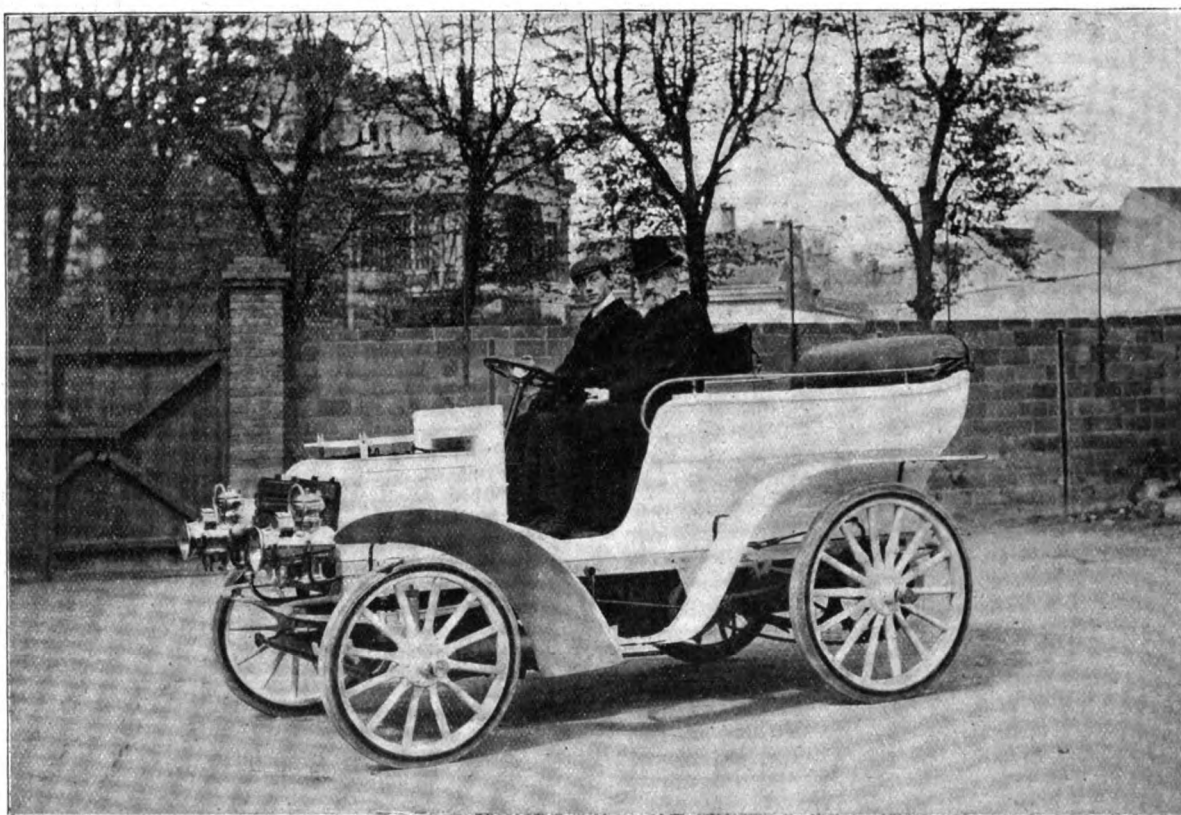
IN the voiturette section, the progress which has been accomplished this year is the most remarkable, for the little four-cylinder Clement accomplished the journey to Bordeaux in 7 hours and 14 minutes, an average speed of nearly 47 miles an hour. The four-cylinder Georges Richard came in 2nd, and shares with Clement the victory of the day; for the 2nd, 4th, and 15th places fell to these little cars, whilst at Angouleme,

in trying to avoid him that Georges Richard met with his accident.

WITH regard to the voiturettes, an interesting story is told, to the great credit of the driver of the Boisse voiturette, No. 226. Having arrived at thirty kilometres from Bordeaux, his accumulators gave out; but, undaunted, he walked five kilometres to the nearest town, sought out a half-discharged accumulator, got back to his car, and finished the race.

THE Belgian Minister of Public Works has informed the A.C.B. that the new road between Ostend and Dunkirk, via Neuport-Furnes and Ypres-Menin, is now open for motor traffic.

ARRANGEMENTS are now well in hand for the International Automobile Congress which is to be held at the A.C.F. Club-house in Paris next week. In view of the accidents in the Paris-Madrid race, however, it has been decided not to hold the



Messrs. Joseph and Edouard Ravel on their 15-h.p. two-cycle Petrol Motor-Car.

[L'Avenir de l'Automobile.]

where the accident happened to Georges Richard, he was right at the head of his class. The Darracq voiturette takes the 3rd place, but only two Darracqs arrived. De Dion takes the 5th place and has three cars to arrive, whilst Ader has the distinction of the greatest number of cars, that is to say, four, to arrive.

REFERRING to the accident mentioned above, which occurred to Georges Richard, it is of all the accidents perhaps the most unfortunate from the point of view of the driver of the car, whose object was to make a good race at the head of his class. Without the slightest trouble, and everything going as merrily as a summer day, with the prize almost within his grasp, Georges Richard had the misfortune to be singled out by a blackguardly brute amongst the spectators who had made a bet that he would touch one of the racing cars as it passed. As the big cars came along his courage failed him, and it was not until the first of the voiturettes came in sight that he screwed his courage to the striking pitch and advanced to win his bet. It was

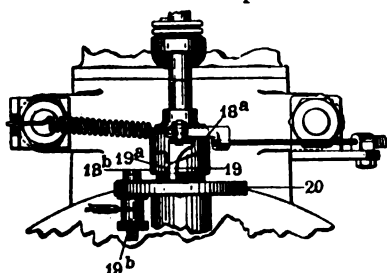
fetes set down in the programme in connection with the Congress, which will be brought to a close by a banquet on the 20th inst.

M. J. RAVEL, a well-known French engineer, has recently been devoting much attention to the question of two-cycle petrol motors, that is to say, an engine in which an explosion takes place at each revolution of the crank shaft instead of every second revolution in the four-cycle engine. As a result of his experiments he has constructed a double-cylinder two-cycle motor and fitted it to the car shown in the accompanying illustration. The engine develops 15-h.p. at a speed of 900 revolutions per minute; the cranks are set at an angle of 180 degrees to each other. There being an explosion at every revolution in each cylinder, there are 1,800 explosions or impulses per minute. He thus claims to get the same result from two cylinders as from a four-cylinder engine of the ordinary type. Not only so, but M. Ravel states that the consumption of petrol is reduced, while the motor shows less tendency to over-heat.

MOTOR-CYCLING NEWS.

TO-DAY (Saturday) the Wolverhampton Motor-Cycle Club will hold a run to Worcester, and the Glasgow Club one to Stewarston.

A NOVEL feature in the 1903 Ormonde motor-bicycle is the method adopted of lifting the exhaust valve. Referring to the accompanying illustration, instead of the usual rocking lever, a rotating circular piece, 18a, takes a seating on a similar shaped washer, 18b, having cut in its upper surface an inclined plane in which the top piece correspondingly fits. Attached to this is a short arm to which a Bowden wire is fitted, and also a check spring. This short arm works on a pivot on a lever 19 formed



in one with the piece 18a. On the arm being actuated by the Bowden wire the top piece 18a slides up the inclined plane and holds the valve open. In normal position, the valve shut, electrical contact is made between the lever 19 and the terminal 19a, which is attached to an insulated plate, 20. The first movement of the twist handle breaks the electrical circuit, the further movement lifting the exhaust valve, the company preferring this compound arrangement to that in which the current is left on whilst the valve is lifted.

THE Inland Revenue authorities at Bristol are very active with regard to the licensing of motor-cycles, and have just taken action against Mr. F. G. Rowe for keeping such a machine without a licence. At the police-court hearing Mr. B. Hawkins, from the Revenue Department, London, appeared on behalf of the Commissioners of Inland Revenue, stating that the carriage the defendant was charged with keeping without a licence was a motor-bicycle, and they said it came within the Acts relating to the licensing of carriages on two grounds. First, it was included in the general charge of duty upon carriages; and, secondly, even if that were not sufficient to bring it in, it would be brought in by the Locomotives on the Highways Act of 1896, under which these vehicles might now be used. The Act under which the prosecution was taken was 51 Vict, Ch. 8, Section 4, and the carriage was defined in Sub Section 3 of the Act. The vehicle came within those "propelled by mechanical power" or "any other carriage." He quoted the case of Cannan v. the Earl of Abingdon, in 1900. The defendant said he did not own a motor-bicycle, but traded in them. The manufactory was at Birmingham, and he was assistant manager at the Bristol depot. He had to sell cycles to clients, and if anything went wrong he had to ride the cycles for the clients to see what was wrong. They rode cycles to the purchasers' homes, and machines were also ridden to see if they met with their clients' approbation. He did not keep a special machine for his own use, and used motor-cycles in the way he had described only. He thought the dealers would be exempt in the same way as carriage builders. The magistrates said the defendant had not proved the facts he mentioned, but had merely made an assertion. He would be fined 20s. and costs.

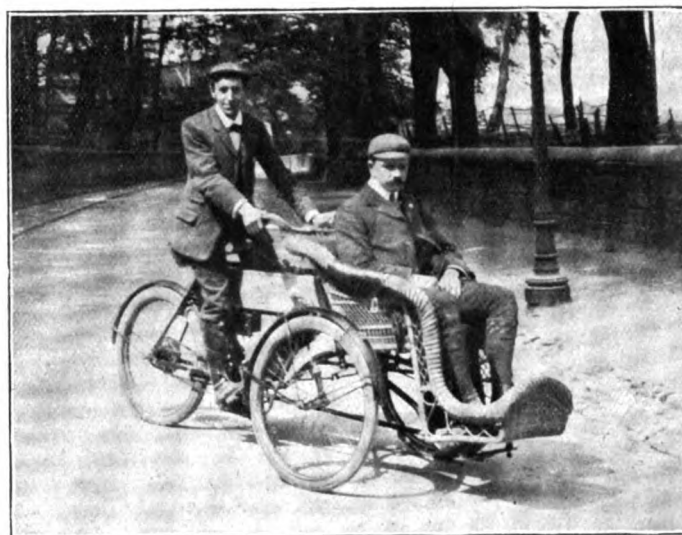
At Cheltenham, last week, Bert Yates, on a 2½-h.p. Humber, rode a mile from a standing start in 1 minute 55 2-5 seconds and with a flying start in 1 minute 46 2-5 seconds, the latter being a record for the track. E. H. Arnott also made an attempt on the Paddington track to make a 200 miles non-stop run on the Werner motor-bicycle used by him in the Paris-Madrid race. Arnott, however, had to retire after covering about 40 miles.

THE subject of the conveyance of motor-cycles by rail is now under the consideration of a committee of the Auto-Cycle Club in conjunction with Mr. T. H. Woollen.

THE Metropole Cycling Club and the New York Motor-Cycle Club are organising a motor-bicycle contest from New York to Boston and back, a distance of 472 miles, for July 3rd, 4th, and 5th next. The day's runs will be, respectively, 161, 150, and 161 miles. The objects of the contest are to demonstrate not only the reliability of motor-bicycles, but "the endurance and judgment and the ability and skilfulness of riders in their operation and care." The latter will be developed by the rule which makes it incumbent on the riders to make all necessary repairs on the road, and not in the control at night. The machines will not be permitted to be touched after the arrival of contestants at the night's destination. The contest will be open to motor-bicycles only, classified according to power. By the term motor-bicycle it is understood that they be equipped with cranks and pedals, and in condition to be driven by pedal propulsion if occasion requires. Each contestant may pedal at any time without penalty. The machines entered will be classed as follows: Class A, motors under 2½ horse-power; Class B, motors of 2½ horse-power and over.

A COPY of the prospectus issued by the Motor-Cycling Club has been sent us. It sets forth the aims and special features of the club, and should prove a useful production to intending members, who will be supplied with a copy on application to the Secretary, Mr. G. E. Roberts, 7, Fieldhouse Road, Hyde Farm, Balham, S.W.

THE accompanying illustration depicts Mr. J. Edge, the captain of the Liverpool Motor-Cycle Club, ready to take a friend for a run on a Humber motor-tandem. Mr. Edge, who is one

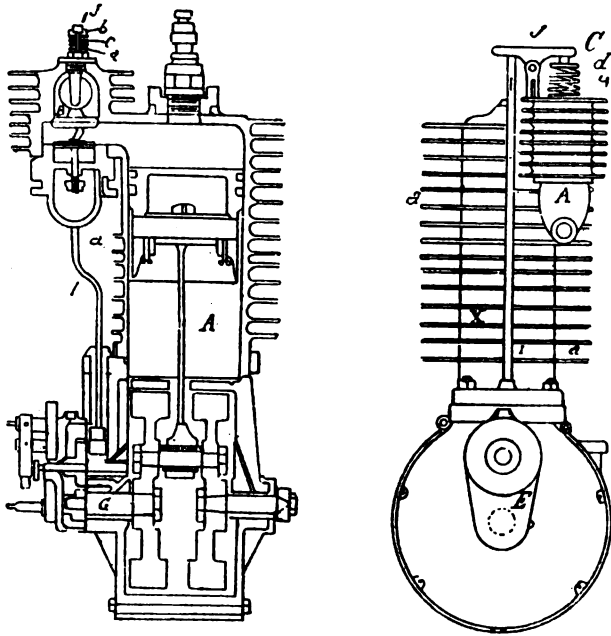


of the most enthusiastic motor-cyclists in the Liverpool district, writes: "I am always trying motors, either for fun and experience or for some of the club members, and I think I have ridden most of the makes on the market. I have just got a Bat down for my own use. Will let you know how it goes on later. Any information I can supply is at the service of your readers."

MR. EDGE also informs us that his club, finding that there are sufficient Humber motor-bicycles among its members to enable it to take advantage of the Humber Company's offer of a silver cup, has decided to apply for one, and to hold towards the end of the present month a hill climb, the first prize being a gold club badge and the cup (to be held for one year), and the second and third silver badges. Motors up to and including 2-h.p. to be allowed to pedal; over 2-h.p. not allowed to pedal. The course selected is the celebrated Parbold Hill, near Ormskirk.

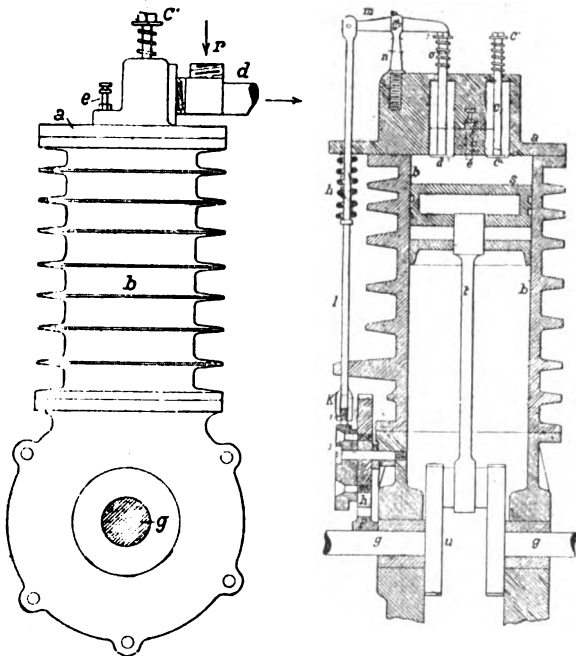
SOME NEW PETROLEUM-SPIRIT MOTORS.

AMONG the many small petrol-motors recently introduced in France is that of Messrs. Monnier, May, and Co., of Puteaux, and illustrated in Figs. 1 and 2. One of the special points about this motor is the cylinder, which is cast in



Figs. 1 and 2.

one piece with the head. The position of the exhaust valve *B* is rather unusual, being above the inlet valve. This arrangement is claimed to possess the advantage of not heating the head, and also facilitates the exhaust, being close up to the combustion



Figs. 3 and 4.

chamber. The exhaust valve is opened by a cam *E*, which lifts a rod *I*, linked to a pivoted lever *J*, engaging the valve stem *C*. When the valve is opened by the lever *C*, the spring *D* is compressed, the closing of the valve, when the pressure on the lever is removed, being effected by this spring resuming its

normal position. The inlet valve *D* is immediately below the exhaust, and is so arranged that it can be readily withdrawn.

Figs. 3 and 4 represent another new type of petroleum spirit engine recently devised by two French engineers, Messrs. Lucas and Villain. The arrangement of the valves and the plug directly on the cylinder-head necessitates but a single joint in the cylinder. The admission-valve *c* opens on the intake stroke of the piston and is reseated by means of the spring *c'*. The exhaust valve is operated by a pinion *f*, secured to the motor-shaft *g*, meshing with a gear *h*, the sizes of pinion and gear being in the ratio of 1 to 2. The gear is provided with a cam *i*, with the peripheral surface of which a friction-roller *j* is always in contact. The roller is mounted on a cap *k* on a rod *l*, operatively connected with a lever *m* fulcrumed on a support *n*, to actuate the exhaust-valve stem. The exhaust-valve, like the admission-valve, is reseated by means of a coiled spring *o*, and a similar spring forces the roller *j* constantly into engagement with the cam *i*. The explosive mixture of air and gas is led from the carburettor by means of the pipe *r*, the sparking plug being located at *e*.

THE REQUIREMENTS OF A TOURING CAR.

THE touring car, as its name implies, is a vehicle specially designed for country work, but how many of the touring cars now offered to the public as such fairly satisfy the special demands made on such a car as compared with a vehicle for short trips and for town use only? When a tour is made in an automobile the daily trips are longer and the average speed is generally higher than in ordinary pleasure runs, and to avoid any discomfort of the tourists the seats must therefore be particularly roomy and comfortably upholstered, and special means must be provided for protection from the inclemencies of the weather, mud thrown off by the wheels, etc. Unusual road difficulties are frequently encountered in touring, and a touring car must be of relatively higher power than a vehicle for town use. The majority of the better-known touring cars leave nothing to be desired as regards power so long as the engines are in good order. Where the present touring car is more or less defective is that it does not provide room for the many things usually carried along on a tour. With many automobilists an extra tyre or outer cover is one of the most essential extra parts to be carried, and at present the only manner of carrying the tyre is to strap it either to the front or rear of the body, where it is rather too conspicuous to suit the taste of the aesthetic user.

In France numbers of touring cars have been built with a limousine body, the top of which is surrounded with an iron railing to serve for carrying extra tyres and luggage. This arrangement provides a fairly suitable and inconspicuous place for the tyres. In cars with ordinary tonneau or two-seated body the best place for the tyres undoubtedly is beneath the floor of the body in the rear, provided that space is not occupied by some other part, as, for instance, the silencer or the water tank. The "Horseless Age" makes a suggestion which has already been adopted by one or two concerns in this country, viz., that a drawer should be provided beneath the floor of the car to accommodate an outer cover and a number of spare tubes. If a rear step should interfere with drawing it out, the tyres could be placed in a box of drawer form hinged to the body, the rear end of which could be let down to remove the contents.

Owing to the impossibility of carrying dress cases, etc., on some cars, it is not uncommon for tourists to send a trunk along by rail, but it is hardly necessary to say that this method is far from being ideal. The luggage question for touring cars can be solved in two different ways—viz., the body of the vehicle may be provided with compartments for storing the various articles it is desired to carry along, or provision may be made for strapping a neatly-fitting trunk, readily removable. The latter would really seem to be the preferable plan, as it would allow of the trunk being carried into hotels at stopping places and would leave all the room of body compartments for extra parts and tools, which must be carried in considerable number on long trips.

HERE AND THERE.

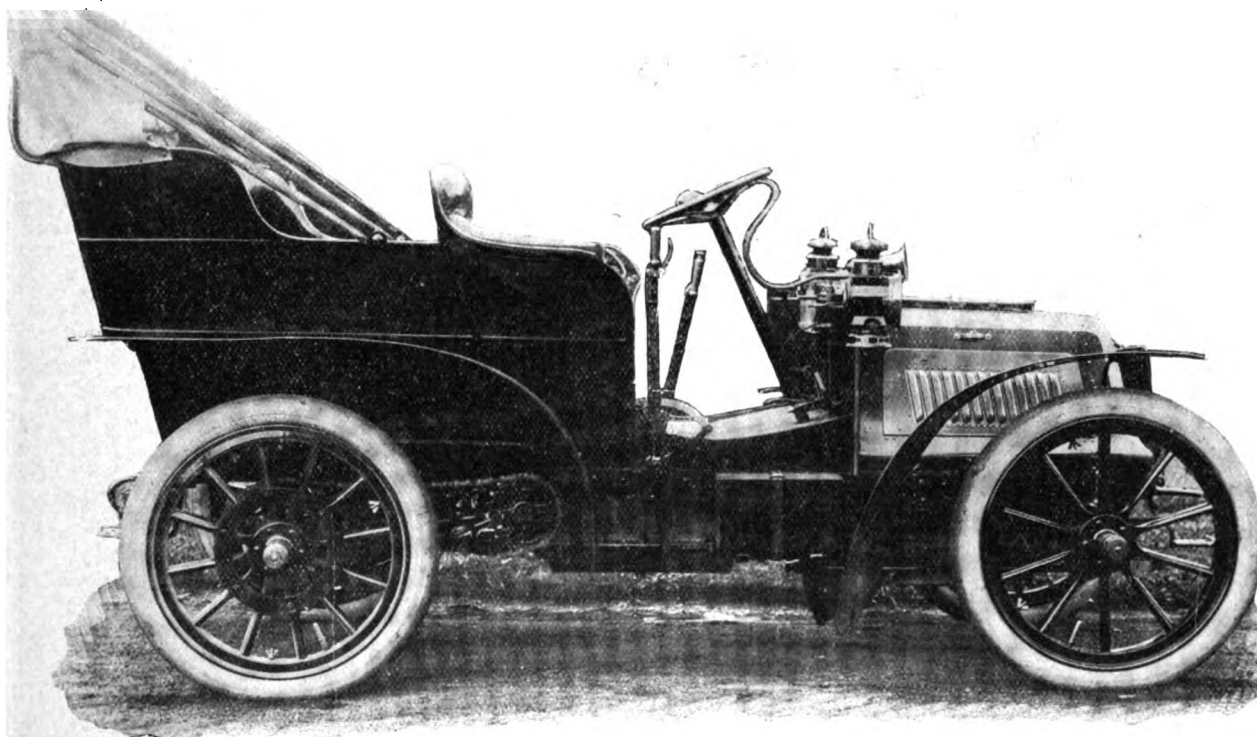
A MOTOR-CAR service between Dromara and Ballynahinch, Co. Down, is being advocated in the Irish journals.

For the first time in their annual design competition, the Coach Makers' Company are offering prizes for drawings of the motor-car.

A CORRESPONDENT, reverting to Sir R. Payne-Gallwey's suggestion for shooting motorists, proposes that the shots should be fired at the tyres, not at the drivers.

A MOTOR-WAGGON belonging to the Tadcaster Tower Brewery Company, of Wakefield, ran into a wall, and, crashing through it, fell bodily into a field some six feet below the road.

THE accompanying illustration shows one of the Star latest four-cylinder 10-h.p. light cars, fitted with collapsible canopy head. The cylinders are $3\frac{1}{2}$ -inch bore by $4\frac{1}{2}$ -inch stroke; automatic inlet valves are used, while a governor acting on the carburettor controls the speed of the engine. Four speeds forward, and a reverse actuated by one lever, are provided. The car is both silent



The "Star" 10-h.p. Four-Cylinder Car.

and fast, the speed ranging to well over forty miles an hour. The weight of the car comes out just under 17 cwt. The canopy head, which in the illustration is shown closed, affords an excellent protection against dust. Altogether the vehicle is one which does credit to its builders, the Star Engineering Company.

THE Edinburgh Motor-Omnibus Syndicate, Ltd., has been registered with a capital of £3,000 and with offices at 63, Frederick Street, Edinburgh, to carry on the business of proprietors of motor-vehicles of all kinds.

MR. A. W. RICHARDSON, of the Skew Bridge Works, Patricroft, Manchester, sends us particulars of a new slow-speed, direct-acting, high-pressure boiler-feed pump he has lately introduced for use on steam-cars and heavy motor-wagons. The whole of the working parts are enclosed, the pump being arranged for fixing to the framing, bunker, tank, etc. The whole of the water end and the steam valve end is constructed of brass, whilst the rods are of manganese bronze. Each pump is made complete with steam regulating valve, lubricator, drain cock, and union tail end connectors for steam and water pipes.

THE Eastbourne authorities are inviting tenders for the supply of Clarkson motor-buses with outside seats.

At the Cart Horse Parade Sir John Willoughby made a fierce oratorical onslaught on "those Juggernauts called motor-cars."

A COMMITTEE of the Scottish Chamber of Agriculture is to be formed to make suggestions with regard to the future of automobilism.

THE Bradford Motor-Car Company have lately been prominent in their district, having supplied motor-cars in connection with a local wedding, and also a walking match from Bradford to York.

On the 2nd inst. Mr. J. T. Overton, of the Motor Volunteer Corps, drove the Inspector-General of Fortifications to Hounslow and Windsor, on inspection duty. On the same day Mr. E. H. Clift drove General Lord Grenfell, Commanding 4th Army Corps, and Brigadier-General Eyre Crabbe to Tilbury, in connection with night operations on land and water. Further enrolment took place at headquarters on Tuesday last for the London command of the Motor Volunteer Corps.

TO-DAY (Saturday) the Wolverhampton Automobile Club will have a run to the Rudyard Hotel, Rudyard, under the captaincy of Mr. W. Baker.

THAT the motor-car is beginning to attract attention in Japan is evidenced by the receipt of a catalogue of motor-cars from Messrs. Bruhl Freres, of Yokohama. The list is printed in the Japanese language, and 3,000 copies have been distributed. About twenty-five types of vehicles—steam, petrol, and electric—of American, French, and English construction are illustrated. Altogether there are sixty illustrations, the majority being of American cars.

FROM Phillips, Ormonde and Co., Melbourne, we learn that Messrs. Thomson and Day, of Adelaide, recently made a successful trip between Adelaide and Melbourne in a De Dion voiturette. The overland route has been frequently regarded as impracticable for vehicle traffic owing to the ninety miles of desert between Meningie and Kingston, but it has surprised many to learn that, at a cost of only 46s. for fuel, the distance of 596 miles between the two capitals was covered in thirty-eight hours of riding time.

A VERY useful tyre putty has just been brought out by the Continental Caoutchouc and Gutta Percha Co., which has already met with much approval on the Continent. For the temporary repair of motor tyre covers this putty offers many advantages, especially when the hole in the cover is a large one. For repairing according to the new method, the cover is detached and the inner tube repaired in the usual manner. The cover plaster is then placed on the inside of the cover over the damaged place, with both ends overlapping the edges of the cover, as shown in Fig. 1. The plaster is solutioned, and will

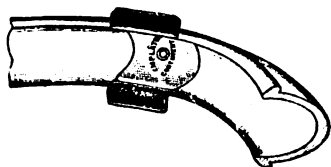


Fig. 1.

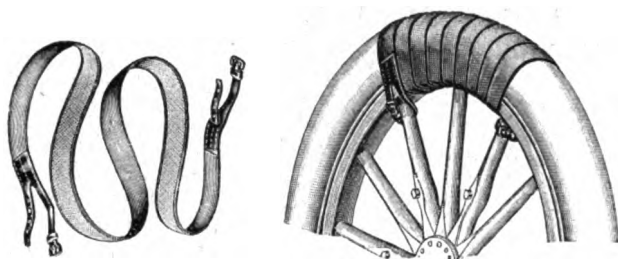


Fig. 2.

Fig. 3.

stick on the inside of the cover. The tyre is then put on the rim again, care being taken to have both ends of the plaster jambed between the edge of the tyre and the rim. The tyre is then inflated to a pressure of about 15 lbs. per square inch, and the "Continental" tyre putty, Fig. 2, buckled securely to a spoke, and rolled scale shape round the damaged spot. The other end of the putty is buckled to another spoke, Fig. 3, and thereupon the tyre may be inflated to the full extent, and is ready for use.

ACCORDING to the annual report of the Patent Office, there was a great increase last year in the number of applications for automobile patents.

SOME of the warehouses of the Dublin Port and Docks Board are being made available for the accommodation of motor-cars during the Irish Fortnight.

A PUBLIC motor-car service has just been started between Nuremburg and Heroldsberg, Bavaria. The vehicles used are of the Maurer-Union type, with seating capacity for eleven persons.

THE hill climbing competition announced to be held to-day (Saturday) by the Midland Automobile Club has been postponed until Saturday, July 25th.

MESSRS. FRANK F. WELLINGTON, Limited, are about to open their new showrooms at 151 and 153, Wardour Street, Oxford Street, W., their lease at 36, St. George's Square, Regent's Park, having expired. They will have cars of the Brooke, Panhard, Clement, and other well-known makes in stock.

THE Corporation of Maidenhead have made arrangements for charging the batteries of electric motor-cars at the power station in Braywick Road, about three minutes' run from the main Bath Road. A charge of 2s. is made for connection and attention, and 3d. per unit for electricity supplied by meter.

THE C.T.C. has decided by vote that automobilists shall not be admitted to its membership. That is to say, that unless the applicant can sign the declaration that he or she can ride a pedalled cycle of some sort he or she is not eligible. It is not, however, a necessary qualification that the applicant is actively pursuing the pastime. Automobilists who have been cyclists, and who could ride bicycles if they had them, appear to be eligible to participate in all the benefits the club offers.

MR. W. A. VINCENT has established a garage at Cauldon Bridge, Stoke-on-Trent.

A REGULAR motor-car service has been started between Mafeking and Johannesburg.

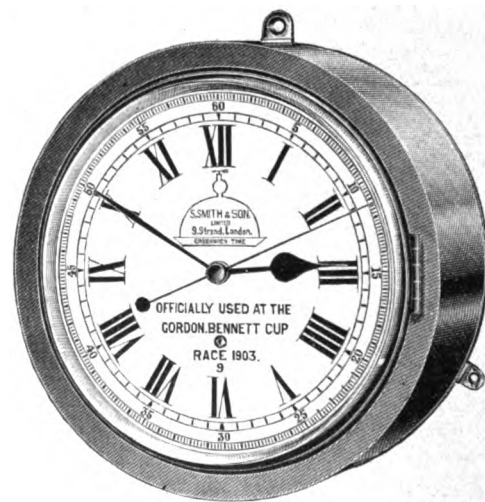
THE new motor fire-engine for the Liverpool brigade passed through Coventry the other day, and Captain Armishaw, of the local fire brigade, rode upon it as far as Lichfield.

RECENT registrations in Guernsey include the Continental Automobile Company, Limited, with a capital of £20,000, in £1 preference shares and £40,000 in £1 ordinary shares, and the F.I.A.T. Motor Agency, Limited, with a capital of £40,000 in £1 shares.

"ON TOUR WITH A TRAILER" is the title of a pamphlet just received from Messrs. Mills and Fulford, of Coventry. It gives an interesting account of a trip in which one of their trailers formed an apparently indispensable accessory, and should do something to convince motor cyclists of the practicability of their specialities.

As a result of an order recently issued by the Canadian customs officials, no more American automobilists will be permitted to go into Canada with their cars without paying full duty on the same. The duty is 25 per cent. of the assessed valuation of the car, and this amount will be collected each time a machine is taken into Canada. The order has been issued, it is said, because American manufacturers made a practice of sending automobiles into Canada ostensibly on pleasure trips, and then selling the vehicles there, thus avoiding the payment of duty. Many motorists in Buffalo have summer residences in Canada, and this order will prevent them from driving to and from them. An endeavour will be made to arrange whereby the short trips into Canada, which have been such sources of pleasure to motorists, may not be interrupted this summer, or at least, that persons owning summer residences in the Dominion may be permitted to go to and from them without paying duty.

THE Gordon Bennett clock, as shown in the accompanying illustration, is one that Messrs. S. Smith and Son have specially made for the race. The case is made of brass, the diameter 12 in. and the dial 10 in.; the three eyes at the back of case are for fixing. The movement is constructed so as withstand vibration, with a lever escapement so that the clock will go in any position. The dial is distinctly and accurately marked, the



important feature of the clock being the addition of the centre seconds hand. These clocks are to be used at the entrances and exits of the controls, and by having the centre seconds the time-keeper can take times to one-fifth of a second; they have been carefully adjusted; and of the large number ordered officially nearly all have been bespoke by members of the Automobile Club.

CORRESPONDENCE.

ECONOMICAL MOTORING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to your paragraph "Economical Motoring," I can endorse Major Matson's views entirely. I have been running a 7-h.p. Belle car for the last six months, in all weathers, and have found it quite satisfactory in every way. The total cost of everything spent on car was £6 1s. 8d., and the mileage run 1,843, which works out to 3d. per mile. I had solid tyres, belt for first drive from engine to gear box, and engine set at an angle of 45°. I never was stopped on the road for any troubles, and the car with four people could do twenty miles an hour on a main road, although my usual pace was twelve miles an hour on the bad bye-roads. The belt was never the slightest trouble, and I did nothing but apply castor oil occasionally. I always drove myself, and a gardener washed the car when necessary.—Yours truly,

H. J. BATH.

INFORMATION WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—"Faber" wants to know if I always take a slow train to town in order to be able to enjoy the sight of the country? No! when I go to town by rail my object is to go quickly, and so I choose a fast train. The railroad is for people who need to move speedily. It is the very place that has been specially constructed for speed. The public highways are not for—and have not been constructed for—fast motors.

If only the motorist would allow himself plenty of time to go to the station (which he could easily do if he liked, though he may pretend he

and another thing to be noted is that the excessive cost—initial and upkeep—of such cars is prohibitive to nearly all for pleasure purposes, and for the commercial world cars built for anything like this speed would be detrimental to the goods conveyed, the dividends of the concerns, and the community at large.

We also observe in your "Continental Notes" that some automobilists intend to prosecute dog-owners for allowing their dogs even to run behind a car. We should rather like to know whether this is intended seriously, or if selected from a comic paper, because, if it is intended to represent the actual state of affairs, we should like to know why dogs should have a monopoly of this sort, when there are so many other candidates; we presume that cats, pigs, fowls, and other members of the farmyard are allowed the same licence in Austria as in this country, and we are prepared to state that any member of the canine tribe who cares to try conclusions with one of our cars is quite welcome to do so; we have no doubt as to the result. The next thing we are likely to hear, judging from the present state of affairs, is that the general public will be chained up during the Gordon Bennett race.

Trusting that other manufacturers will give their views and experiences.—Yours truly,

JAMES RICKARD AND CO.

A SUGGESTION RE TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you kindly allow me to ask why it is that manufacturers of motor tyres do not keep their tyres for, say, a week at least, stretched on the size wheels they are intended for? To have to struggle with new tyres is a great trouble, and no one would object to tyres which had been stretched sufficiently to at least fit the wheels they are supposed to be provided for. Sometimes hours are spent trying to get new tyres on, and damage is often caused to tubes.



The Circuit National Belge—The Start from Brussels.

[La Presse Automobile.]

forgets), he would then bring a useful vehicle into great favour, and save himself being hated by all the country side through which he passes.—Yours truly,

VILLIERS LUCAS.

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We have perused with much interest "Automan's" notes on the Paris-Madrid race, and as manufacturers, thoroughly interested in the future of the motor industry, we must confess that we do not agree with his views. The easy manner in which your article accounts for so many fatal accidents is somewhat inhuman—at least, that is our humble opinion. It is not at all surprising that so many accidents did occur, but rather that they were so few, when we see and hear of 90-h.p. cars being constructed to carry two persons; every engineer knows that 4-h.p. is quite sufficient to carry two persons at the legal limit. You say "without road racing the automobile industry of to-day could barely be said to exist"; we contend that road racing does not in any way tend to further the industry, but, on the other hand, exhibitions and utility trials are extremely beneficial, both to the manufacturer and the public. What is really wanted is a sound, reliable machine, not these monstrosities. From a manufacturer's point of view it is absurd to suggest that these high-powered machines can do the trade any real good, because it must be apparent to all that only a few "cranks" could be found willing to drive cars of such high power and speed,

Also will you kindly allow me to ask, why is the motor trade, in appearance at least, so fearfully democratic? In this matter I do not refer so much to manufacturers as to agents, and especially repairers. The latter always give one the idea that "Jack is a good deal better than his master." I do not think perhaps that they mean to be so, but many of these men speak to gentlemen in a way that formerly no carriage-builder would have dreamt of speaking. Is it any wonder, then, that many gentlemen say they will not be mixed up in such a game? They have more respect as private gentlemen, and are probably tempted to put their heel on it.—Yours faithfully,

A. M. C.

PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I understand that petrol of a specific gravity of .700 or even greater density is now being put on the market, and that is as suitable for use in the ordinary motor as that of .680. In this case the densimeter will be of no use to ascertain if a sample is suitable or no. Could you kindly let me know some rough and easy method of ascertaining, when out on the road, if a sample of oil is of suitable quality to use in the ordinary pattern motor, and also a method by which a person with a fair knowledge of chemistry might test it at home? At what temperature does ordinary kerosine oil boil? If the carburettor were kept warm—say at 180°—is there any reason why it should not be used with an ordinary motor; and what pattern carburettor would be the most suitable?—Yours truly,

C. J. S. B.

THE LOHNER-PORSCHE COMBINATION PETROL ELECTRIC CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I recently had the pleasure of conversing with the owner of one of the above-mentioned carriages, and was informed by him that the combination is most delightful from a driving standpoint in many ways. In the first place, the motion is very smooth and pleasant, and may be compared to the gliding of a boat through the water. There is also a complete absence of jar or noise in changing speeds. This is not surprising, when one considers that there are no speeds to change—that is, in the generally accepted sense of the word. All that is done is to admit more current from the dynamo to the electric motors, of which there are two, these being built up in the hubs of the front wheels. The forward drive is described as one of the nicest features of the combination. It is practically impossible for the car to sideslip, and, in addition, there is no necessity for a differential gear; on the other hand, I understand that the motors are too small to permit of a sufficient amount of power being applied to them to start the car on a steep hill. This is rather a serious drawback, but one which no doubt can be overcome. Then, again, the weight of the dynamo is very considerable, as I was given to understand that this is approximately $4\frac{1}{2}$ cwt., which is very much more than the weight of the gearing, chains, and differential of the average car. Not the least source of trouble, too, is the number of electrical connections in the car, the total being something between 110 and 130. A casual inspection of these seemed to show that, like the average electrical connection most of us are familiar with, they are not too well made. On asking my friend as to how long these connections lasted, he sadly shook his head, and remarked, "I replace one at least about every twenty miles." The dynamo brushes, too, have to be replaced about every 100 miles. The drive is controlled by a lever situated immediately under the steering wheel, which lever governs six forward speeds and reverse motion, and one electric brake; in addition, there is a foot-applied electric brake, which cuts out the current from the dynamo at the moment of application, and also the usual hand-applied brakes acting on the rear wheels. The petrol motor is a special size Mercedes type, giving about 26-h.p., with fan-cooled honeycomb radiators, throttle governing, etc.

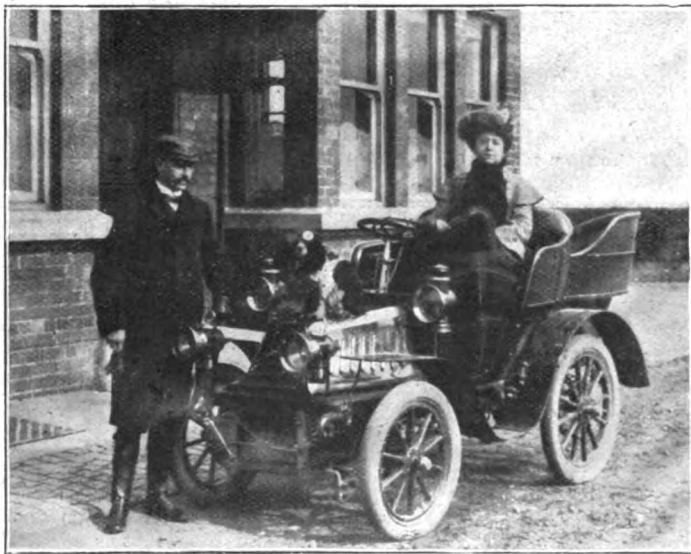
While there is no doubt that as an adjunct to a stud of cars these vehicles are both interesting and instructive, I understand that they are not fast, or at least not exceptionally so, nor are they particularly good hill-climbers, this being probably on account of the excessive weight necessary for the purpose of generating the current, and the comparatively small size of the electric motors used. The car has undoubtedly a charm of its own, but appears to entail a considerable amount of work to keep it running satisfactorily.—Yours truly,

G. B. P.

A CANINE MECHANICIAN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Thinking it may interest the readers of your *Journal*, I enclose photo of my new 10-h.p. Cottureau car, showing my canine mechanician,



"Jack," seated on the bonnet, fully begoggled, and quite oblivious to the roaring of the engine underneath him. He is the best remedy I know of for keeping "hands off," and inquisitive people at a distance when the car is stationary, and I advise all car-owners to train a small, sharp dog for this purpose. The animal is also a source of amusement to the passengers, and relieves the monotony of a long ride.—Yours truly,

"DRESDEN CHINA."

LIGHTS AT LEVEL CROSSINGS.

IN the Elgin Small Debt Court recently, before Sheriff Webster, Arthur Whaley sued the Highland Railway Company for £12 for damages to his motor-cycle through coming against a gate at a level crossing, owing, it was alleged, to the lights of the gate having gone out. It appeared that the plaintiff and another motor-cyclist were riding on motor-cycles on their way from Nairn to Forres late on the evening of March 13th, and the plaintiff, who was unacquainted with the roads, took a wrong turning. At a short distance from the main road he came against the gate, with the result that the front part and engine of the cycle were seriously injured. The cost of repairing amounted to more than the sum sued for. Neither of the riders thought that the light would have gone out by the force of the collision, but both of them admitted that there was a good acetylene lamp on their machine. Evidence was given for the defence to the effect that the lights were burning within five minutes of the accident. The Sheriff said there was a conflict of evidence, but he had come to the conclusion that the lights had gone out, and he gave decree for £12 and expenses.

POLICE TRAPS.

BETWEEN Wymondham and Hethersett there is a measured distance. A QUARTER-MILE stretch on the road between Dorchester and Shillingford is used by the police for trapping motorists.

A TRIO of motorists have just been trapped on the road leading into Winchester, and care should be taken when within ten miles of King Alfred's city.

ON the Bristol road, at Northfield (Birmingham), the police are displaying quite an enthusiasm for catching motorists.

SERGEANT TUCKWELL, of the Solihull (Birmingham) police, is proving a worthy imitator of his Surrey *confreres*, and at Elmdon bagged a motoring quintette the other day.

IN connection with the meet of the Norfolk Automobile Club at Sheringham, the police laid traps on the road between Aylsham and Cromer, but they were outwitted.

MOTORISTS touring in Yorkshire are warned as to police traps all over the county, and, besides those previously given, the Yorkshire Club inform us of the following in active operation:—

Between 9th and 10th mile from Leeds, on Selby road, there are two police traps of $\frac{1}{2}$ mile and $\frac{1}{4}$ mile each on a down grade, and to stop a car which does not intend pulling up, there a police driven horse and trap is placed across the road. The police in charge have an elaborate book of times.

On the same road, between 10th and 11th mile, there is a measured $\frac{1}{4}$ mile on the down hill past the Boot and Shoe public-house.

Nearer Leeds, and between the Gaping Goose Inn and Garforth Bridge, are two more measured distances.

Also between Addingham and Bolton Abbey the whole of the distance is measured out, and the police work different sections.

There is another measured distance from Settle, viz., from the Lych Gate of Settle Church and the River Bridge.

A POLICE trap is now generally set up on Sundays on the road running into Purley from Beddington. This road is called Plough Lane, and runs from the Plough Inn, Beddington, to Purley Corner. Five policemen were stationed on the hill running down into Purley on Sunday last.

A POLICE trap was carefully laid on Sunday morning at Aylesbury, no fewer than seven policemen being requisitioned. The trap is on the main road from Tring to Aylesbury. It is on a gentle decline about 300 yards from the commencement of Aylesbury and finishes at Hazell's Printing Works, where the unwary motorist is pounced upon. The other half of the trap begins at the Vale Cricket Ground, and finishes at the same corner of Hazell's Printing Works. Other traps are being laid at other entrances to the town, so motorists had better keep well within the legal limit on entering and leaving Aylesbury.

IN the Leeds police-court, the police have explained the methods they adopt to catch motorists in the Headingley district. When a motorist is seen coming at what is considered an excessive speed, an officer at the opposite end of the measured distance drops a paper, to indicate that his end of the furlong has been reached. The officer at the other end thereupon sets his stop-watch going, and as soon as the supposed offender has passed him he stops it. Then he gives a signal to a third officer farther along the road, who stops the driver.

THERE is a police trap on the road between the top of Godstone Hill and Caterham. The police have a measured distance, and the time is taken by an officer stationed about 300 yards off the road on a hill to the left of the road, i.e., going towards Caterham.

THERE is also a trap on the Carshalton Road between Sutton and Carshalton, starting at the railway bridge on the top of the hill and finishing by the convent wall; there were several motorists caught there on Sunday. Mr. Norman A. Letts was able to warn several, and thus saved them from being stopped.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED.	RESULT.
Belfast	*W. J. Forsythe, Belfast	—	20s., etc.
"	E. Tacknely (driver to Messrs. Robertson, Ledlie, and Ferguson)	—	20s., etc.
Todmorden ..	F. Karno	20 m. p. h.	£10, etc.
Leeds	N. Bayliss, Wolverhampton	17 m. p. h.	Adj'd.
Sedburgh	A. Braithwaite, Sedburgh	20 m. p. h.	£1, etc.
Wareham	F. Edwards, Salisbury	30 m. p. h.	£1, etc.
Winchester ..	W. Neave, Fordingbridge	22 m. p. h.	£3, etc.
"	L. Savory, Westminster	24 m. p. h.	£10, etc.
"	E. Bouzerot (driver to Hon. Evelyn Ashley)	—	£3, etc.
Chertsey	G. Pratt, Streatham	—	10s., etc.
"	R. D'ouley Carte, Weybridge	—	£1, etc.
"	F. Wiseman	—	£1, etc.
"	J. O. Hunt, Addlestone	—	£1, etc.
Hove	D. M. Wiegell, Long Acre	32 m. p. h.	Adjourned
"	*C. M. Karminski, London	28 m. p. h.	20s., etc.
"	T. F. Hesketh, Regent's Park	—	£5, etc.
"	*H. White, Peckham	25 m. p. h.	£1.
Greenock	J. Campbell, Greenock	20 m. p. h.	£2, etc.
Knaresboro' ..	H. Anderson, London	30 m. p. h.	£2, etc.
Shoreham	A. Morris	—	£5 7s.
"	F. B. Summers	—	£10, etc.
Braunton	R. T. Cook, Barnstaple	—	Dismissed
Weymouth	F. Martin	—	10s., etc.
"	J. H. de Mattos	—	£3, etc.
Aldershot	Sir W. B. Barttelot	—	£10, etc.
Romford	H. V. Holden, Wokingham	22 m. p. h.	£5 5s.
"	W. B. Avery, Windsor	—	£5 5s.
Lancaster	T. Scarisbrick, Mayor of Southport	—	5s., etc.
Dorking	Sir A. Cooper, Kingston	—	£3, etc.
Altrincham	W. T. Hague, Oldham	—	£5, etc.
Dumbarton	A. J. Page	—	£4, etc.
Newcastle	*A. Tapp	—	20s., etc.
York	*T. Euclid	—	£2, etc.
Rutland	*C. Jervis	—	£1.
Hemel	*A. H. Sharp, Leighton Buzzard	15 m. p. h.	£1, etc.
Hempstead	T. Newton, Newcastle	20 m. p. h.	40s., etc.
Newcastle	*D. Richardson	—	£1 15s. 6d.
Dolgelley	O. Brooks, Leeds	34 m. p. h.	40s., etc.
Wetherby	T. Wardell, Glasgow	22½ m. p. h.	£2, etc.
Skipton	J. Hall, Oldham	17 m. p. h.	£5, etc.
Thornham	G. W. Hodge, Blackpool	—	£5, etc.
Settle	W. Gutmann, London	25 m. p. h.	£4.
"	B. Bell, Glasgow	—	£3.
"	E. Hartensfield, Birn'ham	16 m. p. h.	£1, etc.
"	J. A. Peacock	—	30s., etc.
Gosport	*Lt. A. Warstell	20 m. p. h.	10s., etc.
Wokingham	*Rev. Shaw, Wycombe	—	£2, etc.
"	*Rev. R. Oakley, Wycombe	—	£2, etc.
Slough	W. C. Lock	19 m. p. h.	£5.
Colchester	C. Smith, Lowestoft	30 m. p. h.	£5, etc.
Wymondham	H. Egerton, Norwich	28 m. p. h.	25s.
Birmingham ..	A. Bicknell, Coventry	40 m. p. h.	£5, etc.
"	A. Bridge, London	39 m. p. h.	£10, etc.
"	O. Crane, Yardley	30 m. p. h.	£2, etc.
"	J. Pugh, Coventry	30 m. p. h.	£3, etc.
"	P. Martin, Coventry	35 m. p. h.	£2, etc.
"	H. H. Birkett, London	16 m. p. h.	20s., etc.
"	*R. Carter, Saltley	20 m. p. h.	20s., etc.
"	L. Tangye, Birmingham	25 m. p. h.	10s., etc.
"	G. Carnell, London	—	£5, etc.
Tadcaster	*H. K. Hitchcock	—	50s.
Leamington	R. Panter (driver to Capt. Paulett)	—	14s.
Beaconsfield ..	E. de Rodakowski, London	22 m. p. h.	£5.
"	S. Curling, Cookham	21 m. p. h.	£5.
"	A. Stern, Prince's Gate, W.	26 m. p. h.	£5.
Epsom	A. F. King, Marylebone	22 m. p. h.	£2.
Horsham	G. M. Kelson, Earl's Court	21 m. p. h.	£1, etc.
"	J. Henigan, Balham	22 m. p. h.	£2, etc.
Lanark	J. Payne (driver to Mr. Cameron Corbett, M.P.)	—	—
Newbury	J. Le Plain, London	22 m. p. h.	£5, etc.
"	Captain Beckwith, Piccadilly, W.	—	£5, etc.
Wokingham	W. Wethered, Marlow	—	£10.
Rollsby	F. Smith (driver to Mr. H. Harmaworth)	—	£2, etc.

FURIOUS DRIVING CASES.—(Continued.)

York	R. Fenton, Ribchester	20 m. p. h.	10s., etc.
"	T. Tanfield, Beverley	19 m. p. h.	5s., etc.
Cambridge	*R. Lascelles, Trinity College	—	Withdrawn
Lewes	J. Garrett	28 m. p. h.	£5, etc.
Swainsthorpe ..	C. Clarke, Norwich	18 m. p. h.	30s.
Woking	A. Davies, London, W.	—	£3.
"	G. Christian, Bayswater	—	£3.
"	W. Parry	—	Dismissed
"	S. Pescay (driver to Lady Tennant)	22 m. p. h.	£3.
"	C. W. Siebert, Walthamstow	20 m. p. h.	£3.
Guildford	B. Lytton, Stoke Newington	15 m. p. h.	£2.
"	A. Glentworth, Notting Hill	20 m. p. h.	£1.
Skipton	V. Ferrand, Bingley	30 m. p. h.	£2.
Horncastle	*W. A. Dickinson, Woodhall Spa	—	2s. 6d.
Bromley, Kent ..	*N. Brill, Sidcup	18 m. p. h.	15s., etc.
"	*H. J. Knight, Sidcup	18 m. p. h.	15s., etc.
Lancaster	*E. J. Jackson, Lancaster	20 m. p. h.	40s., etc.
Steyning	G. Orham, Burgess Hill	21 m. p. h.	£1 6s.
"	G. Geer, Burgess Hill	21 m. p. h.	£1 6s.
Maidstone	W. G. Christie, Streatham	20 m. p. h.	40s., etc.
Marylebone	F. Hawkins, Notting Hill	24 m. p. h.	£5, etc.
"	F. Whiteley, Bayswater	—	40s., etc.
"	*C. Alderton, Easton	—	20s., etc.
Plymouth	J. Watt, Helensburgh, N.B.	17 m. p. h.	£10, etc.
Winchester	G. R. Shield, Alresford	22 m. p. h.	£5, etc.
"	E. Russell, London	22 m. p. h.	£5, etc.
"	A. Frankel, London	22 m. p. h.	£5, etc.
"	A. E. Major, Reading	22 m. p. h.	£5, etc.
Maidenhead	Captain A. Hill, Bracknell	—	£10.
"	A. Brooks, Aldershot	—	£5.
"	A. H. Terry, Woodstock	—	£5.
"	W. Rhodes, Binfield	—	£6.
Carmarthen	*R. Davies, Llanllwni	—	Dismissed
Carlisle	*J. Fahy, Carlisle	—	Cautioned
Hemel	J. M. Gorham, Westminster	—	£2, etc.
Hempstead	W. Herbert, London	—	10s.
Oxford	C. S. Phillips, Oxford	—	Dismissed
Twyford	L. Robinson, London	24 m. p. h.	£5, etc.
"	E. Headcock (driver to Mr. H. H. Holden)	—	£10, etc.
"	E. Spagnolette, London, W.	19 m. p. h.	£5, etc.
"	W. P. Weihered, Marlow	23 m. p. h.	£5, etc.
"	Mrs. G. Bulteel, Slough	23 m. p. h.	£5, etc.
"	A. H. Adams, London, E.C.	20 m. p. h.	£7, etc.
"	Commander Slater	21 m. p. h.	£5, etc.
"	J. H. Keen, Henley	23 m. p. h.	£5, etc.
"	*J. Wignall, Willesden	16 m. p. h.	£1, etc.
"	J. Robinson, Chelmsford	17 m. p. h.	£7, etc.
"	*J. Ford, Reading	—	£2, etc.
Holybourne	Lady Cantelupe	27 m. p. h.	£1.
Leeds	B. Leuchter, Leeds	20 m. p. h.	40s., etc.
Leeds	H. Bush, Leeds	—	£5.
Halifax	C. Walker, York	18 m. p. h.	20s.

Where no alleged speed is given it is understood to be above the legal limit.

* Motor-Cycle Cases.

Pressure on our space prevents the publication of other cases reported.

At Tadcaster, on Monday, Humphrey K. Hitchcock, an engineer's apprentice, was charged with riding a motor-cycle at excessive speed and with posting bills bearing the words "Police trap" on telegraph poles. He had stuck these bills at each end of the measured distance where the police were in wait for offenders. For exceeding the legal speed the defendant was fined 50s. and costs, the fine for posting the bills being 10s. and costs.

REGINALD PANTER, chauffeur to Captain Paulett, was fined 14s. at Leamington Spa on Tuesday for driving a motor-car to the common danger through the principal thoroughfare of the town.

INCLUDED in the batch of cases heard at Woking was that of W. Parry, of 159, High Holborn, W.C., who was summoned in respect of a motor-bicycle, driven at the rate of eighteen miles an hour on May 24th. Defendant asked Sergeant Jarrett if he had ever seen him before. Witness said that to the best of his belief defendant was the person he stopped, but he would not be positive. The man pointed to a name on his machine, which he said was his own. Defendant said he was stopped by no one on the day in question. He was a motor-cycle maker, and his name appeared on many machines. The Chairman said that as the witness was not quite certain of defendant's identity the case would be dismissed. Defendant applied for his expenses and those of a witness, and was allowed 10s. Not often does a motorist obtain compensation from the police.

CLAIM FOR DAMAGES.

At the Brompton County Court (London), on Monday, before Judge Stonor and a jury, Mr. Frederick Mahlstedt, cab proprietor, Paddington, W., brought an action against Major E. H. Hills, 32, Prince's Gardens, W., claiming £49 19s. 6d. in respect of fatal injuries to a mare, said to be due to the negligent driving of a motor-car by a servant of the defendant. The defendant repudiated his liability in regard to the claim, and counter-claimed for £20 for damage to his motor-car, alleged to have been caused through the negligent driving of the plaintiff's man. The jury came to the conclusion that the driver of the motor-car was guilty of negligence by driving at an excessively rapid pace, but that the driver of the cab was also guilty of negligence which contributed to the accident. This was a verdict for the defendant on the plaintiff's claim, and for the plaintiff on the defendant's counter-claim. His Honour gave judgment accordingly, and allowed no costs on either side.

WORK FOR THE TRADE.—QUESTION AS TO "EXTRAS."

At the Brompton County Court (London), on Monday, before Judge Stonor, the Locomobile Company of Great Britain, Ltd., brought an action against Mr. William Stonebridge, motor-car and cycle repairer, etc. (trading as the Talgarth Cycle Company), The Parade, North End Road, Fulham, S.W., claiming £12 odd in respect of work done and materials supplied.

Mr. George Shave, works manager to the plaintiff company, stated that on June 20th of last year the defendant called at the plaintiff's works, and asked them to generally adjust a motor-car, adding that he wished the account not to exceed £3. Witness said he would do his best to keep the price down as mentioned. A few days later, while the work was in progress, a gentleman, who said he came from Mr. Stonebridge, called at the works, and witness pointed out to him that it would be impossible to make the car fit for use without exceeding a charge of £3. The gentleman then replied, "Very well go on with it." On July 1st the car was taken away by the same gentleman, and a fortnight later the defendant wrote asking for a detailed account. The request was complied with, and monthly accounts also were sent in, but in November the defendant wrote stating that he had not given orders for all the work to be done, nor authorised anyone to give such orders.

In cross-examination, witness denied that he was directed merely to rectify a leakage in the steam-pipe; he was told to generally adjust the mechanism of the vehicle. When the car was finished they delivered it up to the owner of the car, who, witness understood, was a representative of the defendant. Plaintiffs had since applied to the owner of the car for payment of the account, but that was done at the defendant's request.

The Judge: When was it you knew that this gentleman was the owner of the car?—Witness: When he came to fetch the car away.

When all this work was finished?—Yes, sir.

The defendant stated that he merely asked plaintiff's manager if he could stop the steam leaking from one of the pipes, clearly stating that the charges were not to exceed £3. He gave no further orders for work to be done to the car, nor authorised anyone to give additional orders. When finished, the car was delivered, not to him, but to the owner. When an account for £14 was sent in witness at once called at the plaintiff's works and protested that he had not given orders for the additional work.

In cross-examination defendant said that he had not yet sent in his account to the owner of the car, but on getting the plaintiff's account he at once forwarded that to the owner of the car.

The plaintiffs' manager, recalled, denied that he had received a complaint from the defendant regarding the amount of the charges until the present year. If defendant had called and made such a complaint to the firm witness would have been sure to have heard of it.

His Honour said he did not think he could come to a proper conclusion regarding the case without hearing what the owner of the motor-car had to say.

The case was accordingly adjourned until the 12th inst.

VIOLENT PREJUDICE.

ERNEST BECKETT, of Woodford, has been summoned for wilfully damaging the mudguards of a motor-bicycle, the property of Morton Ponder, at Wanstead. Mr. Ponder, who lives at 15, Wellesley Road, Ilford, said that on Bank Holiday he was riding a motor-bicycle between Wanstead and Ilford. He saw the defendant and three other men, and as he passed them the defendant put a stick into the spokes of the back wheel. The witness was thrown off and his mud-guard was bent. The defendant was fined 5s. and also ordered to pay the costs and damage (£1 4s. 6d.) in addition to the fine.

SCOTTISH AUTOMOBILE FACTORY.

THE new works erected by the Albion Motor-Car Company, Limited, were briefly referred to last week. They are situated in South Street, Scotstoun, West, within easy access of Glasgow, and are substantial brick buildings, excellently lighted, cool in warm weather, airy and well ventilated, brilliantly lit at night by an installation of Keith's high pressure gas system, and heated in winter by a system of low pressure steam pipes. The power is generated by a 33-b.h.p. Crossley gas engine. The works are built throughout to comply with the requirements of the insurance companies and

also the sanitary authorities. Goods are delivered into the main store, where castings, forgings, and all raw material are carefully stored, from thence the parts pass out to the machine shop, and when work has been done on them there they are forwarded to the store for finished parts, where they are carefully inspected before being taken into stock. The smiths' shop is also close at hand, delivering the forgings to the machine shop. The parts are then passed out as required to the assembling shop, which is just beyond, and are finally finished off before being handed over to the erecting shop where the cars are built up. The motors and frames when completed are then run through to the testing shop, and after being carefully adjusted are given a continuous run of about nine hours. They are taken down, closely examined, and rebuilt again, and are then ready for the practical test on the road. Adjoining the testing shop there is the shop for repairs, and beyond that a large bay for storing finished cars.

One of the features of the machine shop is the floor. This is formed with a dry bottoming of broken brick, on the top of which concrete is laid, and then a thickness of asphalt to make the whole thoroughly damp-proof. The assembling and erecting shop has a number of special machine tools for its own use. It is well fitted out with benches and has a pit for getting at the under side of the cars. It is also well supplied with overhead travelling cranes. The testing and repair shops are separated from the rest of the shop by a fire-proof wall. They are provided with a travelling crane, and the repair shop has also a pit for the inspection of cars that are being overhauled. Beyond this is the cleaning shop and the store for finished cars.

A TRAMCAR accident occurred in Bradford the other evening. Mr. George Haley was returning in a motor-car to his home at Clayton with Mrs. Haley, when he endeavoured to get in front of an electric tramcar which was proceeding in the same direction. Near Ingleby Road another car approached from the opposite direction, but seeing the motor-car the driver came to a standstill. The driver of the other tramcar, however, not being aware of Mr. Haley's presence, continued to run at a good speed. Mr. Haley endeavoured to drive between the two. The space, however, proved to be insufficient, and the motor-car was jammed between the two heavier vehicles, and completely wrecked. Mr. and Mrs. Haley had narrow escapes of being killed.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

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THE Motor-Car Journal.

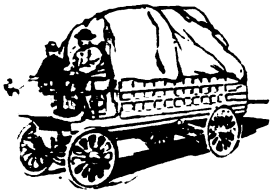
VOL. V.]

LONDON, SATURDAY, JUNE 20, 1903.

[No. 224.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



HERE seems much truth in the statement of the Home Secretary last week that during 1902 there were 1,203 persons injured by covered vehicles in London, not including the City, and in forty-two cases the accidents proved fatal. This accounts for the new bye-law suggested by the London County Council, which might well be adopted wherever traffic is closely associated in our Metropolitan thoroughfares. Hooded vans are a delusion to their drivers, and a menace to the public safety. Legislators with a superabundance of energy might turn their attention in their direction.

To Banbury Cross.

A RUN of about twenty-two miles to Banbury has just been enjoyed by the members of the Oxford Automobile Club, the attendance including such ardent motorists as the president (Mr. C. Rippon), the hon. secretary (Mr. W. L. Creyke), Mr. N. G. Ravenor (Witney), Dr. Daly, and Dr. Collier (Oxford). Mr. Ravenor travelled on his 10-h.p. Gladiator; the president, with Mrs. Rippon and Mr. Walker, on his 8-h.p. M.M.C.; the hon. sec., with Mr. Percy Hall, on his 30-h.p. Panhard; Mr. F. G. Barton, with Mrs. Barton, Mr. Barton, jun., and Mr. J. Sherratt, on a 12-h.p. M.M.C.; and Mr. Allman and Mr. G. Strangward (Kilburn) on an 8-h.p. Renault. Dr. Daly had the misfortune to cut a tyre when about ten miles out so seriously that he was obliged, after temporary repairs, to return to Oxford. The gradient is upward nearly the whole way to Banbury, and some nasty hills had to be encountered. That at Deddington afforded a splendid test of hill-climbing power, but all the cars without exception took the stiff ascent without any apparent difficulty. On arrival at Banbury, the party put up at the White Horse Hotel. The return journey was accomplished without untoward incident, and all acknowledged having spent an exceedingly pleasant afternoon.

Tunbridge Wells.

OUTSIDE Tunbridge Wells is the Common, with splendid roads, popular among motorists and amid delightful surroundings, such as are depicted in the photograph on page 308, taken from an official guide to the town just published by the Corporation. This guide is almost as charming as Tunbridge Wells itself, with its delightful pictures of the glades and glens nestling within easy radius of the place. As a health resort the Kentish town has been famous for two centuries, and in 1902 the death rate was only 12·7. The Common is one of the beauty spots of the county, and not the uninviting, dreary area usually designated by such a name, while the roads in the district are good, and lead to historic buildings such as Bayham Abbey, Tonbridge Castle, Penshurst Place, Knowle House, Fridge Castle and other interesting places where police are tolerant and residents hospitable.

Motor-Car Imports and Exports.

THE returns relating to the British imports and exports of motor-cars and cycles during May now available show that very large numbers of foreign-built cars continue to be imported. No less than 570 cars and cycles were imported into this country last month, the value of the same being returned at £160,729. The value of the "parts thereof" is given as £23,316, so that we get a combined total of £184,045, as compared with £153,955 in April last, and £104,375 (representing 394 cars) in May, 1902. Some of the imports were only of a temporary character, being reshipped to foreign destinations. Thus last month the reshipments comprised thirty vehicles, amounting in value to £7,815, and £826 of parts, bringing down the net imports in May to £175,404, as against only £97,565 in the same month a year ago. For the first five months of the year the net imports of motor-cars, cycles, and parts stand at no less than £769,043 (representing 2,469 vehicles), or more than double those during the same period of 1902. As regards the exports of automobiles of home manufacture, the shipments during the past month amounted to 51 vehicles of a value of £15,515. Of parts the exports attained a value of £7,301, making a combined total for May of £22,816 as compared with £25,502 in April last, and £14,584 (representing thirty-two vehicles) in May, 1902. To the end of May, 270 vehicles of British manufacture had been exported this year, these together with the "parts" representing a sum of £110,525.

Track Racing in America.

THE first American automobile race meeting of the season was held at the Empire City track, New York, on the 30th ult., and was a decided success. The attendance was the largest ever seen at a meet in the vicinity of New York, while the programme of events provided an excellent afternoon's sport. Many of the visitors came in their cars, and nearly two hundred were counted upon the lawn and behind the grand stand. The chief event of the day was a race between "Barney" Oldfield in the 70-h.p. Cooper-Ford machine and C. G. Wridgway in a 40-h.p. Peerless. The conditions called for the best two out three five-mile heats, the contestants starting at opposite points of the track. In the first Wridgway took the lead and had gained about 100 yards on his rival at the end of the first mile, but during the second mile Oldfield made the better speed and soon took the lead, leading by a quarter of a mile at the finish. Time, 7 minutes 2 1-5 seconds. The second heat was again won by Oldfield in 5 minutes 31 seconds, and the second mile of this heat was done in 1 minute 1 3-5 seconds, thus beating Alexander Winton's track record of 1 minute 2 1-4 seconds. Another new record was established by Albert Champion on a four cylinder 10-h.p. Clement motor-bicycle. He covered 1 mile in 1 minute 5 seconds and 5 miles in 5 minutes 35 seconds. In the mile record trials, open to all types, the winner was O. W. Bright on a 60-h.p. Mercedes (time 1 minute 7 seconds). A. C. Bostwick on an 18-h.p. Mors being second (1 minute 12 seconds), and J. Tracy on a 35-h.p. Panhard third (1 minute 16 seconds). On the same day a race meeting was held by the Massachusetts Automobile Club on the Readville Track, Readville, Mass., in the

presence of over 10,000 people. The world's mile track record for steam cars was broken twice, which added to the interest of the meeting. F. E. Stanley, in a new racing car of the Stanley Motor Carriage Company, covered a mile in 1 minute 24.5 seconds, which is the new world's record for steam carriages, and George C. Cannon beat his own record of last year by covering a mile in 1 minute 42.5 seconds. The three-mile race for standard steam-cars was won by F. Durbin (Stanley) (time, 4 minutes 22.5 seconds); F. A. Hinchcliffe (Locomobile), being second.

Hill-Climbing Contest.

THE Hill-Climbing Contest of the Reading Automobile Club was decided on Saturday afternoon last on Peppard Hill in the pouring rain. The hill is one of the steepest in the neighbourhood, covers about 300 yards in length, and includes the following gradients:—100 feet at 1 in 40, 70 feet at 1 in 11, 70 feet at 1 in 10, 85 feet at 1 in 7, 20 feet at 1 in 6, 73 feet at 1 in 8½, 105 feet at 1 in 10, 66 feet at 1 in 14, 12 feet at 1 in 40. The distance had to be covered from a standing start, and all the competitors negotiated the hill without any difficulty. The best performances were:—Speedwell Motor and Engineering Company's 6-h.p. Gardner-Serpollet, driven by Mr. A. J. Dew, 39 secs.; Mr. E. J. Wickens' 15-h.p. F. I. A. T. driven by owner, 49 1.5 secs.; Mr. E. J. Wickens' 12-h.p. Pipe driven by Parratt, 50 4.5 secs.; Speedwell Motor Company's 10-h.p. Argyll driven by Mr. A. J. Dew, 58 3.5 secs.; Mr. W. L. Creyke's 8-h.p. Renault 1 min. 7 3.5 secs. Mr. J. Paxton Petty kindly acted as starter, and Mr. Albert E. Newton was timekeeper.



The Meet of the Scottish Automobile Club at Philliphaugh, N.B.
[Photo by] [Mr. T. M. Sleigh, Edinburgh.]

Motor-car Accidents.

HARDLY a week now passes without automobiles coming upon the scene in the legislative chamber, and last week-end's proceedings of the House of Commons closed with almost a full-dress debate on the wickedness of motorists. A day or two earlier Mr. Galloway Weir, who has a tenacity that must be wearisome to many of his fellow legislators, elicited the statement—which we do not accept as a fact—that ten persons had been fatally injured, and 204 others injured, in consequence of the automobile, during the present year in the Metropolis alone. Such an assertion should be treated with something more than the amount of salt necessary to catch the proverbial bird, for it includes motor-cycle mishaps as well as those in which motor-cars figured; and how quickly the ordinary journalist can tot up the aggregate of automobile accidents motorists already know full well.

Discussion in Parliament.

MEANWHILE the discussion in Committee of Supply during the criticism of the Local Government Board was instructive, and should serve as a warning to reckless motorists as to the treatment they will bring down upon the whole body of motorists if they do not moderate their ways, or act in a becoming fashion on the roads. Mr. Cathcart Wason believes that such motorists "claimed the right to drive the public off the roads. Harmless men, women, and children, dogs and cattle, had all got to fly for their lives at the bidding of one of these slaughtering, stinking engines of iniquity." Mr. H. Pease and others referred to the bad taste shown by some drivers, whose conduct calls for condemnation by every gentleman, and Sir Brampton Gurdon would imprison those who infringe the law.

"Save us from our Friends."

MR. G. HARWOOD suggested that motor-cars should carry speed recorders; and Mr. L. Sinclair—himself a speedy motorist—drew attention to the glaring lights which many motor-cars carried, suggesting that the new Bill should contain some regulations with regard to that point. Finally, in summing up the debate, Mr. Walter Long showed how thoroughly he realises the necessity of dealing with the subject promptly, and with a proper regard to the circumstances of the case—very materially different to those prevailing when Mr. Chaplin introduced his measure in 1896.

Discretion Wanted.

MR. LONG rightly pointed out that a speed of ten miles an hour might be more dangerous at one part of the road than thirty at another, and yet a man could not be stopped, because he was travelling within the statutory limit. In the first place, it must be made easy, as far as possible, to identify an offender. It was said that drivers who disregarded all the laws of good taste would not hesitate to conceal their numbers, or the numbers might be concealed by dust. It was possible that now and again there might be an escape from justice, either by fraudulent or accidental concealment, but he believed if the numbers were made sufficiently conspicuous it would be possible in ninety-nine cases out of a hundred to identify the offender. He did not hesitate to say that the roads in this country were not made for driving at the rate of twenty-five or thirty miles an hour, but there were highways, such as the old Roman roads, on which a driver could see for miles in front of him, and over which motoring was as safe for the general public as for the people in the car.

Mr. Montagu's Bill.

THE delay in the introduction of the Government's measure, which was suggested by the President of the Local Government Board, is said to be due to a desire on the part of the Cabinet to see how the House regards the Bill brought in by Mr. Scott Montagu. A day or two ago that gentleman obtained leave to bring in his proposals, which would remove the speed limit, and throw the entire responsibility on the owner of the car, while insisting on a provision for the licensing of drivers, and the carrying of numbers for identification. The Bill is backed by Mr. Murray, Mr. Norman, Mr. Harmsworth, Mr. Bull, and Mr. T. P. O'Connor, and has been read a first time. Probably on the reception accorded to this Bill will depend the ultimate attitude of the Government.

False Names.

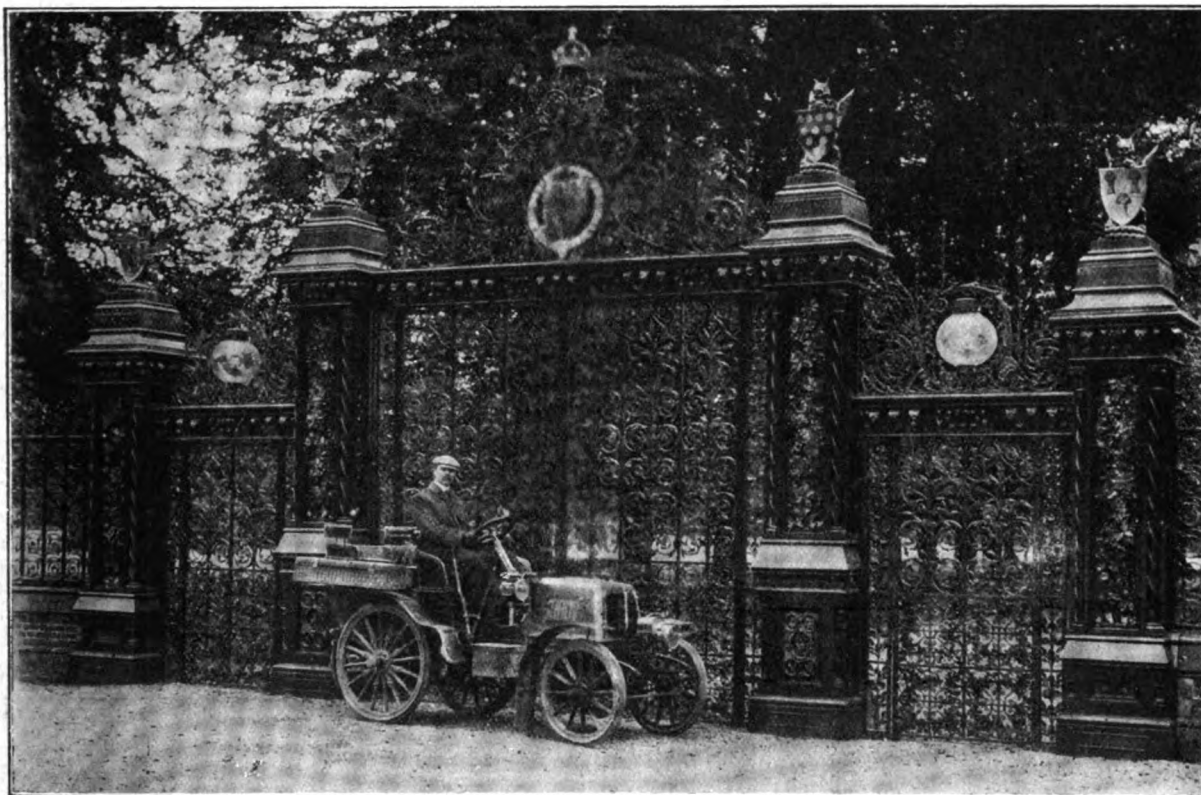
THERE seems little doubt that a few motorists have lately given the police false names and addresses—a practice all right-minded men must condemn. At Berkshire Petty Sessions, at Newbury, the chairman has stated that the practice of motorists giving false names and addresses when

stopped by the police was growing, and called for stringent measures. In a case in point he ordered that a warrant should be issued for the defendant's arrest. At the conclusion of the ordinary business at the Redditch Police Court, one of the magistrates inquired why a case which stood on the charge-sheet of furious driving against a motorist could not be heard. Superintendent Hayes replied that the reason was that the police had so far been unable to serve the summons. The defendant had given a wrong address. He added that it was almost impossible to get an offending motor-driver to give a correct address. A magistrate thereupon suggested that in cases of doubt the police would be justified in detaining an offender until the correctness of the name and address had been verified.

source of strength to this energetic association. The wretched weather last week end destroyed the prospects of really successful runs, but venturesome mortals managed to keep up an appearance of good spirits.

London Traffic.

THE Royal Commission on London Traffic has been hearing Mr. G. L. Gomme, Clerk of the London County Council, on the evils arising from the continual breaking up of streets in the metropolis. Witness stated that his Council had on many occasions tried to have some limitations placed on the exercise of powers for the breaking up of streets, and that, in their opinion, the matter was one which required to



Mr. Frank Morris on his Car at the Royal Gates, Sandringham.

The Detention of Offenders.

THE question of the detention of automobilists having been freely suggested by several county magistrates we mention the matter as one that motorists should regard with something like concern. Under the Light Locomotives Act, the police have no such authority, and this the chairman of the Redditch bench rightly recognises. But the superintendent of police there has an idea that he could detain motorists under the Highways Act, and may be tempted to have a test case on that point. Already motorists are treated with scant courtesy by the police; their detention would be adding insult to ignominy, and it is to be hoped that no more false names will be given or anything done that might give the police grounds for advocating such a course.

Club News.

ELSEWHERE we record the doings of some of the principal provincial clubs, but would take this early opportunity of congratulating the Eastern Counties Automobile Club on securing the Earl of Stradbroke as its first president. His influence throughout East Anglia should prove a great

be regulated by some central authority. In conclusion, Mr. Gomme said that the traffic requirements of London had not been nearly met, and that until some method was sanctioned for increasing the revenue available for the construction of necessary new streets, and the widening of existing main thoroughfares, either by the taxation of land values or in some other way, it would be impossible to deal adequately with the problem of London locomotion.

Official Innocence.

IN replying to Mr. Weir, M.P., the Home Secretary says:—"I understand that in the inner streets of the Metropolis the police do not as a rule find difficulty in identifying drivers of motor-cars. In the less-frequented roads, however, the task is more difficult, and they consider that the assistance of some means of identification is much needed. I do not think it is desirable to explain in detail the means adopted by the police, nor, indeed, would it be possible, as their action is of necessity guided by the circumstances of each case." Fortunately for motorists, the methods of the police are fairly well known to their possible victims.

Right Royal Ireland.

AFTER all that has been said and written with regard to the extravagant ideas of Irish hotel proprietors as to the depth of the pockets of their visitors, it is gratifying to receive assurances from those in a position to know that much exaggerated nonsense has been in circulation on the point. Of course Irishmen are not philanthropists, or, at least, they do not run their business concerns on lines likely to lead to bankruptcy. Consequently they will expect payment for value received, and if such happens to be rather higher than would be the case during normal times, it must not be forgotten that one of the arguments advanced in favour of holding the race in Ireland was the money it would take to the country. Anyhow, motorists will learn some of the hospitality of Irishmen, and may expect a right royal welcome from all sections of the people.

On the Course.

LAST week we chronicled the facilities now provided for motorists attending the Lewes race meeting. Following this good example the executive of the High Gosforth Park Company have made arrangements with the Northern Counties Garage, of Newcastle-upon-Tyne, to have a man with a store of petrol, oil, and small accessories, and a set of tools, in attendance during the three days' meeting there next week. He will be located near the gates of the Club enclosure, so that he will be able to attend to the wants of either members or non-members of the Club. There are two or three race meetings at which motor-cars are not allowed, but the adoption of the new policy in the north and the south should quickly lead to a withdrawal of such a prohibition.

The New Star Works.

WHEN in Wolverhampton last week end we had the pleasure of being conducted round the new works which have recently been acquired by Mr. Lisle, in consequence of the increased demand for Star motor-vehicles. The works cover more than an acre of ground and are replete with the most modern machinery and are fully occupied, the "hands" having to work overtime. Everything is done on the premises, and the body department is, perhaps, one of the largest connected with any British firm of motor manufacturers. During the tour we were shown the whole progress of the building of a car, and judging from what was seen we have no hesitation in stating that the Star car is essentially "high-grade."

An Editorial Withdrawal.

It is reported that a newspaper editor who had taken a house on the Gordon Bennett course has relinquished it to another and does not intend to honour the country with his presence. Of course everyone cannot be expected to agree with motor racing on roads, even when such elaborate preparations are being made as is the case in Ireland, but surely the horrors of the Paris-Madrid event have not so seriously upset the editorial nerves. We wonder whether he will follow this policy to the logical conclusion, and, having withdrawn the favour of his presence from the race, dispose of his new 40-h.p. Mercedes, his Mors, and other signs of automobile attachment.

The Gordon Bennett Race.

IN less than a fortnight the Gordon Bennett race will have been run and won, and the great motor-car event of the year will be a thing of the past. Major F. Lindsay Lloyd, R.E., will be the starter, and the gentlemen who have consented to act as judges are the Duke of Ratibor, Baron de Zuylen, Mr. A. E. Shattuck, Colonel R. E. B. Crompton, C.B., Messrs. R. W. Wallace, K.C., W. W. Beaumont and W. W. D. Goff, J.P. For the various speed trials arranged in connection with the Irish fortnight large entries have been received. Nearly seventy cars and motor-cycles will take part in the Dublin com-

petitions, more than fifty in the Castlewellan trials, forty at Cork, and about fifteen in Co. Kerry. For seeing the Gordon Bennett race, the camp at Ardscoil is likely to be a popular venue, and those who wish to see the event from there should communicate at once with Mr. J. C. Percy, Dublin. As we go to press we learn that Henri Fournier will not be one of the French team for the race, his place being taken by Gabriel, whose extraordinary performance in the run to Bordeaux in the Paris-Madrid race brought him into the front rank of *chauffeurs* at a bound.

WE hear that the Daimler Motor Co., Ltd., has taken up the agency for a new Belgian-built two-cylinder petrol car.

THE first Theatrical Ladies' Motor Meet will be held on Monday next.

FULL particulars of the 1,000 miles Trials for the reliability of motor cycles will be given in the *Journal* next week.

THE Midland Automobile Club has been invited by Mr. F. A. Bolton to visit him at Oakamoor, N. Staffs, to-day (Saturday).

MESSRS. FULLER, HORSEY, SONS, AND CASSELL are holding a sale of the Gardner Gun Company's plant, which includes many modern tools.

THE police in the neighbourhood of Coventry and the Midlands generally are on the lookout for motorists, and several summonses have been issued recently.

AT a meeting of Cardiff Health Committee a deputation which had been appointed to attend the Bath and West of England Show reported favourably on the motor-vehicles there exhibited for haulage purposes.

RUMOUR hath it that the Ladies' Automobile Club has ceased to exist and that the Automobile Club of Great Britain and Ireland, which is responsible for the rent, has a three years' lease of 110, Piccadilly, W., to dispose of.

THE A.C.G.B.I. have just issued in a very convenient form a translation of the general racing rules adopted by the Automobile Club of France. The pamphlet, which is published at sixpence, also contains the conditions governing the race for the Gordon Bennett cup.

THE Standard Motor Co. is the name of a new Coventry firm which purposes building a car with a short-stroke engine. The change-speed gear will be extremely simple in operation. The main object of the company is to produce a small car that will be easy to manipulate, have an abundance of power uphill, and that will not exceed a normal speed of twenty-five miles an hour on the level.

MESSRS. J. ROTHSCHILD ET FILS, LTD., have been entrusted by Lord Linlithgow with an order for one of their "Berlin" motor bodies, but which is to have special seating accommodation. It is to be built in such a way as to form a couch so that his lordship can recline at ease in case of fatigue. In all, five persons can be comfortably seated in the interior of the car, and a small removable centre table is to be provided for the further requirements of the occupants. The body will be fitted to a 1904 type 24-h.p. Panhard chassis, with mechanically-operated inlet valves, supplied by the British Automobile Commercial Syndicate, Limited.

WALKER'S Practical Motor Record is a new notebook for the use of automobilists, and will be regarded with favour by those who tour. It is really a handbook of a goodly number of pages, ruled so that the motorist can make a note of his various journeys, the time occupied, and quantity of petrol used. There is also space for a weekly record of expenses and an annual summary. The literary matter comprises a table of speeds, determining the rate at which the car is travelling by taking the time for one mile, and some important rules for the motorist who does not wish to fall into the hands of the police. A list of hotels is not so complete as it will probably be in a second issue, but the general arrangement of the work is admirable. It is supplied in three or four different bindings, one good style being that in which a stud and flap are provided thus securing a compact book for the pocket. Messrs. John Walker and Co. are the publishers.

THE IRISH FORTNIGHT.

MR. ORDE has met the Committee of the Motor Cycle Union of Ireland to enlist the services of the members of that body in connection with the race, and particularly to arrange with the Union to supply a number of men on motor-bicycles to act as despatch riders between the control stations and the headquarters of the club at Ballyshannon. Mr. R. J. Macredy, the President of the Union, occupied the chair. Mr. Orde asked the Committee to arrange for forty-five men on ordinary cycles to act as pilots for the cars on their way through the controls. They would be wanted for the controls in Kildare, Monasterevan, and Athy, the arrangements for the other controls having been made. Twelve men would be wanted for each station, but fifteen were asked for to make assurance doubly sure. The men would carry the time from the inward control station to the outward control station, and the cars would be compelled to follow the pace set by the cyclists. Mr. Orde asked for twenty-one or more motor-cyclists to act as despatch bearers.

on the L. & N.W. Railway Company's system. Motor bicycles may be carried on the express passenger boats.

MR. ALEXANDER WINTON is using dry batteries in connection with the ignition on his racer. He would have preferred accumulators, but could not find any of American make sufficiently reliable. On this point he says, "It seems strange that American storage battery makers fail, so far at least, to produce reliable and efficient constructions which will equal the performance of European batteries, but such seems unfortunately to be the present condition of affairs."

IN Carlow the local cycle agents are taking up motor-bicycles with eagerness, urging local riders that they provide the best means of seeing the race. Mr. Mark Purser, of Carlow, is the agent for the Humber and Singer machines, and Mr. D. Norse, of Tullow, Co. Carlow, supplies the F. N. and Minerva motor-bicycles. There are about half a dozen motor-cars privately owned near Carlow. Mr. Purser has also accommodation for motor-cars, and does repair work.

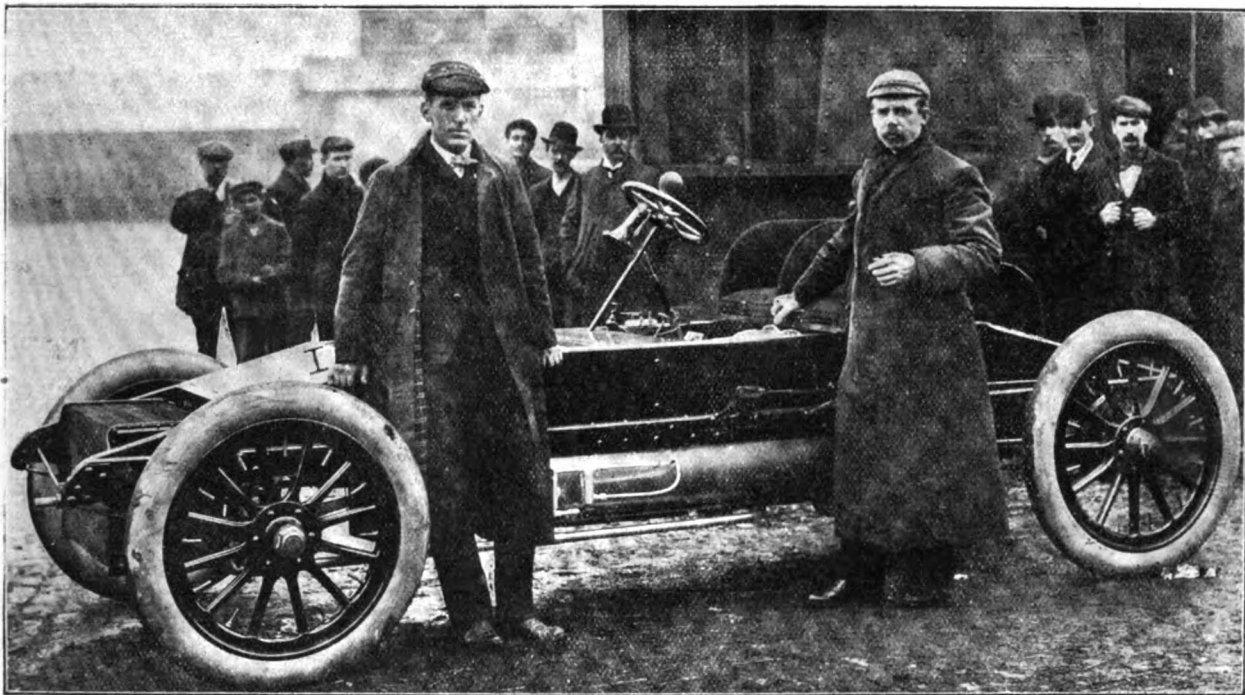


Photo by

Mr. Alexander Winton and his Racer at Dublin.

[Lafayette, Dublin.]

It would be necessary, he pointed out, for the men to become familiar with the internal lines of communication between the control station at which they would be placed and the headquarters, as their duty would be to keep the head officials informed of the progress of the race. They would be unable to use the course road, unless in the event of an unexpected breakdown. Mr. Percy undertook, on the part of the Committee, to find the necessary number of cyclists and motor-cyclists, and the organisation of the matter was placed in the hands of Mr. F. J. Glynn, 11, Lower Sackville Street, Dublin.

MEMBERS of the Midland Automobile Club going by train to Holyhead will join the boat train on Monday night, the 29th inst., leaving Birmingham at 10.15 and reaching Dublin at 6.0 on Tuesday morning, the 30th inst. The cars of the members will leave Birmingham by a train to be arranged for on Saturday morning, the 27th inst., and the L. & N.W. Railway Company will be instructed to load up cars of members travelling by road or rail at Holyhead by nine o'clock at the latest on Monday morning. The charge for conveying a car from Holyhead to Dublin will be 35s. at owner's risk, and 43s. 9d. at company's risk. The cost of conveying a car by rail will be 6d. per mile

At the Alexander Electricity Works at Carlow the charging of main or ignition cells can be carried out at all times. Mr. G. M. Harris is the resident engineer, and as the works abut on a road which will form part of the course of the Gordon Bennett Cup race, they will be convenient for motorists visiting Ireland.

A WELL-KNOWN Irish M.P. informs us that many of the charges brought against the hotel proprietors are quite unfounded, and we have received news of at least three who will endeavour to be reasonable and hospitable. The Royal Arms Hotel at Tullamore is in railway communication with Kildare, Monasterevan, and Athy, and has accommodation for fifty visitors. The Imperial Hotel at Portarlinton is within three miles of the course at Ballybrittas, and the proprietor of the Stanhope Hotel at Ballinakill, which is within eight miles of Stradbally, is arranging for vehicles to take visitors to the scene of the event.

At the Slieve Donard Hotel, Newcastle, co. Down, a large marquee has been erected for the storage of cars at a charge of 5s. per night. Adjoining the hotel is a large open space where a hundred automobiles can be accommodated. They will each be covered with a large tarpaulin during the night, and for

such service a charge of half-a-crown will be made. A depot is also being arranged for the supply of petrol or motor-spirit, and electric batteries will be recharged at the hotel.

MR. NICHOLAS LALOR, writing with reference to our recent note on Lalor's Hill, says that the view from the top of this hill commands the course for nine miles, and is considered by many competent judges to be the very finest view along the whole route.

AUTOMOBILISM, in some form or other, is making its appearance on the programmes of many local race meetings in Ireland, and a five miles motor-cycle handicap will be decided at the Athy Sports on the 29th inst. On the same day the Maryborough Athletic Sports will take place, a motor-car display being among the attractions. A motor-car parade is also among the attractions at the sports at Ballsbridge, Dublin, on the 27th.

It has now been definitely settled that the Harmsworth Cup

UNDER the title of the "Coast Line Motorway," the Earl of Leitrim is organising an automobile service for the north-west of Donegal. The first service to be inaugurated will be that between Strabane Railway Station and Rosapenna, a distance of thirty-eight miles. Several good hotels are to be found on this route, notably at Letterkenny, Milford, and Portsalon. The terminus of the Motorway at Rosapenna will be amidst the picturesque scenery of the shore of Sheephaven Bay. At Strabane the service will make connections with trains from Belfast and Dublin, and with those of both the Great Northern and Donegal Railways via Londonderry, at hours which will suit the cross-Channel services with England and Scotland. Lord Leitrim is rolling, with steam rollers, the whole stretch of roads at his own expense.

IN connection with the Automobile Fortnight, Messrs. Salsbury and Sons, Limited, have arranged for a display of their goods at the show-rooms of Messrs. John Hutton and Sons, in Dawson Street, Dublin. Not only will they have a



Photo by]

The Gordon Bennett Course. Ballitore Village, six miles from Old Kilcullen.

[Lawrence, Dublin.

Motor Boat race will be started from the Royal Cork Yacht Club-house, Queenstown, and will finish at the Marina flagstaff.

THE committee of the Corinthian Club of Dublin have issued invitations to all the competitors, whom it is proposed to entertain at the Dolphin Hotel, Dublin, on the 27th inst. Acceptances have been received from all except the Germans, who may not arrive in Ireland until the 28th inst.

SOME enterprising Irishmen are reported to have chartered a large furniture van for the occasion of the Gordon Bennett race. Their intention is to fit up the interior of the van as a bed and dining room and camp in it in a field near the course. The roof will be made into a very comfortable grand stand by a few armchairs. The van will be taken down to the course a day or two before the event, and if the weather is at all fine the occupants anticipate a most enjoyable outing.

MR. WINTON has a good opinion of the Gordon Bennett course and describes the roads as far superior to anything they have in America. In fact, they compare very favourably with those of France, although not quite so wide. Messrs. Edge, Jarrott and Stocks have visited Messrs. Owen and Winton at their headquarters at the Rectory, Timolin, near Ballitore.

complete selection of their lamps, lubricators, accumulators, plugs, etc., but there will be a full range of motor clothing and other accessories for motorists.

MESSRS. GRANGER BROS., of Belfast, are steam rolling the roads in Queen's Co., towards the cost of which £400 has been sanctioned by the Automobile Club.

MR. J. W. ORDE, secretary of the Automobile Club, visited Castlewellan, County Down, recently, and, after making a minute inspection of the roads, says that he does not believe a finer hill exists in the United Kingdom for trying the hill-climbing capacities of the motor-cars than the famous Ballybannon Hill, which has been selected for these contests. This hill will also be taken in a downward way at the end of the four mile speed trials from Clough to Castlewellan. It is expected that from three to four hundred cars will journey north from Dublin to take part in or witness these trials. Colonel Chamberlain, the Inspector-General, has promised the service of 400 men of the Royal Irish Constabulary to assist in keeping the road, which will be closed for the day to all other traffic under the powers granted by the special Act of Parliament passed this session. Special excursion trains to Tullymurphy, Dundrum, and Newcastle will be run.

A PETROL MOTOR ROAD TRAIN FOR SOUTH-WEST AFRICA.

THE Neue Automobil Gesellschaft, of Berlin, exhibited at the recent Motor-Car Exhibition in the German capital a petrol motor road train they have recently completed for the transport of goods between the coast and the German colony in South-West Africa. Goods have at present to be

tern of combined honeycomb radiator and water tank, with cooling fan. From the engine the power is conveyed through a clutch and gear box in the usual way to a differential cross shaft. This is located more to the rear than usual, in order that small pinions on the ends may mesh with internally-toothed rings bolted to the hind wheels, so driving the latter. A feature of the vehicle rendered necessary by the local conditions is the provision of a winding drum, in order that when the train gets stuck in a soft place on the road, or on a hill, the motor-wagon may wind the

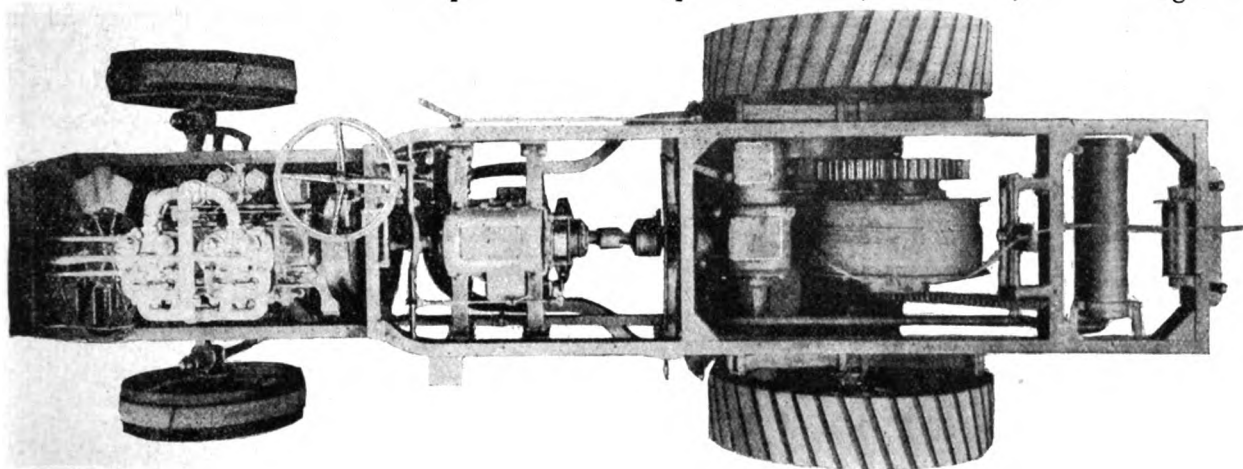


Fig. 1.—Plan of Chassis.

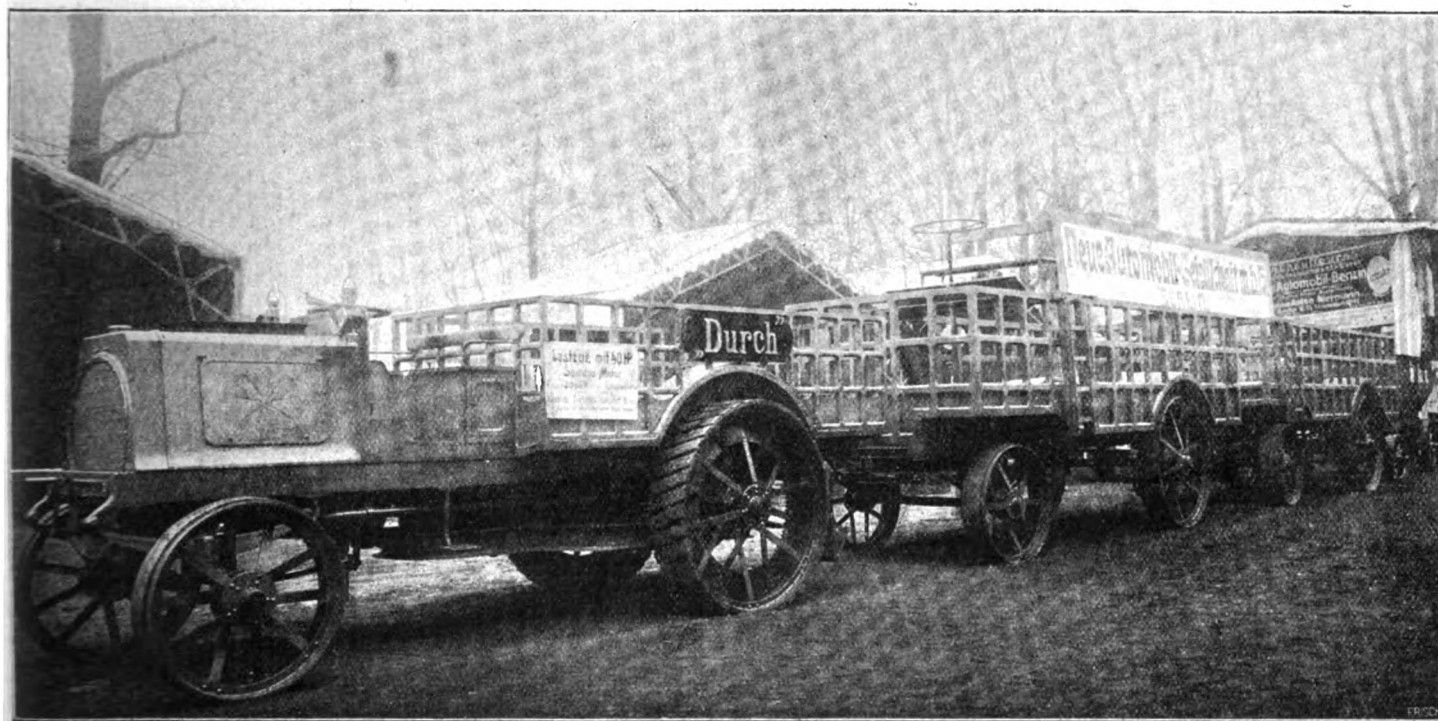


Fig. 2.—The Neue Automobil Gesellschaft's Petrol Motor Train for South-West Africa.

[Der Motor Wagen.

mainly transported by natives or by lumbering wagons drawn by oxen, both methods being, of course, exceedingly slow. The adoption of motor-wagons is, however, not altogether an easy matter, for not only is the road extremely sandy, but, in some parts, of a very hilly nature, while the scarcity of water precluded the use of steam wagons. Finally, after a careful inspection of the local conditions and of the requirements, the train illustrated in Fig. 2 was decided upon. It consists of a petrol motor-wagon with two trailers, the whole being designed to carry a load of 20 tons. Power is supplied by a 40-h.p. four-cylinder engine, having magneto ignition, and the latest pat-

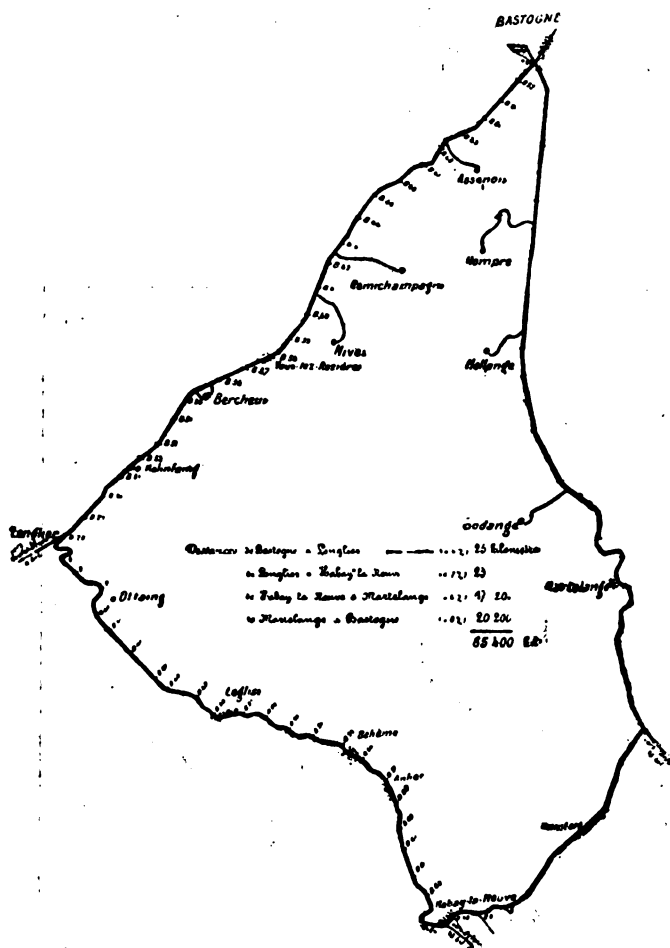
trailers forward. The winding drum is, as will be seen from Fig. 1, located to the rear of the differential shaft. The latter is provided with a clutch, by means of which the hind road wheels may be disconnected, and spur wheels driving the winding drum engaged. Furthermore, to meet the road conditions, the rear wheels are made of unusually large diameter—5ft.—and provided with grooved tyres 32 in. wide.

THE Wolverhampton Motor Cycle Club has passed a resolution condemning the tax of 15s. per annum on motor-cycles.

CONTINENTAL NOTES.

"BY AUTOMAN."

MISFORTUNES never come singly. The news of the death of Mr. Loraine Barrow, who had been making a gallant struggle for life against great odds, came to hand on Saturday evening last. The poor fellow had lain for three weeks more or less unconscious in a hospital, close to the scene of his sad accident. His high state of fever had almost prevented the doctors from finding out what his injuries were, but they were many and complicated. Loraine Barrow's residence was at Biarritz, but he spent the season in Nice, and was a well-known figure there. He was a competitor in nearly all the big automobile races, and on one occasion won the La Turbie Hill Climb in the tourists' category. He also during the same year made records for the mile and kilometre with standing start. The funeral took place on Monday at his home.



The Route of the Ardennes Race.

THE destruction of the greater part of the Daimler Motoren Gesellschaft Works at Cannstatt, near Stuttgart, in the very height of the season, took all the automobile world by surprise at the beginning of last week. It has not been possible to establish the origin of the fire; but so inflammable were the materials all around, that there was little or no chance of saving anything except the machine tools. There were at the time about seventy cars in course of construction in the great assembling hall, and all these were completely destroyed, including the 90-h.p. cars that were being prepared for the Gordon Bennett contest. It will be from three to four months before these cars can be replaced; but fortunately the company has new works in course of construction, and these will enable them to gain the lost time quicker than would have been the case had they not

had these new works in hand. The new works occupy a superficial area of 120,000 square metres, and are situated at Untertürkheim. The Government of Wurtemberg offered to put at the disposition of the Cannstatt Company locomotive works at Esslingen. It is here that the cars will be finished for the present. The losses by the fire are estimated at 2,000,000 marks, which sum is covered by insurance. About 900 workmen have been thrown out of employment by this disastrous fire, but more than half will be able to commence work again very shortly, and towards the middle of July they will all be at work again.

It has been decided by the Cannstatt Company to compete in the Gordon Bennett race, notwithstanding the loss of their racing cars. They will therefore put in the field three 60-h.p. cars, which will, it is now reported, be driven by the Baron de Caters, Mr. Foxhall Keene, and M. Jenatz; MM. Degrais and Hieronymous will be substitutes.

THE A.C.B. has reconsidered the question of the Circuit des Ardennes, and decided after all to hold the event on the 22nd and 23rd of this month, instead of leaving it over until the later date. This decision has been arrived at because the authorisation is already given to hold the race, and it is feared that a new authorisation may be refused, so that it is judged better to hold the event and take the chances. The greatest precautions, however, are to be adopted. The whole of the road is to be closed to traffic during the race. All the side roads are to be barred, and every turning is to be tarred. The competition will commence on the morning of the 22nd with the heavy car section, which will start at 3 o'clock in the morning. The race for the heavy cars will be finally closed at noon, and half an hour later the light cars will be started off. On the 23rd, at 7 o'clock in the morning, the voiturettes will start, and they must all have finished by 1 o'clock, when the motor-cycles will take their turn. All cars must be at Bastogne Station on the 21st inst., at 9 o'clock in the morning, in order to be weighed. Only three cars of any one make will be allowed.

THE "Auto" is giving a gold medal for regularity in connection with the Circuit des Ardennes. The classification will be made in the following manner:—If several firms have three cars arriving, the three which arrive will be classed by adding together the time taken by the trio. The prize will go to the firm whose cars took the least time. Should only one firm have three cars to go right through, this firm will be the winner of the classification, and so on with two or one. Cars shall be considered to be classed if they have arrived in the time fixed by the A.C.B. The "Auto's" prize will be given without distinction of nationality or category. A challenge cup is being offered by the local committee of Bastogne, and will be handed to the driver of the car that does the best time, irrespective of category. This challenge cup must be won three times to enable it to be kept. There are considerably over 100 entries for the Circuit. They include Jarrott, Mark Mayhew, Rolls, two Wolseleys, and J. Lisle; the latter will drive Mr. Cordingley's Star car. The entries in the motor-cycle section include E. H. Arnott (Werner), Van-Hooydonk (Phoenix), and two Humbers. There will, as usual, be a special train, leaving Brussels the day before the race, and returning the evening of the second day. It is most unfortunate that the force of circumstances has made it necessary for this competition to be held so close to the Gordon Bennett race, and certain it is that some of the larger makers will not be able to give the attention to it which it deserves. It is rumoured that the Mors cars will be withdrawn in view of the preparations for the Gordon Bennett Cup.

THE Aix-les-Bains week begins on the 23rd and ends on the 28th inst., and falls also across the date of the Circuit des Ardennes. The Aix week, however, is not to be in any sense a race week. It is to be a touring competition, where the price

of the car will enter as a most important factor in the comparison. There will be three days of touring, in which about 800 kilometres will be covered, through the most lovely country that can be imagined. There will then be a great automobile paper chase, with 3,000 francs' worth of prizes, and afterwards an exhibition of the cars.

THIS week was to have seen an automobile fete in Paris, in connection with the congress which is being held at the Hotel Pastoret, the home of the A.C.F. The congress, it is true, has taken place, and began on Monday last, when most interesting discussions were inaugurated on the many subjects which interest automobilists. The Club, however, is in mourning for the loss of the comrades who died at the wheel on the road from Paris to Bordeaux, and the fetes have all been put off to another and happier time.

TALKING of the Hotel Pastoret reminds me that the Club have just obtained possession of the next building, so that the already large premises will soon be extended to almost double the accommodation, making the A.C.F. one of the finest Clubs in Paris, certainly in a unique situation.

l'Automobile and La Chambre Syndicale de l'Automobile are considering various suggested tracks. Mr. Walter Lange has unearthed what appears to be a most suitable place for such a track quite close to Paris. It is situated near the well-known hill of Suresnes, behind the Hippodrome at St. Cloud, and is said to be well-adapted for making a track over 10 kilometres long.

LA SOCIETA ITALIANA DI MOTORI DAIMLER is the name of a company which has been formed in Milan, Italy, "to manufacture and trade in automobile motors and machines using such motors." Signor Felice Grondona is president, and the board of directors includes Herr Gustav Fischer and Herr Max Duttendorfer, of the Cannstatt Co.

A PUBLIC service of petrol motor-cars has just been started between Constance and Reichenau, Switzerland. The vehicles used are of 25-h.p., and were built by Messrs. Kaufmann and Company, of Tagerweilen; they have accommodation for twenty persons.

THE Vereinigte Benzinfabriken of Bremen inform us that depots have been established throughout Germany where their petrol and lubricating oil, known respectively by the names of "Stellin" and "Luftrin," may be obtained.



A View of the Smouldering Ruins of the Daimler Works.

THE FIRE AT CANNSTATT.



A Group of Officials of the Company. Herr Jellneck in the Centre.

At a council of French Ministers on Saturday M. Loubet signed a decree appointing a commission to inquire into the questions affecting motor-car traffic.

M. LEON BOLLEE, the designer of the Bollee voiturette, familiar to all motorists three or four years ago, has just completed a new four-cylinder car on modern lines—mechanical inlet valves, honeycomb radiators, etc. A report is current to the effect that Messrs. De Dion-Bouton and Co. will take up the construction of the new car in quantities.

A HILL-CLIMBING competition was held on Sunday last over a 15 kilometre course between Pontassieve and Consuma, near Florence, Italy. The winner of the heavy car class was Signor Florio on a 70-h.p. Panhard (time 16m. 29sec.); Signor Spinelli, on a 16-h.p. Darracq was the first in the light car class (23m. 57sec.). The winner of the voiturette class was Signor Nagliati on a 9-h.p. De Dion.

THE question of motor racing tracks is just now the topic of the hour in Paris. La Chambre Syndicale du Cycle et de

THE French Automobile Club will hold a trial of motor cabs and delivery vans in October next.

THE Turin section of the Italian Automobile Club is organising an international hill-climbing competition from Susa up Mont Cenis, a distance of 23 kilometres, for July 5th.

THE value of the exports of automobiles and parts from the United States during April last amounted to £26,936, as compared with £30,239 in April, 1902. The value for the first four months of the year is given as £178,904, as against £133,746 during the same period of last year.

CAPTAIN KENLON, of the Manhattan fire brigade, has recently suggested that municipalities in giving concessions to electric tramway and lighting companies should stipulate in the contract that leads should be run from their circuits to every fire plug on the route. Electric fire engines could then be adopted, the pumps of which could be operated by merely slipping a spring jack into contact with the leads, terminating in some portion of the fire plug, while the traction could be obtained by means of a storage battery, just as with electric motor-cars.

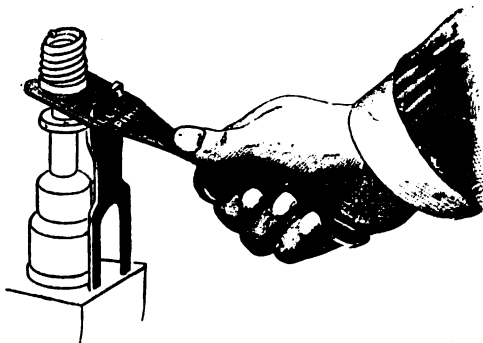
SOME USEFUL NOTES.

THERE are a large number of people, both automobilists and prospective automobilists, who have rather hazy ideas as regards the wear and tear of the various parts of a motor-car, so a few words on this subject will perhaps not be out of place. Let us commence with pneumatic tyres. If a set of good tyres are treated well they should last a good two years and a half of average running. By "treating well" we mean not using brakes violently, so as to skid the wheels, and not turning sharp corners at a high speed. The tread should also be watched for cuts, and as soon as there are more than a few, fill them up, so that the wet cannot penetrate and loosen the tread completely. Some people advocate the system of equal wheels, and changing the covers over, but this is a somewhat questionable advantage, as, if a tyre is worn at all badly, and is placed on the front wheel and bursts, a nasty smash may result, since a burst tyre on the front wheel is considerably worse than a burst tyre on the back wheel.

WE next pass on to bearings. The ordinary gun-metal bearings used throughout the gear-box and engine of a car should wear well for ten to twelve months; after that time they should be examined to see how much wear has set in. In the Panhard type of motor-car, the brass that is used for withdrawing the clutch often wears somewhat quickly; it usually requires looking to in three or four months. Ball bearings are practically everlasting; if a ball bearing is going to give out, it will do so almost at once; if not, and it is a good ball bearing, it will never give any trouble at all.

THE life of a chain on a motor-car is a question that depends entirely upon the way the chain is attended to. If two sets are kept, so that there is always a set at hand to replace the running set which have got wet and clogged, and have to be properly cleaned, a pair of chains should then run some 20,000 miles, which represents about a year and a half or more of average running. The change-speed gear of a car in careful hands should easily last three years; and there are many cars running to-day with the same gears they had in between five and six years ago. There are other parts of a car which are liable to wear and tear, *e.g.* steering connections, joints, speed-lever, and striking-lever connections, but the wear in these parts is comparatively slight, and in all good designs easily adjustable.

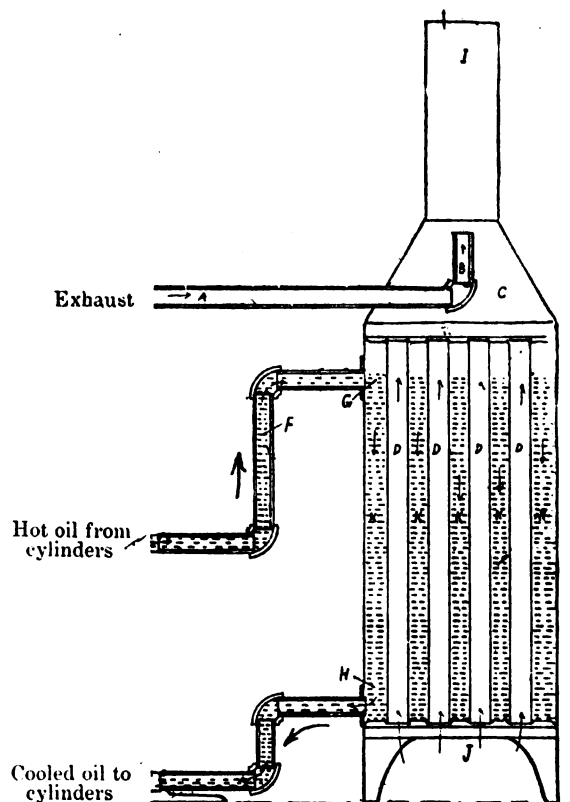
A FRENCH company, known as L'Auto-Stand, of 20, Rue Duret, Paris, has recently brought out the little tool illustrated herewith to facilitate the taking out of exhaust valves. This task, in the case of engines of from 6-h.p. upwards, with their relatively strong exhaust valve springs, is often no light one, and



frequently results in damaged fingers. The new device consists of a lever arrangement made in two parts so as to take up little room when not in use. When placed in position, the exhaust valve spring can be held up by one hand, leaving the other free to take out the key which holds the spring in position. The tool is so arranged that it cannot slip when in use.

COOLING PETROL MOTORS BY MEANS OF OIL.

IN a recent issue we referred to the fact that an American concern was using oil for the cooling of petrol motors. As the freezing of the water in the jackets of motor-car engines is a frequent cause of cracked cylinders in the winter season, any new system that can get over the difficulty is worth enquiring into, so we at once got into communication with the firm—the Hart Parr Company, of Charles City, Iowa—who inform us that they have used oil cooling on engines up to 40-h.p. for the past five years "without a question ever having been raised by any of our customers as to its efficiency." The Hart Parr Company are makers of light petrol traction engines and horizontal and vertical petrol motors, the latter being of the inverted type, *i.e.*, the explosion chamber at the bottom and the crank shaft at the top. The jacket of the engine is in direct communication on top and below with a radiating tank in the form of an upright tubular boiler, a large number of tubes D D D passing up through it. The oil is caused to flow by a centrifugal pump from the upper



or crank shaft end of the jacket through the pipe F to the top of the tank, which it enters at G, and returns to the jacket through the lower connection pipe. The exhaust from the engine is led through the pipe A into the dome above the oil tank and is discharged through the nozzle B into a stack surmounting the tank. The suction created by the upward discharge of the exhaust into the stack causes a strong upward draught of air through the tubes D D D, thus facilitating the radiation of heat. This arrangement also aids in silencing the noise of the exhaust. The radiator is sealed air tight, and as there is no waste or diminution of the oil the original supply furnished with the engine should last as long as the engine itself. The cylinder is kept sufficiently cool for the successful operation of the engine under all conditions of weather, when worked under full load continuously for any number of consecutive hours. The main advantage of using oil for the purpose of cylinder cooling is, of course, that it will not freeze in cold weather, and it would be interesting to have some experiments carried out with it on a modern motor-car, especially as to whether it would be practicable to direct the exhaust upwards.

HERE AND THERE.

A SERVICE of motor-cabs is about to be started in Munich.

SIR CONAN DOYLE has been elected a member of the A.C.G.B.I.

THE Swiss Automobile Club has now 439 members, who, among them, own 550 cars.

ARRANGEMENTS are in hand for the holding of a motor-car race between St. Petersburg and Moscow.

PUBLIC services of motor-cars have just been started between Cadiz and Algeciras, and between Navarra and Puente La Reina, Spain.

WHEN next he goes to sea Lord Charles Beresford will take a motor-car so that he may take land trips at places where the fleet may call.

MR. J. DUNCAN ROBERTS, of the firm of Messrs. Cox and Roberts, engineers, Nagercoil, has imported the first motor car into Travancore, India.

MESSRS. RUBERY AND COMPANY, of Darlaston, South Staffordshire, have got their hydraulic press at work in the manufacture of automobile frames.

HERB E. ENGLER, the president of the Frankfort-am-Main Automobile Club, is about to make a tour through Italy and the South of France on his 24-h.p. Darracq car.

MR. R. E. PHILLIPS, who is looking after the time-keeping arrangements in the Gordon Bennett race, will be glad of the help of volunteers to assist the timekeepers at the various controls.

MESSRS. MANN, EGERTON AND COMPANY, of Norwich, had a very large attendance at their recent auction sale, and Messrs. Spelman sold a goodly number of motor-cars, and motor-bicycles.

THE London Autocar Company, Limited, send a new catalogue of their motor-car and motor-cycle accessories. Within its forty pages are enumerated practically everything required by the up-to-date motorist.

FROM the Mobile Motor and Engineering Company, Ltd., Birmingham, comes a very complete catalogue of motor and motor-car accessories. It gives illustrations and brief particulars of the Waddington motor-cycles and cars, in addition to lamps, horns, tyres, pumps, etc. A couple of pages are devoted to useful hints to motorists.

MESSRS. R. REYNOLD JACKSON AND COMPANY have sent us an illustrated leaflet of the "Jackson Popular" car they have lately introduced. It is a neat little vehicle of French construction, with 6-h.p. De Dion engine and three speeds forward and reverse; the transmission being by a cardan shaft and bevel gear to the rear live axle.

IN the House of Commons, last week, Mr Akers-Douglas, replying to Mr. Weir, said that 191 motor-car accidents had occurred in the metropolis during the present year, resulting in the death of ten persons and in injury to 204 persons. Of these numbers one person driving in a motor-car was killed and thirty-seven so driving were injured.

AT the last meeting of the Scarborough Rural Council, Sir Everard Cayley moved that the County Council be asked to put up notice boards at all dangerous places in the district, warning motor-car drivers of their risk, and that the Rural Council put up similar notice boards on roads within their jurisdiction. Mr. Foster seconded, and the resolution was carried.

THE Farman Automobile Company, Limited, under new management, with Mr. A. Pereno as managing director, are making rapid strides. They have opened a garage at Skindle's Hotel, Maidenhead, in which is a complete repair shop, and all accessories can be purchased there. They are also letting out cars for hire. Other garages will be opened in different holiday centres by the company as the season advances.

THE Tourist Information Bureau of Dublin is doing much to help motorists to secure hotel accommodation during the Irish Automobile Fortnight.

THE proprietor of a motor-omnibus at Bournemouth has been fined 10s. including costs for having allowed a motor-omnibus on a public stand for a longer period than ten minutes.

A motor omnibus company is about to be formed in Cape Town, and the prospectus is being eagerly awaited. Its outlook is regarded as a very good one in view of the favour with which automobiles have been received.

AT a meeting of the Poona Cantonment Committee, it has been resolved to regulate the speed of motor-cars and motor-cycles in that city. Nine miles per hour was laid down as the maximum speed for automobiles.

MR. P. O'SULLIVAN, of Great George's St., Cork, is making a special feature of motor-car cushions in Rezone leather, which is claimed to be less easily damageable than leather, while having the merit of greater durability.

ACCOMPANYING the latest catalogue issued by Messrs. Joseph Lucas, Limited, comes a useful booklet on Motor Lubrication, containing many practical hints as well as some information concerning the Wells-Lucas motoils. A copy will be sent free on application by motorists.



The 14-h.p. Brooke Car, with Pump Circulation in place of the usually-fitted Estcourt Coolers.

PROFESSOR HUBERT VAN HERKOMER, the well-known artist, has acquired from the British Automobile Commercial Syndicate, Limited, a 10-h.p. Panhard car, upon which he intends to tour in Germany. The car is fitted with a Clement-Rothschild body, over which is a canopy giving the vehicle a very fine appearance.

THE Chessington Parish Council has drawn attention to the excessive brilliance of the acetylene lamps carried by motor-cars at night. It is asserted that they constitute a real danger from the effect upon the eyes of both human beings and horses caused by the intense darkness which follows when the lights have passed.

MESSRS. HUMBER, LIMITED, are about to put a popular-priced two-seated car on the market. The vertical engine is of 5-h.p. and is located under a bonnet in the fore part of a tubular frame. Two speeds forward and a reverse motion are provided, the power being transmitted to the rear live axle through a cardan shaft and bevel gearing.

THE Kent Automobile Club will have its first run to-day (Saturday). Members will meet at Charing, where tea will be taken at 4 p.m. The club is meeting with splendid support throughout the county, and the number of members is rapidly approaching one hundred. Gentlemen wishing to join the club should communicate with the hon. secretary at the headquarters, Star Hotel, Maidstone.

PROF. HELE-SHAW, of Liverpool, has lately become the possessor of a 24-h.p. Darracq car.

THE Darlington, Durham and North Riding Chamber of Agriculture has declared in favour of the numbering of motor-cars.



Photo by]

Tunbridge Wells Common. (See page 297.)

[Photocrom Co.

AN automobile club has been organised in Mexico City. Sr. Jose Ives Iimantour, the Mexican Minister of Finance, is the honorary president of the Club.

LISTS of automobile casualties are now appearing in the daily journals in which mishaps to motor-cycles on the track are set forth as though they were ordinary accidents on the road.

THE Tramways Committee of the Leeds City Council have decided to purchase a motor derrick for the use of the men engaged in repairing the overhead wires. A motor-car will be adopted in the first instance, and the purposes of a derrick will be served by the construction of a raised platform upon it.

LIEUT. W. P. WINDHAM, one of the King's messengers, has sent a copy of a useful little book he has just completed, entitled "Wrinkles on the Management of the Darracq Cars." In the preface the author explains that his remarks are wrinkles, and not rules, with regard to the management of Darracq cars which have been gained from actual experience. They are chiefly directed to the vehicles with 6½-h.p. and 9-h.p. single-cylinder engine, although they apply equally well to the others, including the new 8-h.p. single cylinder and 9-h.p. and 12-h.p. double-cylinder cars, the differences between the patterns of 1901, 1902, and 1903 being briefly explained. The wrinkles are comprised within 51 indexed paragraphs, which, while of particular interest to owners of Darracq cars, contain many hints which will be found useful by motorists generally. The booklet can be obtained from Barnes' Motor Depot, Battersea Rise, London, S.W.

THE Roots Oil Motor and Motor-car, Limited, having acquired larger premises at Chicheley Street, York Road, Westminster Bridge Road, S.E., are about to open them as show rooms for the sale of their own types and as a repair shop and garage for all types. The premises have accommodation for about 100 vehicles.

PROFESSOR W. H. PICKERING, the astronomer of Harvard University, who has been investigating problems in aeronautics, is now at work upon the construction of a new airship. He has placed an order with the Duryea Power Company for a 30-h.p. six-cylinder engine, which, ready to run in all respects save water, fuel, and tanks to contain them, weighs only 200 lbs.

LORD ESHER employs a motor-car in his trips from Orchard Lea, near Ascot, to Windsor, where he is Inspector of the Castle.

THE other day, at the depot in Westminster of the Petrol Motor Power Company, we had an opportunity of inspecting the first of a new type of petrol car they are putting on the English market. They are to be known as the Martini, being built in Belgium to the designs of the well-known M. C. Jenatzy. There are a number of special features in the cars, prominent among which are the magnetic clutch and the ignition, to which we hope to refer in a subsequent issue. In the meantime we may mention that the car we examined was of 24-h.p., being fitted with a four-cylinder motor, with mechanically operated inlet valves, four speeds, and chainless transmission. A 12-h.p. two-cylinder car on similar lines is expected over in a few days.

MEMBERS of the Pocklington (Yorkshire) and District Agricultural Club have passed a resolution protesting against the abolition of the speed limit for motor-cars. A similar suggestion was made at the last meeting of the Warwickshire Chamber of Agriculture, but Mr. F. E. Muntz pointed out the impossibility of farmers attempting to limit the speed of motor-cars to twelve miles an hour in the open country.

NEAR the Marble Arch, in Oxford Street, is Automobilia, a fine showroom for motor vehicles, some idea of the interior appearance of which can be gleaned from the accompanying illustration. Automobilia, of which Mr. Fordyce is the managing director, is something more than a depot for the sale of all types of cars, for here vehicles can be hired for after-

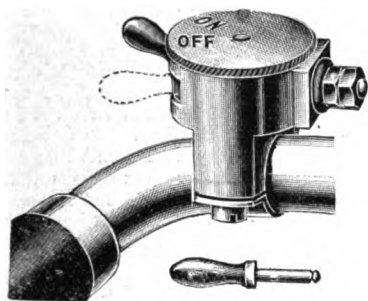


A West End "Garage."

noon runs or daily trips, a large staff of English and French drivers being always available. Here, too, accumulators can be re-charged and petrol and spare parts obtained, while repair work is also undertaken, a pit and a washing department being part of the equipment. On the occasion when our photograph was taken the showrooms were less well filled than usual, but there was a good show of Panhard, Darracq, Renault and other cars.

MOTOR-CYCLING NEWS.

HEREWITH we give an illustration of the patent switch for motor-cycles, lately introduced by Messrs. Mason and Brown, of Leicester. Hitherto the general method has been to have a switch enclosed in the handle-bar tube, the contact being made



by turning one of the handles, an arrangement which is not without its drawbacks. The new switch consists of a nickel-plated brass case, rigidly secured to the handle bar by means of a rounded plate and screws, forming the earth connection to the frame. The other connection to the wire is made by means of a nut on the outside of the case, and a pin carried through to the inside, being insulated by an ebonite bush from the remainder of the case. The contact is made by an incomplete circle of strong German silver inside the case, which is moved backwards and forwards by means of the handle as shown in the illustration. When the handle is at position marked "On" the circuit is completed by means of the spring and the inner end of the terminal receiving wire; when at "Off" the contact is definitely broken. When the machine is not in use the handle shown separately at the bottom of the illustration can be removed, thus obviating the risk of the battery being run down, and also obviating the necessity of a separate interrupter plug. The handle can only be withdrawn when it is in the "Off" position. The top cap is removable for examination purposes, while we may add that the switch is practically watertight, thus preventing short circuiting through wet getting in.

MOTOR-CYCLISTS who use trailers in connection with their motor-bicycles cannot be too careful in seeing that the connection between the two is securely made. We mention this as a Manchester lady met with a nasty accident last week near Northwich. Her husband was riding a motor-bicycle, which became detached from the trailer in which she was seated, the lady being thrown out and badly bruised.

THE New Hudson Cycle Company, Limited, of Birmingham, have sent us a copy of a little handbook they have just issued; it gives particulars of the new Hudson motor-bicycles, while about fifty pages are devoted to descriptions of the various parts of the machine, and to a number of hints which will be found useful to those who have lately joined the ranks of motor-cyclists.

TO-DAY (Saturday), the Nottingham Motor Cycle Club will hold a run to Burton-on-Trent, where the members of the Birmingham Motor Cycle Club will be met. Church Stretton is the destination of to-day's run of the Wolverhampton Motor Cycle Club.

MOTOR-CYCLISTS must be careful with regard to the renewal of licenses. Recently we reported the activity of the authorities at Bristol. Now we learn that the first prosecution by the Inland Revenue authorities for keeping a motor-cycle without a licence has just been heard at Coventry, when a well-known local resident was fined 10s. and costs. The defence was that a licence was taken out last November, and defendant thought it would cover twelve months from that date. Another case has also occurred at Oldham, where a plea of ignorance of the law secured a reduction of the penalty to a shilling.

MESSRS. JAS. DAWSON AND SONS, the makers of the Lincoln

belt, ask us to mention that castor oil is very detrimental to the long life of these belts. Castor oil has the effect of dissolving the cement which holds together the layers and joints of the leather, with the result that the belts soon come to pieces. Lincoln belts are sent out ready for use, and a special dressing for application is supplied by the firm at a small cost.

COMPLAINTS are being made as to the excessive tolls for motor-bicycles in some parts of North Wales. At the gate on the causeway between Portmadoc and Penrhyndeudraeth a motor-cyclist was charged ninepence for himself and machine, while at Pont Briwofod, on the way to Harlech, sixpence was levied.

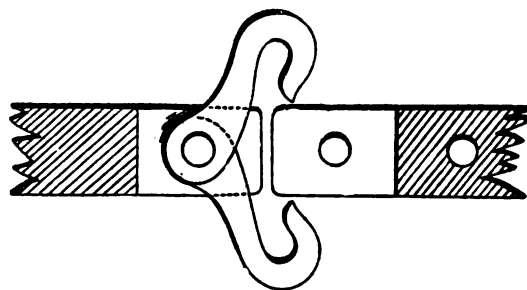
AN important meeting of the General Committee of the National Cyclists' Union was held on Saturday last, when a long discussion took place on the question of motor pacing in open amateur events. Eventually the committee decided that no further permits should be granted at present, whilst permits already granted for forthcoming events should be cancelled. Motor pacing will be allowed in club events, as hitherto, subject to conditions to be drawn up by the sub-committee appointed for that purpose.

THE Motor Cycling Club will shortly hold a series of fifty miles non-stop trials, open to members only, for medals, which are being presented by a member who wishes to remain anonymous.

THE Singer Cycle Company, Limited, has just finished the first of a new type of 3-h.p. chain-driven motor-bicycle. Mr. Perks recently tried its hill-climbing capacities on Edge Hill, and accomplished the ascent at a good speed without pedalling.

THE motor-cycle is beginning to be seen in Australia. There are now three or four in Geelong, Ballarat, and Bendigo, and in the smaller towns the old cycle depots are changing their signs from "Cycle Repairs" to "Cycle and Motor Works." All this heralds, remarks the "Australian Cyclist," the advance of the new industry.

A NEW belt fastener, designed to fit any motor-cycle driving belt, has lately been put on the market by Mr. A. H. B. Sharp, of Lincoln. As will be seen from the accompanying illustration, which



shows the actual size of the fasteners, it takes the form of a couple of hooks, which are pivoted in one end of the belt, and which engage in contrary directions with a pin applied in the other end of the belt.

AT Brighton two motor-omnibuses have just been licensed.

AN electric fire service wagon has just been added to the equipment of the fire brigade of St. Gilles, Brussels. It carries eight firemen, and the necessary hose reels, scaling ladders, etc.

FROM the Cleveland Automobile Club (U.S.A.) comes a neatly got-up prospectus, giving the rules and objects of the club. The last two pages are devoted to some remarks on the regulations which exist in Cleveland with regard to automobile traffic, the Club offering its support in seeing that the regulations are adhered to. Accompanying the prospectus is a list of motor-car owners in Cleveland, whose total is now close on 700.

CORRESPONDENCE.

THE MANNERS OF HORSE DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—There can be no question that the motor-car is rendering good public service in exposing the carelessness of drivers of horses. It has been repeatedly shown that a large proportion of the accidents ascribed to motor-cars are due to the stupidity of drivers who habitually drive with loose reins, so that quick control of their horses is impossible, or are themselves more frightened than their horses at the appearance of an automobile. The majority of runaway horse incidents and accidents are undoubtedly caused by this same lack of attention to their business on the part of those entrusted with the driving of horses, for if a frightened horse is properly checked and pacified before he is terror-stricken and unmanageable, his running away can be averted. It is generally conceded that motor-cars have a right to the public highways, and that the motorist is bound by the same rules of the road as govern the driver of animals, the unwritten law of courtesy further requiring that he should exercise all reasonable caution to avoid accidents due to the frightening of horses. An equal responsibility, however, rests upon all owners of horses which are driven through the streets to take all reasonable precautions to avert accident through the horses taking fright at motor-vehicles. The driver of a horse—the horse's owner is, I take it, responsible for the driver—is assuming a moral and legal responsibility when he brings an animal upon the highway, where all have equal rights with himself, and the time has arrived when this responsibility must be recognised and drivers held accountable for the animals they guide. Justice demands that drivers of horses be treated in the same manner as motorists. Uncontrollable animals should not be allowed on the roads, and for accidents that are ascribable to carelessness somebody should be made to pay.—Yours truly,

PROGRESSION.

THE STEERING OF MOTOR CARS AND GYROSCOPIC ACTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—When travelling on a high-power motor-car, if the driver incautiously take a bend of the road at too great a speed the car is overturned, or the wheels collapse under the tremendous strain, or (in the case of a racing car having a low centre of gravity) the car is forced violently outwards against any obstacle, in spite of the efforts of the driver to keep an inside course, the result being a bad smash, as in the recent fatal accident to Count Zborowski. In that lamentable occurrence there were all the conditions necessary to produce powerful gyroscopic action.

In view of that accident and many similar ones, the drivers of new or untried cars should be particularly careful in the forthcoming Gordon Bennett race, because there are some ugly corners on the course; consequently, competitors who mean business will have to run great risk, owing to the fact that the excessive side strain cannot be calculated or controlled by the steering wheel.

What I wish to call particular attention to is that these lamentable occurrences are generally supposed to be caused by the centrifugal force which is created by taking the curve at too high a speed. I admit that to a great extent this is so; but the following experiment will prove that the gyroscopic action set up in the road wheels and in the engine flywheels must seriously affect the steering of fast cars.

Take a spare wheel, preferably a light motor-car wheel, and having grasped the axle firmly with both hands, get a friend to spin the wheel as rapidly as possible by striking the spokes; or, should an engine be available, place the tyre against the flywheel, and when the motor-car wheel is revolving at a high speed it will be noticed, firstly, that the wheel can be moved easily in a straight line, as if fixed to a motor-car travelling on a straight course; secondly, bodily translation of the axis parallel to itself produces no gyroscopic effect, but any other movement is powerfully resisted (other than in its plane of revolution). This resistance increases in proportion to the speed, diameter of wheels, rate of revolution, and sharpness of curvature. The numerical value of these gyroscopic effects under such varying conditions could only be ascertained by experiment; and even then allowance would have to be made for centrifugal force and non-synchronous action of the engine, which sometimes occurs at certain critical speeds. I mentioned this matter to an engineer who is credited with being an expert in mathematical analysis, and his remarks showed how little this subject is understood. He said: "In the case of a motor vehicle turning a corner, the steering wheels have already been diverted from their original plane of motion before this gyroscopic action takes place." Let me point out that it is the very act of diverting the wheels from the original plane of motion which produces the action to which I refer.

In turning a corner, the gyratory action generated in the four road wheels and in the flywheel of the engine has to be counteracted, thus putting a strain upon the road wheels and steering gear, quite separate and distinct from, and additional to, those effects caused by centrifugal force.

One remarkable peculiarity of this gyroscopic action is that it has no tendency to upset the car, as is the case when centrifugal force comes into action from excessive speed round a sharp curve, or from bad steering. On the other hand, it tends to keep the car, as one might say, straight on the road. An express train travelling at a high speed has the same tendency to continue running in a straight line; but it has this advantage over a

motor steered by hand, that it is compelled to follow any curve because it is guided by the rails; but even with this additional security engineers know there is danger of derailing, and generally slow down when nearing a curve.

The flywheel of a petrol motor being usually heavier than the road wheels, and the speed very great, this gyratory force is much more evident in the flywheel and other revolving parts of the engine than it is in the road wheels. It is the position of the engine on the car to which I attribute this gyratory disturbing effect upon the steering. Speaking purely from a racing point of view, I would suggest that the engine be placed (for experiment) in the centre of the car, where there is the least turning movement, with the cylinder fixed horizontally, and the shaft vertically, which would allow the car to turn in any direction without altering the plane of revolution in the flywheel. The diameter of the road wheels is an important matter, because increasing the diameter of the wheels unnecessarily exaggerates the defects which I have pointed out. I admit that any radical alteration in the position of the engine, etc., presents serious difficulty; but I am of opinion that some alteration is urgently needed to insure the safety of fast cars. Any structural alterations which will reduce this tendency would at the same time greatly increase the durability of motor-cars, especially in regard to tyres.—Yours truly,

PERCY PITMAN.

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Permit us to support the views put forward by Messrs. James Rickard and Co. concerning motor-car racing. Whilst it has certainly helped us in our earlier stages of development, it has now by far overshadowed its usefulness, and is rather a menace to and an incubus upon the industry than otherwise. Reliability trials are of infinitely more practical value, where a close and accurate record of everything done and happening to a car is made and published, than races in which speed is the one and only ultimate end. Take the Paris-Madrid affair. What have we learned from it save that half the cars which started collapsed, or, at any rate, found it necessary to retire before reaching Bordeaux? With the exception of the most notable cases, where accidents resulted in fatalities, we have learned nothing concerning these breakdowns. Accidents of this character teach us nothing in construction. One writer says he passed forty wrecks on the way back. What happened to them? Did they all collide or run off the road? Doubtless the makers know, but whatever lesson they may learn individually from the failure of their cars, it is fairly certain that they will keep it to themselves, and all the inquiring public seeking knowledge can conclude is that if 40 per cent. to 50 per cent. of cars built specially for the purpose fail to complete a 300-mile journey, can they expect better results in the touring cars made by the firms in question? The development of speed, too, is no longer desirable. We have long passed both the practical and the safe limits, and racing, in which the car that gets there first—in other words, the fastest car—wins must develop the speed features of cars to the exclusion of all else. So far as the industry is concerned, it would be none the worse, but rather the reverse, if the construction of speed cars were prohibited altogether, for racing is an enormous tax upon the industry—the value of the derelicts strewn along the road to Bordeaux was estimated at £70,000—and few if any makers profit by it; whilst if the trade generally are compelled, in order to keep up with the procession, to take part in these orgies, the buyer of the touring vehicle will have to foot the bill in the end.—Yours truly,

THE DURYEA MOTOR CARRIAGE COMPANY.

COST OF UPKEEP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I send you costs of upkeep of my two-cylinder 6-h.p. Daimler car since I commenced running it in the spring of 1899:—Year 1899, total costs, £3 5s. 8d.; year 1900, total costs, £53 3s. 10d.; year 1901, total costs, £49 15s. 8d.; year 1902, total costs, £9 0s. 10d.; year 1903, total costs, £31 18s. 6d.

These figures are taken from my business books, and are inclusive of everything I have paid for the upkeep of my car, but exclusive of oils and any trifling payments for a temporary repair when touring. These small payments, however, have not exceeded a few shillings at a time, and certainly £1 per annum would more than cover them.

The 1899 account was made up of: (1) costs of repairs through being twice run into by horse-drawn vehicles, and (2) general overhauls on three separate occasions during the summer and autumn. As I had no engineering knowledge, and was not familiar with my car, I thought it better to send it to the motor works periodically to have it examined. The 1900 account comprises: (1) £11 17s. 6d. for overhaul at beginning of year and for new cylinder head; I allowed frost to crack the cylinder-head, not being aware that there was danger from frost and that I should have run the water off; (2) £6 10s. for new gear wheels; (3) £6 6s. repainting and japanning; (4) £5 7s. 6d. overhauling gear; and (5) £11 13s. 6d. new tyres for hind wheels. The 1901 account comprises: (1) £4 16s. 6d., repairs necessitated through my having overturned and damaged car; (2) £4 10s. new water-tank; (3) £5 18s. overhauling and two new gear wheels; (4) £15 10s., Clarkson patent radiator (there was no radiator on my car when I purchased it); (5) £8 12s., valves, ignition tubes, burners, springs, and parts purchased in order to have everything in good condition for the

Glasgow Exhibition 535 miles trial runs, in which I took part. The 1902 account comprises: (1) £2 17s., repairs to radiator and pump, etc.; and (2) £5 6s. 6d., ignition tubes and parts. The 1903 account comprises: (1) £13 9s. 8d., thorough overhauling of engine and gearing and all parts, and having compression plates put on; (2) £5, repainting and varnishing; (3) £2 for parts, mostly necessitated through damage to car by fire. The engineer who has just overhauled my car informs me that the engine and whole gearing are in as good condition as the day I purchased the car, so that I do not anticipate any serious outlay for further repairs this season.

Only a novice would incur the accounts I did in 1900 and 1901. I give you my actual experiences and costs, leaving your readers to discount from these or do otherwise as they prefer. I have had to buy my experience, but I do not regret it. I have not kept an account of the mileage I have run, nor what it has cost me for petrol and lubricants during these five years. My books, however, show accounts for £35 paid for petrol, and fully £10 for lubricants, but as I occasionally purchased oil while on the road this does not represent my total costs for oil. To give a wide margin, however, I think it may be fairly taken to represent a mileage somewhere between 20,000 and 30,000. As I do not keep a man, and attend to the washing and cleaning of the car myself, the only other expenses I have are the carriage licence and insurance. With the experience I have now had, I hope in future to attend to all minor repairs myself and to keep my annual repairs bill at a considerably less average than £27 16s. 11d., the average of my first five years' running. Hitherto I have sent my car to the motor works for every little repair.

In the foregoing figures it will, of course, be observed that I include items which might fairly be stated as capital expenditure and not as repairs. For example, the radiator is clearly a capital outlay, but I am simply stating the actual outlays in which the possession of a motor-car has involved me during the past five years.—Yours truly,

JAMES BURNS.

THE PETROL-ELECTRIC CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was very pleased to see a letter in your last issue on the subject of electric transmission, and I should be still better pleased to see the question thoroughly gone into and discussed, as it seems to me that electric transmission is exactly what is required to bring the petrol car to (if I may use the word) perfection.

The Lohner-Porsche system is open to several objections—at least, I have heard so from several people. Your correspondent "G. B. P." states that they are difficult to start on a steep hill, and I can certainly bear him out in this statement, as I remember seeing one some time back at Biarritz in difficulties on a hill—it was driven, I fancy, by the late Mr. Loraine Barrow. How does the Fischer system answer? We do not seem to hear much about it.—Yours faithfully,

FLASH.

NOVICE writes:—"Can any of your readers explain the reason I cannot get the engine on my Baby Peugeot car to start? If I open the compression tap it will spark first-rate, but when I close it it will not explode at all. If I half close the tap it explodes two or three times and then stops. The accumulators are fully charged, the compression is very strong. I have had the carburettor and mixing chamber off and they appear to be in proper working order."

H. J. K. T. writes recommending Plaxine as an effectual and satisfactory cure for slipping brakes. It leaves the parts clean, and makes them grip at once. A friend tells him that he keeps his brakes always dressed with a few drops of Plaxine, and never has the slightest trouble with them.

CLUB NEWS.

LINCOLNSHIRE.

THE Lincolnshire Automobile Club had a successful meet at Market Deeping, midway between Spalding and Peterborough, on Saturday afternoon. The day was dull and showery, and some of the motorists who had come from a distance reported that they had encountered heavy rain. The roads, however, were good, and excellent runs were enjoyed. The Club were entertained by Mr. and Mrs. Geo. Linnell, at whose invitation the members assembled at Fron Hall, Market Deeping. Amongst the motorists who attended were Mr. and Mrs. George Linnell (Market Deeping), Mr. and Mrs. Charles Pennell (Lincoln), Mr. G. H. Mays (Bourne), Dr. Benson and Mr. Carter (Market Deeping), Dr. and Mrs. Cragg (Billingborough), Mr. Pick (Stamford), Mr. and Mrs. Smith (Thrapston), Dr. and Mrs. Husband (Crowland), the Rev. and Mrs. Taylor (Boston), Dr. and Mrs. Gilpin (Bourne), Mr. F. D. Tryon (Stamford), Mr. Henry Tryon (Market Deeping), Mr. T. S. Shipley (Bourne). In addition there were seven Spalding motor-cyclists present—Messrs. W. White, H. Pennington, J. Peake, W. Jepson, J. Savage, C. Gibson, and G. Hercock. Mr. and Mrs. Linnell entertained the visitors in a very hospitable manner, and altogether the day, despite the rain, was a very enjoyable one.

MANCHESTER.

THE Manchester Automobile Club had a run on Saturday last to the Brine Baths Hotel, Nantwich. This run has always been popular with the Club owing to the number of routes leading to Nantwich. It is also a sort of half-way house to Chester and North Wales. Unfortunately the weather was very bad, and some of those who had the courage to start out turned back. The Hon. Secretary arrived at Nantwich some little time before any other cars turned up, and was afraid that his was going to be the only car there, but as the time for dinner drew nearer car after car arrived until a total of thirteen was reached, and forty enthusiastic motorists who had braved the elements sat down to dinner.

MARKET DEEEPING.

THE members of the Market Deeping Automobile Club have been entertained to a dinner at their headquarters, the New Inn, by the president, Dr. Benson, J.P. Among the guests were Messrs. E. Sutton, J.P., Tryon, Pick, Moor, Dalton, Greenfield, Carter, Stevens, and Wilson. After dinner, the Pick Motor Co. exhibited six of their new cars, and demonstrated the action of their new automatic governor on the engines.

THE SCOTTISH CLUB (WESTERN SECTION).

A MEET of members and their friends took place on Saturday last at Tarbet, Loch Lomond. The day was fine, though somewhat cold, and the roads were rather dusty. About thirty cars were brought to the meet, and after tea in the hotel and an hour or two spent by the loch side, the party returned to their several destinations. The bulk of the Glasgow cars went and returned via Alexandria and Luss, but a number took the Garelochhead and Whistlefield Hill route one way, while others crossed the hill from Luss to Helensburgh, or returned via Drymen and Bearsden. The following motorists were present: Messrs. J. W. W. Drysdale, Glasgow, 8-h.p. Albion; J. Milne-Barbour, Greenock, 10-h.p. Wolseley; H. Barbour, Ireland, 22-h.p. Daimler; J. Adam, Glasgow, 10-h.p. Wolseley; D. H. Anderson, Albion; H. E. Smith, 10-h.p. Argyll; L. G. Seligmann, 7½-h.p. Wolseley; Fred Lobnitz, 10-h.p. Argyll; J. Hunter and C. J. Campbell Steen, 10-h.p. Wolseley; W. Holms-Kerr, 10-h.p. Panhard; Wm. Weir and J. R. Richmond, 24-h.p. Darracq; H. Prosser, 10-h.p. Wolseley; John Shaughnessy, 8-h.p. De Dion-Bouton; T. B. Murray, N. O. Fulton, and J. F. Henderson, 12-h.p. Albion; H. M. Napier, 10-h.p. Wolseley; Alec Govan, 10-h.p. Argyll; C. E. Ball, 16-h.p. De Dietrich; G. H. Christie, 12-h.p. Arrol-Johnston; A. G. Rennie, Clement; R. J. Smith, 10-h.p. Wolseley; J. B. Shanks, 12-h.p. Daimler; W. McOnie, 7-h.p. Panhard; Ebenezer Blakely, Duryea; and W. Hunter Steen, 9-h.p. Darracq.

YORKSHIRE.

MANY members of this Club met at Harewood on Thursday of last week in order to view Harewood House and grounds, which were open for inspection. They spent a thoroughly enjoyable afternoon, the weather continuing fine and the roads in the surrounding districts being in excellent condition. Amongst those present were Messrs. Gwyne, Watson, and Wilson, with Mr. Hey, on his 24-h.p. Spyker car; Mr. and Miss Armitage, 11-h.p. Clement; Mr. Owen Brooks, 2½-h.p. bicycle; Mr. C. Parker, 4½-h.p. bicycle; Mr. and Mrs. Beevers and Mrs. Jessop, 8-h.p. M.M.C. car; Mr. and Mrs. Booth, 6-h.p. Prunel; Mr. J. V. Kinsley, Oldsmobile; Mr. Steele Benz; and Mr. and Mrs. Exley, 6-h.p. Beaufort car.

FURIOUS DRIVING CASES.

IN addition to being fined for alleged furious driving, Mr. G. H. Kirk was mulcted in a similar sum for not stopping his car when a restive horse was in sight.

At Croydon, on Saturday, Alec Ross was fined £5 and costs for driving on May 16th a motor-car at the rate of nearly 22 miles an hour at Wallington, down a hill marked "Dangerous to cyclists." The chairman of the Bench said that he trusted Mr. Christy, owner of the machine, who was in the car, would reimburse defendant.

MR. JAMES E. COLLIN, who was fined £5 at the Suffolk Petty Sessions for driving a motor-car at a greater speed than allowed by law, has applied for leave to appeal against the decision of the Court at the next Quarter Sessions for the county of Suffolk. Leave was given, and Mr. Collin entered into a bond of £25 to proceed with the appeal.

IN the case of Major Stapylton, heard at Knaresborough, it appeared that the offence was detected in an unusual manner. Superintendent Kee stated that on May 30th he was travelling by the 4.43 p.m. train from Knaresborough to Boroughbridge, and when the train was passing over the Ferensby Road railway bridge he saw the defendant riding in his car on the road with another gentleman. Upon reaching Boroughbridge eleven or twelve minutes later witness proceeded into the Market Place, which took him about three minutes, and there he saw Major Stapylton drive up in the car. Witness spoke to him, and told him he would have the distance measured. He did so, and found that from Ferensby Road railway bridge to the Market Place the distance was four miles and 1,364 yards, so that the defendant had travelled at the rate of 19 miles an hour.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Knarborough	G. Walker, Leeds	20	£5, etc.
"	W. Haggie, Sunderland	—	£5, etc.
"	A. Clemshaw, Preston	—	£5, etc.
"	Major Stapylton	19	£5.
Hull	*T. Read, Hull	18	10s., etc.
Wilmslow	C. Lamb, Manchester	25	£10, etc.
Nottingham	G. H. Kirk, Nottingham	—	£5.
Gloucester	G. W. Kenrick, Birmingham	—	£3, etc.
Edinburgh	T. Binnie, Edinburgh	—	£2.
Reigate	G. Daval, Eltham	—	£2, etc.
"	H. E. Garle, Lincoln's Inn, E.C.	—	£2, etc.
"	J. Mann, Paddington	—	£2, etc.
"	D. Pullen, Paddington	—	£2, etc.
"	*R. Maxtead, Norbury	—	£1, etc.
"	*S. Holbert, Croydon	—	£1, etc.
"	*G. Davies, Forest Gate	—	£1, etc.
Havant	Capt. Hope, Hilsea	16	£2, etc.
"	G. Wilder, Stansted	—	£2, etc.
Croydon	A. Ross, Lambeth	22	£5, etc.
Chatteris	G. McKay, Chatteris	—	10s.
Alton	E. de Wilton	—	Adjourned
"	W. Duke, Fordingbridge	20	40s., etc.
"	Mr. E. Van Praag, Croydon	23	40s., etc.
"	Lieut. Champion, Aldershot	30	40s., etc.
"	E. H. Hargreaves, Kensington	2	40s., etc.
"	F. Watson, Basingstoke	23	40s., etc.
Slough	A. M. Fletcher, Knightsbridge	22	£7.
"	W. Du Cros, Regent Street	21	£7.
"	B. Millward, London	22	£7.
"	A. Wastage, London	21	£5.
Worthing	H. Soden, Highgate	24	£5, etc.
"	C. M. Allison, Cavendish Sq., W.	24	£5, etc.
"	J. C. Thornycroft, Chiswick	20	£3, etc.
Newbury	E. H. Fisher, London	26	£5, etc.
Lyndhurst	*C. B. Prickett, Portsmouth	—	Adj'd.
"	*G. Shute, Southampton	20	10s., etc.
Basingstoke	F. Watson	24	£2, etc.
Stowmarket	J. R. Hargraves	16	£1, etc.
Carmarthen	*R. Davies, Maesycrugiau	—	Dismissed
Southampton	G. Oakey, London	—	40s., etc.
"	H. Miller, Hungerford	18	40s., etc.
"	*A. Burt, Southampton	18	10s., etc.
"	R. Grignon	—	paid costs
Horsham	Capt. Hitchens, London, W.	22	40s., etc.
"	H. W. Short, Bromley	—	40s., etc.
Gloucester	W. J. Gordon (driver to Mr. W. G. Canning)	25	£5, etc.
Warwick	A. Tyler	30	£2, etc.
Newbury	F. Partridge, London	23	£2 10s.
Liverpool	*R. Radcliffe, Liverpool	20	10s.
Skipton	V. Ferrand	30	£2, etc.
Leeds	N. Bayliss, Wolverhampton	17	£5.
Preston	H. Holding	18	2s. 6d. etc.
"	*F. Mounsey, Leyland	16	1s., etc.
"	*W. H. Sharpe, Darwen	16	1s., etc.
"	*J. Holland, Lancaster	17	1s., etc.
London, W.	F. Hawkins, Notting Hill	24	£5, etc.
Greenwich	G. Fraser, Blackheath	22	£5, etc.
Penge	*H. Chambers, Beckenham	18	10s., etc.
Richmond	G. Bull, Kensington	—	40s., etc.
Hove	D. M. Weigel, Long Acre	—	£5, etc.
Eastbourne	H. Blackburne, London	25	£3, etc.
"	H. Grant, Windsor	30	£5, etc.
Shoreham	T. H. Stringer, Southampton	—	£5.
"	E. Taylor, Balham	—	£5.
York	R. Fenton, Ribchester	20	10s., etc.
Nottingham	C. Gaulard (driver to Capt. Wemyss)	18	£5, etc.
Ilfracombe	*J. Wylie, Ilfracombe	16	10s., etc.
Warwick	Ballin Hinde, Birmingham	—	£2.
Leamington	*W. H. Burbidge, Coventry	15	£2, etc.
Cannock	E. Roberts	30	Dismissed
Norwich	H. Egerton, Norwich	—	£1, etc.
"	J. White	—	2s. 6d. etc.
Marlboro St. London	H. Walker, Croydon	—	£5, etc.
Marlybone	J. D. Hill, Portland Street, W.	22	£7, etc.
Rollsby	W. Spelman, Norwich	—	£1, etc.
"	H. Chamberlin, Yarmouth	—	£1, etc.

FURIOUS DRIVING CASES.—(Continued.)

Rollsby	M. Brooke, Lowestoft	—	£1.
"	E. Cross, Norwich	—	£1.
Crewe	L. Adams	—	£5.
Norman Cross	A. Elworthy	—	£3.
"	F. Hardy	—	£5, etc.
"	C. H. Gilbert	—	£5, etc.

Where no alleged speed is given it is understood to be above the legal limit.
* Motor-Cycle Cases.

POLICE TRAPS.

It is probable that a police trap will shortly be laid at Bagshot.

ON the Drayton to Taverham road (Norfolk), the police have measured half-a-mile of road with a string forty-five yards long. In working the trap one constable, according to evidence given in the cases at Norwich, "secretates himself behind a fence."

MOTORISTS driving through Beckenham from any direction should be careful, in view of the renewed activity in that district.

THERE has still been another police trap discovered in Yorkshire, viz., on the Wetherby to York road, from the top of hill in Acomb village to the schoolroom—quarter-mile. Almost all the other traps recently reported are still in operation.

CLAIM FOR DAMAGES.

C. P. TYRE sued Herbert Skett, of Birmingham, for damages and personal injuries sustained in an accident on the Stratford road on March 12th, caused by the negligence of the defendant by allowing a horse to stray on the road. The claim was for £50 damages, part of which was made up of loss of time for two weeks, damages to motor-tricycle £72s., and doctor's bill £3. The plaintiff, with his brother and a friend, were returning from Henley-in-Arden on the day in question. The friend was riding a motor-cycle; plaintiff was riding a motor-tricycle, while his brother was in the trailer. When near the "Plough," at Monkspath, they saw something on the road, which afterwards turned out to be a horse. They attempted to pass it, but the horse jumped right in front of them, and they ran into it. The plaintiff was not seriously hurt, but was badly shaken. The horse was not damaged. His Honour found for the plaintiff, but considered the claim for loss of time extravagant, and gave judgment for £10 5s.

WORK FOR THE TRADE.

AT Brompton County Court (London) last week, the case of the Locomobile Company of Great Britain against Mr. William Stonebridge, reported in our last issue, was concluded. Mr. J. Paviot, the owner of the motor-car in question, said that he was now in the trade. He told the defendant that the account for repairing the car was not to exceed £3, but when he went to plaintiffs' works he saw that certain work besides the repairing of the steam pipe ought to be done. His Honour intimated that he considered the defendant should pay for the item relating to the repair of the steam pipe, £3 7s. Counsel for the defence said the custom of the trade was for a small firm sending special work to a special firm, as in the present instance, to get a discount and profit on the job. His Honour now gave judgment for plaintiffs for £3 7s. and costs.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, JUNE 27, 1903.

[No. 225.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

NEXT week will see a great influx of motor cars and motorists into Ireland, and the whole of the country will be given up for a few days to the excitement associated with the sport of automobilism. In view of the many dangerous corners in the country districts, through which the official tour will take place, we would seriously counsel drivers to be unusually careful not to do anything to mar the joyousness of the event. British

motorists, as well as the people of Ireland, are anticipating with a great amount of pleasure the forthcoming events, and anything like a serious accident would cast a shadow over the whole proceedings. Continental drivers, unfamiliar with the practice of English and Irish roads, should be warned, and the fact impressed upon them, that the rule of the road as we know it will be strictly adhered to by the authorities. So great is the interest taken by the peasantry in the Automobile Fortnight, that they are likely to be found on the most unlikely stretches of road, and the precaution which we have already given must not be regarded as only intended for small towns and large villages, but equally applicable in Dublin, Belfast, and Cork. By showing a careful consideration for the convenience of others, and proving that a monster motor-car meet can be carried on without mishap, motorists will do much to disarm the prejudice which has been revived during the last few months. Hence it is that we trust everyone who participates in the tours, whether those arranged by the Club or as individual motorists, will recognise the dis-service he will be doing the industry should he not show the consideration which will be due to our hosts.

Nothing Niggardly Wanted.

MANY rumours, based on a little fact, and expanded with much capacity for imagination, have been in circulation with regard to the abandonment of the race. Nothing of the kind need be feared, and the only surprise is that such reports have been heard at all. The Government surely must recognise that this is something more than a local event; it is one of national importance to Ireland; and although the people of only three counties will see the actual contest, the whole of the country will share in the kudos that the event will take to Ireland. Hence the suggestion that the Treasury have adopted a niggardly hand with regard to the payments for the police and the troops seems unworthy of officials charged with the duty of giving encouragement to anything likely to be to the general welfare.

Caution to Drivers in Ireland.

THE committee of the A.C.G.B.I. request and require that all persons driving motor-cars in Ireland shall conform to regulations throughout the Irish fortnight. It must be borne in mind that the inhabitants of most of the districts of Ireland are quite unused to motor traffic. Many horses are unaccustomed to motor vehicles. They are apt to shy, and in doing so, they back the carts across the roads, and as Irish carts have shafts projecting at the back some four feet, the whole of

the road may thus be blocked. Under these circumstances the Committee of the Club most strongly deprecate travelling at any except most moderate speeds. Passing when overtaking in going down hills or corners, or in passing through towns or villages, is strictly prohibited. Racing between cars will be dealt with most severely. Members of the Club are asked to co-operate with the Committee by reporting drivers (members of the Club or otherwise) who infringe these arrangements, in order that they may be dealt with at a meeting of the Club Committee to be held after the great race.

The Thousand Mile Trial.

THIS year's great event of the Automobile Club will be held from September 4th to the 12th, starting from and completing each day's run at the Crystal Palace. The organisation committee is representative of the Club, and also of the trade, whilst the judges are not connected with or financially interested in the industry. The awards will take the form of gold and silver medals, and will be made by adding together the marks gained by each car during the trial for reliability; cleaning, replenishing, etc.; hill-climbing; condition after trial; brakes; steering; absence of noise; absence of vibration; absence of vapour or smoke; absence of dust raising; speed on track; re-starting on hill; finish and appearance; general cleanliness of motor and gear; fuel consumption; accuracy of h.p.; and cheapness. The principle underlying the rules is, that the trial is a test of a reliability. There are to be hill climbs, and in these speed, the number of passengers and price will be considered, but in calculating the total of marks to be given, the features already mentioned will weigh very considerably with the judges. There will be seven classifications of motor cars, and entries must be sent in to the Club not later than noon on Saturday, July 11th, that is, if manufacturers or owners desire to secure an entry at a fee of £5. After July 11th, the entry fees will be increased twenty-five per cent. per week, no entry being accepted later than August 15th. Observers will be appointed as was the case last year, and the methods of marking which are already fairly familiar to those practically interested in the event, have been well devised. The programme includes runs to Folkestone, Eastbourne, Worthing, Winchester, Southsea, Bexhill, Margate and Brighton, the total mileage being 1,014.

"Our Barometer."

THE long list of furious driving cases recorded in the *Journal* of the 13th inst., has been the subject of much comment in the press. The "Automobile Club Journal" recognises that we are "doing good service by publishing weekly a summary in tabular form of the various prosecutions for exceeding the speed limit. It serves as a faithful barometer of the state of public feeling in regard to automobilism throughout the country." The "Globe" also mentions that our list "contains no fewer than 125 cases, with the laconic announcement that pressure on its space prevented the publication of the full list." Both our contemporaries recognise that the lists have been useful in proving the increased activity of the police—an activity which is not confined to any particular part of the country. Although

police methods of timing speed are ludicrously inaccurate, we may take it for granted that the majority of the defendants were really transgressors of the law, although it is equally true that the greater number inconvenienced no one, and endangered no lives. It would be impossible to exaggerate the extent of the injury to the automobile industry which is being done by the police in their present mood, and only by an adequate public record being made can it be hoped to secure some reasonableness in their attitude.

tively few hours with regularity and economy—two qualities that appear somewhat new to the native mind.

Motor-Car Legislation.

◆ ◆ ◆
 WITHIN the next fortnight, says the "Daily Telegraph," the Government will introduce a measure in the House of Lords for the better regulation of motor traffic. As yet, the details of the bill have not been finally decided upon. It may be taken for granted, however, that provision will be made



Snapshots in Algeria.

In Algeria.

CA 1388

A MEMBER of the A.C.G.B.I. who recently enjoyed a long motor-car trip in North Africa has favoured us with a selection of photographs before which even the anticipations of Ireland grow dim. What possibilities of seeing new lands and looking upon strange customs are possible to the motorist. Lands only narrowly scanned by the railway traveller and impossible to the ordinary wayfarer are brought within measurable compass by the automobile. At Sfax he saw the automobile illustrated on this page—a 12-h.p. Panhard car driven by a native driver, used in the postal service. Long since it was an object of excitement to the populace. There the postal authorities are a long way in advance of St. Martin's le Grand. A journey that ordinarily occupies four days when the mails are carried on camels is performed by the automobile in a compara-

for the numbering and registration of motor-cars, the licensing of professional drivers, the increase of penalties for breaches of the law, and the modification, if not the abolition, of the speed limit. On Tuesday General Laurie asked the Home Secretary whether his attention had been called to the case heard at Marlborough Street Police Court on the 16th inst., when a motor-car driver was convicted of driving furiously in Hyde Park, and to the comments of the magistrates when passing sentence upon the grossness of this case and the inadequacy of the fine of £5 that he was empowered by law to pass; and whether, in view of infractions of the law by motor-car drivers, and the consequent danger to the public, he would obtain legislation to enable magistrates to inflict adequate penalties for this particular offence, pending the introduction of the bill for the general regulation of motor-cars. Mr. Akers-Douglas in reply said he had received a report of the case referred to and was inquiring into it. He

thought the question of increased penalties was one which would certainly be considered in the bill about to be presented, a remark which elicited loud cheers.

Motor Volunteers.

On Tuesday instructions were issued from the Home District Headquarters respecting the organisation of the new Motor Volunteer Corps, which is described as "composed of gentlemen who are owners of motor-cars, and who are willing to parade with their cars when required for military purposes, such, for instance, as the defence of the country, manoeuvres, staff rides, &c." The establishment sanctioned provisionally is to be 203 officers and men, made up of one lieutenant-colonel (commanding), 6 majors, 19 captains, 19 lieutenants, and 155 Volunteers (privates), with a permanent staff of one adjutant and two sergeants. With the headquarters in London (11, Tothill Street, Westminster), the corps will be divided into five commands, distributed as follows: (1) Aldershot; (2) Salisbury, with subordinate commands at Plymouth, Portsmouth, and Dover; (3) London, with subordinate commands at Woolwich, Chatham, Colchester, Guildford, Hounslow, Kingston, Oxford, Reading, and London; (4) York, with subordinate commands at York and Chester; (5) Scotland, with subordinate commands at Glasgow and Edinburgh.

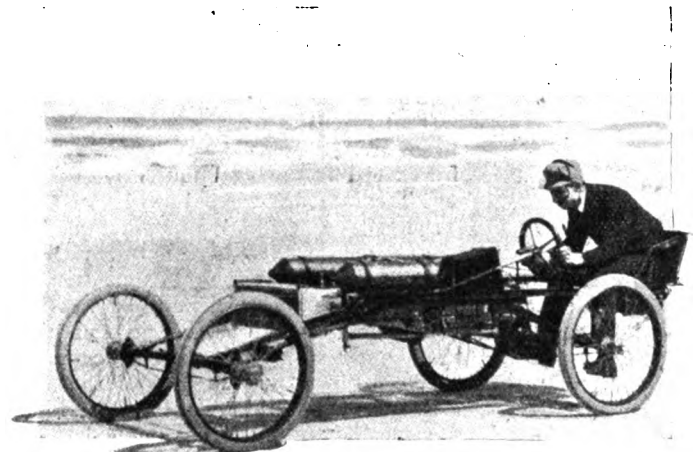
A Unique Test.

So marked has been the progress in motor construction at the Hozier Engineering Company's works in Glasgow, that Mr. A. Govan, the managing director, decided to make an experiment which we believe is unique—at least, so far as Scotland is concerned. Mr. Govan's idea was to take an Argyll car straight from the factory and make a non-stop run over the S.A.C. trial course without any preliminary running whatever. For this purpose he obtained the assistance of Mr. Hall Brown, Vice-President of the Institute of Engineers and Shipbuilders in Scotland, who selected a chassis from amongst a number for the trial. Mr. Brown watched the assembling and fitting of the parts, and, when the car was declared complete, he sealed it up so that it could not be tampered with in his absence. On Saturday last Mr. Brown again examined the vehicle, which was then driven out of the factory to the centre of the city, and, with its full complement of four passengers—Mr. Govan being at the wheel—started from the Royal Exchange on its trial trip. The course, abounding in steep hills, led through Dumbarton and Helensburgh to Garelochhead, and thence to Tarbet, the famous hill at Whistlefield being climbed *en route*. From Tarbet the car ran along the loch side to Crianlarich and back, the return journey to Glasgow being by way of Luss, Alexandria, and Bowling. The trip was in every respect a success. Every hill was taken at good speed, and the roughest parts of the road were covered without any undue unpleasantness—a signal proof of the excellence of the car and its equipment. From beginning to end not a single part of the mechanism was touched, the car being returned to the works exactly as it left them after undergoing the arduous test. Although nothing in the way of racing was attempted, the 107 miles were covered in 4 hours 53 minutes. The car was a standard 10-h.p. Argyll, built to the order of Dr. Paul Rottenburg, ex-President of the Glasgow Chamber of Commerce.

Reducing Dust on Sussex Roads.

AN experiment now being made on the Sussex roads by the Surveyor of the West Sussex County Council, Mr. W. R. Purser, is likely to attract general attention in the South of England, where the system applied is a novelty. The "Sussex Daily News" refers to the stones used as Cherbourg quartzite. These are first of all put under a drying process at the galvanised iron shed at the County Council depot in Horsham. After being well heated the stones are spread out and allowed to become somewhat cool. They are then deposited from five to

six inches thick on a wooden platform and treated with tar, about five gallons of the latter with a little pitch being sufficient for a ton of stone. Each stone is thus given a coat of shining blackness. After undergoing this process they are wheeled into one large heap, and allowed to become matured. The stones are now being carted to Monksgate, on the Brighton road, and spread to an average thickness of about five inches. The stones are consolidated by a ten-ton steam roller, and afterwards clean sand is sprinkled over the surface just for a covering. About 100 tons of quartzite stone have been used, and will be sufficient to lay down upon a length of from 125 to 150 yards of road according to the breadth. Having undergone the tar treatment it is assumed that a longer life is given to the stone, averaging from twenty-five to thirty-five per cent., according to quality. Several advantages are claimed for roads where these experiments have proved successful, the most powerful argument to motorists being the fact that no dust is raised by passing vehicles.



Mr. H. T. Thomas on the Oldsmobile Racer which covered a mile in 1 min. 6 1-5 secs. on the Daytona-Ormond Beach, Florida.

Inoffensive Identification.

MR. E. J. HALSEY, the chairman of the Surrey County Council, has revived Earl Russell's suggestion that the Local Government Board should make a regulation to the effect that every motor-car shall have a small plate affixed to it bearing a registered number engraved thereon corresponding with the licence that has been taken out. The practice already in force in regard to boats upon the river Thames is thus suggested for automobiles. While admittedly not a perfect remedy, this practice would, at any rate, tend to the more easy identification of the offender, while no one could reasonably complain of it on the score of undue interference. Stripped of the suggestion with regard to licensing, we believe this is quite in accord with the proposal of Earl Russell at the memorable meeting at the Automobile Club, and we would like to see it have greater prominence in the discussions which take place on the subject from time to time.

Hedges and Warning Boards.

IN Hampshire and in Yorkshire some of the local councils have come to the decision to erect warning boards for motorists; a course that will commend itself to many who have had to incur the danger that arises from coming suddenly upon steep gradients. At a meeting of the Driffield Rural Council, a member advised that a local landowner should be approached with a view to the removal of a bank and hedge at the corner of a road, as it was a source of danger to drivers. We gladly recognise the good work that is going on throughout the country in encouraging local people to do their duty with regard to roads and hedges. The onus does not lie wholly with the motorist.

The Derby Club.

UNDER rather more pleasant conditions than have lately prevailed, the Derby and District Club have had a run to Uttoxeter. This was at the invitation of several of the local motorists, and took the place of the outing to Foremark Hall, the sad bereavement which Mr. Lawson has sustained causing that fixture to be abandoned. The members met at Ashbourne, journeying thither independently, and proceeded thence to their destination, being joined at Rocester by their Uttoxeter friends. An excellent tea was provided at the White Hart, these and all other arrangements being kindly made by Mr. Ellis Chambers, who spared no pains to make the visit a successful one. Shortly after six o'clock the cars began to return to Derby, via Sudbury, the evening, though somewhat cool, being very pleasant, and the roads in fine condition. The following members took part:—Mr. Schwind, 16-h.p. Rex; Mr. Leech (hon. treasurer) 8-h.p. Decauville; Mr. Allin (hon. secretary) 8-h.p. Rex; Mr. Hunter, 6-h.p., Darracq; Mr. Pounds, 4½-h.p. Benz; Mr. Reading, 5-h.p. Stirling; Mr. Guest, 9-h.p. De Dion; Mr. Fletcher, 3½-h.p. Star; Mr. F. Smith, Clyde bicycle; and Messrs. Smith and Collum, Excelsior bicycles.

An Extreme Case.

THE recent case at Melbourne (Derby) when Mr. Lawson's mechanic was fined for exceeding the legal limit when taking Dr. Tredinnick to the aid of the late Rev. T. Orrell, has excited great indignation among the members of the Derby Club. The Club sternly sets its face against reckless or furious driving, but taking into consideration the extreme urgency that was undoubtedly necessary upon the occasion in question, it deeply regrets the decision of the Melbourne magistrates. The argument that "someone might have been killed" in the face of the fact that a person was undoubtedly dying, and that every second was of value, surely savours somewhat of hysteria, and a lack of knowledge of the brake power (so constantly demonstrated) of the modern motor-car.

The Suffolk Club.

ANOTHER automobile club has been formed in East Anglia, and at Bury St. Edmunds an organisation for that town and West Suffolk is now an actuality. A preliminary run was held the other evening to Higham, where a meeting was held at the Station Hotel, Mr. A. O. Clark being in the chair. The Bury and West Suffolk Automobile Club was then inaugurated, and tribute paid to the tolerant attitude of the police of the district. A further meeting will be held at Bury St. Edmunds on Monday next, at which the Mayor is expected to take the chair, and it would seem that there are good prospects of success.

Legislation in the States.

THE new automobile legislation in the State of New Jersey requires drivers of automobiles in that State, under the Scovel Bill, to make a declaration as to their ability to run their vehicles, and to give a brief description of them, including the name of their manufacturers and their rated horsepower. If this declaration is satisfactory, a licence will be issued for each machine upon the payment of one dol. Numbers of a given size will take the place of letters for purposes of identification on the road, and at night these numbers must appear on the lamps of the vehicles and be visible 200 feet away. On signal from a person riding or driving a horse or horses coming toward the automobile, the driver of the latter must stop his machine and remain stopped for the horse or horses to pass. A fine of 100 dols., or imprisonment for thirty days, is prescribed for displaying a fictitious licence number; 50 dols., or twenty days' imprisonment, for racing; 25 dols. for failure to display a licence number; and 10 dols. for failure to carry the proper lights. For violating the speed regulations the fines range from 10 dols to 50 dols., and for second offences they are, in each

case, to be doubled. Speed must not exceed 10 miles per hour at turns and cross-roads, or twenty miles anywhere else.

The Biograph and the Motor.

ON Monday, a theatrical ladies' motor meet was held, and the success of the first gathering of the kind has warranted the pleasing event becoming an annual function. Organised by Mr. Arthur Vincent, and held under the auspices of the Biograph Company, the meet took place at the Oatlands Park Hotel, Weybridge, the guests being conveyed in privately owned vehicles kindly lent by their respective owners. After luncheon the company filed before the Biograph, and a representation of the scene is now delighting the patrons of the London halls every evening.

A Piece of Presumption.

A READER calls attention to a piece of impudence on the part of the proprietor of a motor-car garage which we hope is a *rara avis*. He recently stabled his car at a certain garage in the Midlands, and one day, when going for his vehicle, discovered the manager starting out for a run on his car accompanied by a friend. Such action is quite unpardonable and should be brought to the notice of the local Automobile Club.

Learning to Drive.

SOME time ago the Automobile Club decided to purchase a car to teach members or their servants how to drive, and as much of the working details of the motor and gear as could be expected to be picked up in a short time. Arrangements were made to give a course of fifteen lessons of one hour each for a fee of £3 3s. In actual practice this has been found quite a sufficient time to teach a man to drive with safety under ordinary conditions, either of country or traffic; readiness and resourcefulness in an emergency can only come by experience. The car purchased, which began work in June 1902, was a 7-h.p. Star, and this has been found to be an excellent one for the purpose, not a single stoppage having occurred through derangement of the machinery. No less than twenty-three members have taken advantage of the facilities offered by the Club, and twenty-two have had their servants taught. Two ladies have also received instruction. The course of lessons consists in three or four hours' instruction in grinding in valves, principles of the motor and gear, ignition, carburettor, etc., and the rest of the time is devoted to the actual handling of the car; manœuvring in and out of the garage, driving in the Park, and then in the traffic. After forty-five novices have learnt to drive on the car, and there is no sign of damage to the gear or other parts. It may be safely said that the scheme has proved itself an unqualified success, and is undoubtedly a very great advantage to the members.

Motor-Cars at the Meet.

IT is common knowledge that in certain parts of the Midland counties strong feeling has lately been demonstrated against motor-cars anywhere in the neighbourhood of hounds—still more against their being employed directly or indirectly as aids to the hunting field. A correspondent of the "Field," who acknowledges he is not yet educated out of the horseman's natural aversion to automobiles, has, during a visit to the New Forest, arrived at an appreciation of the fact that there they are quite recognised factors of the chase. "You find them at every fixture, and they take part even in penetrating the by-roads of the forest, while on the main roads they whirl by in an atmosphere of dust which shrouds you for some minutes. Their nerve-shaking bellow mingles almost blasphemously with the huntsman's horn, and they roar upon you as they descend upon horse and carriage with the reckless violence of a typhoon." A bit of graphic writing, doubtless; but somewhat inspired by prejudice. The attitude of the Earl of Shrewsbury—as illustrated recently in the *Journal* shows greater tolerance.

The Gordon Bennett Cup Race.

NEVER before have British and Irish motorists been provided with such an interesting series of events as that about to take place in Ireland, and the victory of Mr. S. F. Edge in the Gordon Bennett race last year has proved something more than an impetus to the British automobile industry; it is likely to result in such an influx of visitors to Ireland as will prove a substantial gain to the Cinderella among British islands.

In this issue we give the programme for the forthcoming series of events, together with information as to the firms supplying petrol, etc., on the line of route, as well as the official headquarters of many of the leading automobilists represented.

Although the chief event will take place on July 2nd, the other incidents of the tour will be of great interest and importance, while hundreds of motorists are going over to Ireland independently of any official arrangements.

To encourage the development of the automobile industry was the object of Mr. James Gordon Bennett in offering a cup for international competition, and although the results of the annual events held in connection therewith have been of varying interest, the scheme remains as a tribute to his foresight and enterprise. The first contest was held on the Paris-Lyons road in 1900, when only two cars finished out of five, France being represented by M. Rene de Knyff, Girardot and Charron on Panhards; Mr. Winton was the sole representative of the United States, and M. Jenatzy appeared on behalf of Belgium. Mr. Edge's entry was vitiated by the fact that his tyres were alleged not to have been of English manufacture. In the following year the course was from the French capital to Bordeaux. Mr. Edge was the English representative, and France—as this year—had two Panhards and one Mors car in the race. Last year's contest was run in conjunction with the Paris-Vienna event, and the result was to bring this year's contest to our own shores. Briefly reviewed, the results hitherto have been as follows:—

Year.	Winner.	h.p. of Car.	Average Speed m.p.h.
1900	Charron	24	38.5.
1901	Girardot	50	39.5.
1902	S. F. Edge	40	34

The 1903 course is now in excellent repair, bends straightened, right angles rounded, and hedges clipped low for 200 yards on the approach side of each corner. Caution and danger signals will be set up at all possible accident points, and responsible road stewards, with flags, will warn approaching cars of unforeseen road obstructions.

The racecourse will be closed to traffic at six a.m., all side roads and paths blocked, and police officers stationed at the joining point of racetrack and side roads. Large green banners stretched entirely across the road indicate a corner within 300 yards. A small triangular green flag suggests caution in driving for the next quarter mile. A large flag, half green half red, warns the driver he must stop dead in 300 yards. A large red banner



The Gordon Bennett Cup.

stretched across the road means stop.

Surveyors and contractors have each worked well, and enthusiasm shown locally should result in a splendid success. The work has been done very satisfactorily and a portion of the track will be sprinkled with oil, this being carried out on the suggestion of Lord Deerhurst. More than 270 roads leading to the course are to be closed on the day of the race. At each of the highways a couple of policemen will be stationed, whilst the barricades may be expected to prove effectual in restraining the ardour of the people in getting too close a view. The entire district has been posted with the following notice, which certainly

has the merit of brevity:—

"GORDON BENNETT RACE.

ON THURSDAY,

The 2nd day of July, 1903.

WARNING.

"All occupiers of premises on or near the course of the above-mentioned race must keep their live stock, pigs, dogs, poultry, and cattle under proper control, either in farmyards or well-fenced enclosures, during the progress of the said race.

"Any person on the road, or attempting to cross the road during the progress of the Race, will imperil not only his own life, but that of the driver of the racing motor-car."

The contestants will be as follows:—

GREAT BRITAIN (Green).

Messrs. S. F. Edge, C. Jarrott, and J. W. Stocks.

FRANCE (Blue).

MM. Rene de Knyff, H. Farman, and F. Gabriel.

THE UNITED STATES (Red).

Messrs. A. Winton, Louis Mooers, and Percy Owen.

GERMANY (White).

Baron de Caters, M. C. Jenatzy, and Mr. Foxhall Keene.

ABOUT THE CONTROLS.

At Ballyshannon, where the start will take place at 7 a.m. on the morning of Thursday next, the road is only 14 ft. wide, and it must be confessed that the decision to start the cars at intervals of seven minutes is a wise one. By lengthening the interval of starting, the chances of cars overhauling one another have been considerably minimised, and it is quite possible that some of the passing may be done within the control. In charge of the timing arrangements will be Mr. R. E. Phillips, who will be assisted by a corps of volunteers in a duty the importance of which cannot be minimised.

The controls will be as follows:—Castledermot, Carlow, Athy East, Kildare, Monasterevan, Stradbally, and Athy West. At each of the controls there will be three motor-cyclists, and at Kildare, Monasterevan, and East Athy fifteen ordinary cyclists. Ordinary cyclists will also be posted at Ballydavis, Bloomfield cross roads, Simmon's Corner, and the turn where the cars will branch off to the eastern circuit at Old Kilcullen. Others may also be stationed at Mageney Bridge and Hacklow Corner.

At the commencement and end of each control there will be placed in a conspicuous position a large chronometer, fitted with a seconds hand, by which the competitors and the bystanders can see at a glance the time of the arrival or departure of the car at the control point. We believe that the official timekeepers will at once write up on a blackboard the official time of the car. On the arrival of a car at a control, the official time of its arrival will be also written on a card, retained by the competitor. The same procedure will be followed on a competitor leaving the control post. By this plan the competitor will be possessed of his official times for every point throughout the race.

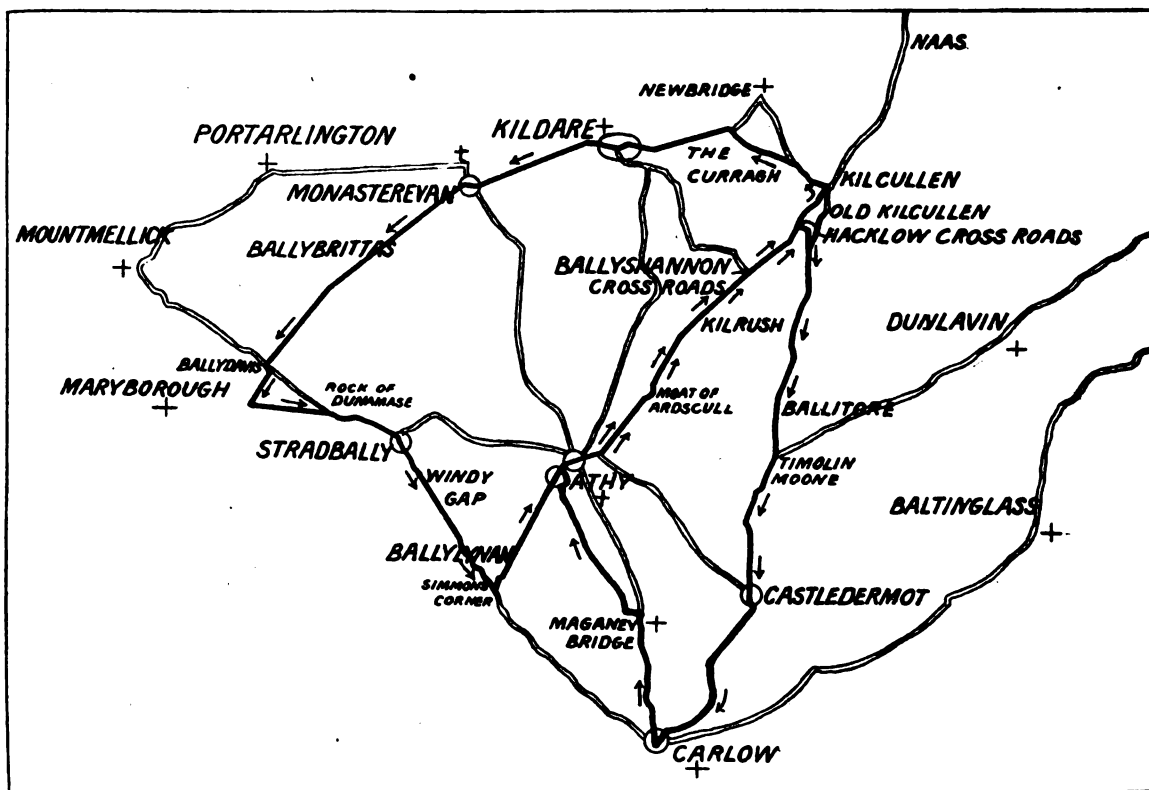
THE COURSE.

The course, starting from Ballyshannon, lies in a northeasterly direction to Kilcullen, the Hacklow cross-roads presenting the first nasty turn. Across the Curragh—a fine stretch of $4\frac{1}{2}$ miles—and just beyond the hospital, Kildare comes into view.

is another turn that will require nerve as well as skill to get safely over.

The high ground in the locality of the Rock of Dunamase will give some vantage points much in favour, while the hill past the famous rock will test the prowess of even the most powerful cars. Fortunately, there is a good width in the highway succeeding which leads to the long, wide main street of Stradbally. On the east side the ascent to Windy Gap will give the competitors some idea of hill-climbing, and the spectators as fine a view as any over the whole course. Just before Ballylynan is Simmon's Corner, one of the sharpest angles of the course, and then, to Athy, the widest part of the course will be rushed through.

Athy is one of the most considerable places on the course, and there is likely to be a great multitude of people at that point, as it is the beginning of a stretch over which the cars will travel seven times. Past the Moat of Ardsclull the cars will rattle, and Messrs. Mecredy and Percy's party will doubtless give



Map of the Course.

Thick Lines show Course to be covered by cars. Double Thin Lines indicate main roads to different points of Course. Crosses represent Railway Stations. Controls are shown by small circles.

From many reasons, this town (although its population is only about 1,200) has assumed the position of being the most important centre on the course, the main roads therefrom leading—as is shown in our sketch map—to Athy and also to the starting point of the race.

The end of the Kildare control is nearly two miles from the picturesque market square, and, after a somewhat sharp turn has been negotiated, Monasterevan is reached, the Canal bridge being a notable "bump." The road, however, is level all the way, a bad culvert having been minimised for the purpose of the race by building up the road on both sides for quite thirty yards. By the main road therefrom a good many people will reach Athy. Monasterevan is of some ecclesiastical interest, and near the town are the residence and demesne (Moore Abbey) of the Earl of Drogheda. East of the gates of the latter is a stalwart hill, giving sightseers a good, clear view of the road for three miles or more. Crossing the river Barrow, an awkward canal bridge has to be surmounted, and there is then a straight run of nine miles to the Ballydavis cross roads. There, again,

them a hearty welcome. Several well-known motorists have booked places there. A straight run to Kilcullen will give the spectators along thirteen miles of road a splendid opportunity of seeing the cars at full speed. Kilcullen has seen some notable contests, its last great disturbance being the insurrection of 1798, when the town was the scene of a great conflict between the Government forces and the insurgents. Turning sharply to the south the route will be through Ballitore and Timolin, the rectory of which latter place has been the headquarters of the American team, while at Fontstown the cars will pass Colonel Baring's house, which Mr. Harvey du Cros has made his headquarters.

A round tower stands out conspicuously at Castledermot, where the ruins of a monastery founded early in the fourteenth century remain. Then there will be a skurrying to Carlow, which is the next prominent place to be traversed—one of the first towns in Ireland lighted by electricity and having a lovely situation on the river Barrow. There will be a sharp bend round the Courthouse in the main street. From thence to Mageney

(Continued on page 320.)

THE ENGLISH, AMERICAN, AND FRENCH TEAMS.



Mr. C. Jarrott.



Mr. S. F. Edge.



Mr. J. W. Stocks.



Mr. Percy Owen.



Mr. Alexander Winton.



Mr. Louis Mooers.



M. Rene de Kynff.



M. Henri Farman.



M. F. Gabriel.

Owing to delay in the selection we are unable to include photographs of the German team in this issue.

Bridge is a curly stretch of five miles, and some fairly sharp turns will have to be taken with care. We do not anticipate the speed of the foremost cars over that stretch will be half the average for the whole course—so difficult are the turns.

THE CUP CARS.

Although most of the types of the cars which will compete in the 1903 Gordon Bennett race have already been dealt with in the *Journal*, a summary of their leading features will not be without interest at the present time.

To begin first with the Napiers, no less than three distinct types have been built to meet the challenges the United Kingdom has received as holders of the cup. One set with engines rated at 35-h.p. was built in the expectation, early in the year, that the race would have to be run in France, and afterwards a trio of motors, said to develop 30-h.p., were put in hand. Both types of vehicle are very much on the lines of last year's winner; they are fitted with four-cylinder engines having the ordinary high-tension system of ignition, while the governor is adapted to act on the throttle. The water circulation is maintained by a friction-driven pump and Clarkson radiators. Four speeds

Probably the most striking vehicle to be found among the dozen which will take part is that which will be driven by Mr. Alexander Winton, the first of the American team, the feature being the employment of an eight-cylinder horizontal engine set across the frame. The following is the brief description of the vehicle as supplied us by the Winton Co.:—"Its motor has eight cylinders, cast iron pistons and rings; sectional construction of water jacket; aluminium water shell. The motor may be described as two units, of four cylinders each. Each four-cylinder unit has an independent water-circulating centrifugal pump. A single radiator and a single carburettor answer for all eight cylinders. Bore of cylinders, 5 inches; stroke, 6 inches; drop-forged connecting-rods, bronze bushings, float-feed lubrication, with syphon wicks, and gravity oil distribution. The cylinders are horizontal, all on one side of the fore-and-aft eight-throw crank-shaft, which has a bevel-gear transmission to the balance gear drum; 1 to 1 $\frac{1}{2}$, 700 revolutions of motor shaft per minute, driving the vehicle at 64 miles per hour, with 32-inch driving wheels, and 4-inch Goodrich double-tube tyres. Wheel base, 114 inches; wheel gauge, 56 inches; weight, 2,150 pounds, tanks empty; petrol capacity, 22 gallons. This car has no reverse

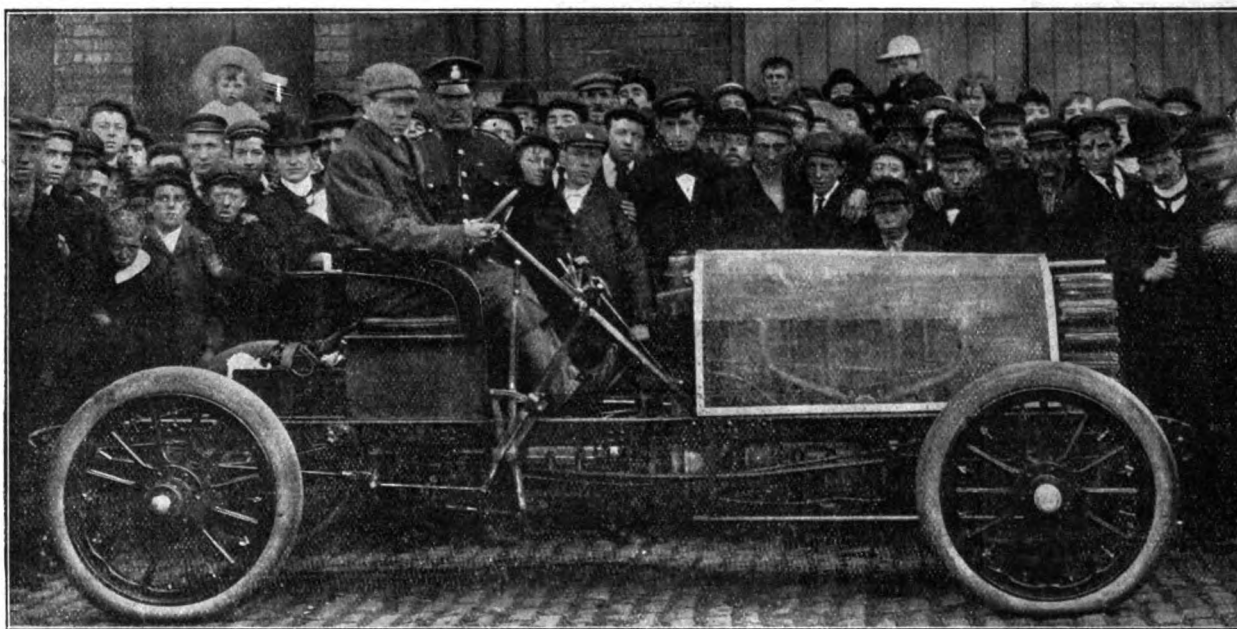


Photo by)

Mr. L. P. Mooers on his Peerless Racer, on arrival at Dublin.

[Lafayette, Dublin.

forward and reverse motion are provided, the power on the top speed being transmitted direct, no secondary gear wheels whatever being in motion. Like last year's racer, the new cars are provided with a live axle, power being transmitted from the gear box through a longitudinal universally-jointed shaft and bevel gearing. The frame is built of steel and wood. The road wheels are of equal size, 34 inches diameter, and shod with 90 mm. tyres, the wheel base being 7 ft. 10 in.

Since the above vehicles were completed, two cars of a much more powerful type were put in hand and may be driven by Messrs. Edge and Jarrott. In general arrangement these vehicles are the same as the smaller cars, a direct drive to the live axle being secured on the top speed. The engines are said to develop about 110-h.p. In order to get sufficient weight for adhesion on the driving wheels, the engines are fixed much further back than usual, being behind the front springs instead of between them as usual. The bonnet is said to measure 4 ft. 2 in. from back to front. The wheel-base is 9 ft., and the wheel gauge 4 ft. 2 in. The aim has been to produce a car which shall be extraordinarily quick in starting and stopping, so that it may attain the highest speed practicable at any point in the shortest possible time, and will not need to slow down till the last moment at curves or other places where the pace must be reduced.

and can only be driven forward. The original design had two speeds forward and a slow speed reverse, all of this variable gearing weighing only 50 lbs.; but after trial this change gear and reverse, appearing to serve no useful purpose, was discarded, and the car now has a clutch from the motor shaft to the bevel pinion shaft, and one fixed ratio forward gear only. The chassis is of ash scantling, three and one-half by two inches, armoured with steel plates 1-16 inch thick. There are two brakes on each rear wheel hub, independently actuated, one brake being applied to the outside of the cylindrical brake shell, fixed to the wheel hub, and the other brake expanding by a reversed bell-crank action to co-act with the interior surface of the same cylindrical brake shell, or drum. The steering is by hand wheel, tangent screw and worm gear sector, with globe-end bell crank and tubular rod connection.

The spark advance is by hand. Jump sparking plugs are used, one battery and one coil for the eight cylinders, a second reserve coil being fitted for use in case of failure of the first. Dry cells are employed, as giving better results than any type of American storage battery tested." The Winton car to be driven by Mr. Percy Owen is practically a replica in miniature of Mr. Winton's, it having a four-cylinder horizontal engine, and weighing 1,450 lbs. with tanks empty.

The Peerless car which Mr. L. P. Mooers will drive as America's third representative, is propelled by a vertical four-cylinder engine of 80-h.p. Mr. Mooers has always been a firm believer in the vertical type of engine, and his faith in its superiority is shown in the fact that he has built his new racer with this design. Mr. Mooers is also a firm supporter of the bevel gear transmission, with direct drive on high speed; also of the universal shaft, which features he has embodied in the car. Each of the four cylinders are steel, with a cast explosion chamber. Both inlet and exhaust valves are mechanically operated. There are two systems of ignition, one a jump spark placed directly over the inlet valve, the other a contact spark placed alongside the inlet valve. Both can be advanced or retarded by the driver at will from the seat. The car is equipped with sliding gear transmission. The engine, including fly wheel, weighs about 700 lbs., and the car complete about 2,200 lbs., aluminium being used wherever possible to reduce weight. The wheel base is 9 ft. The front wheels are 34 in. in diameter with 4 in. tyres, and the rear wheels 34 in. in diameter with 4½ in. tyres. As will be seen from the illustration we give on another page, the ordinary bonnet is replaced by one of wire netting to allow free access of air to the engine.

the description of these well-known vehicles, but to make our description of the competing cars complete it may be stated briefly that they have four-cylinder engines (140 mm. dia. by 150 mm. stroke), mechanically-operated inlet valves, magneto ignition, combined honeycomb radiator and water tank, and chain transmission.

THE IRISH FORTNIGHT.

ALREADY members of our staff are in Ireland for the Gordon Bennett race, and everything is in hand for full reports of the various proceedings in connection with the official tour of the Club, the programme being as follows:—

- July 1.—Exhibition of competing cars at the Earlsfoot Terrace Rink, Dublin.
- „ 2.—Gordon Bennett Race.
- „ 3.—Gymkhana in Phoenix Park, Dublin.
- „ 4.—Speed Trials in Phoenix Park, Dublin.
- „ 6.—Start for Newcastle and Belfast.
- „ 7.—Speed trials at Castlewellan, co. Down.
- „ 8.—Return to Dublin.

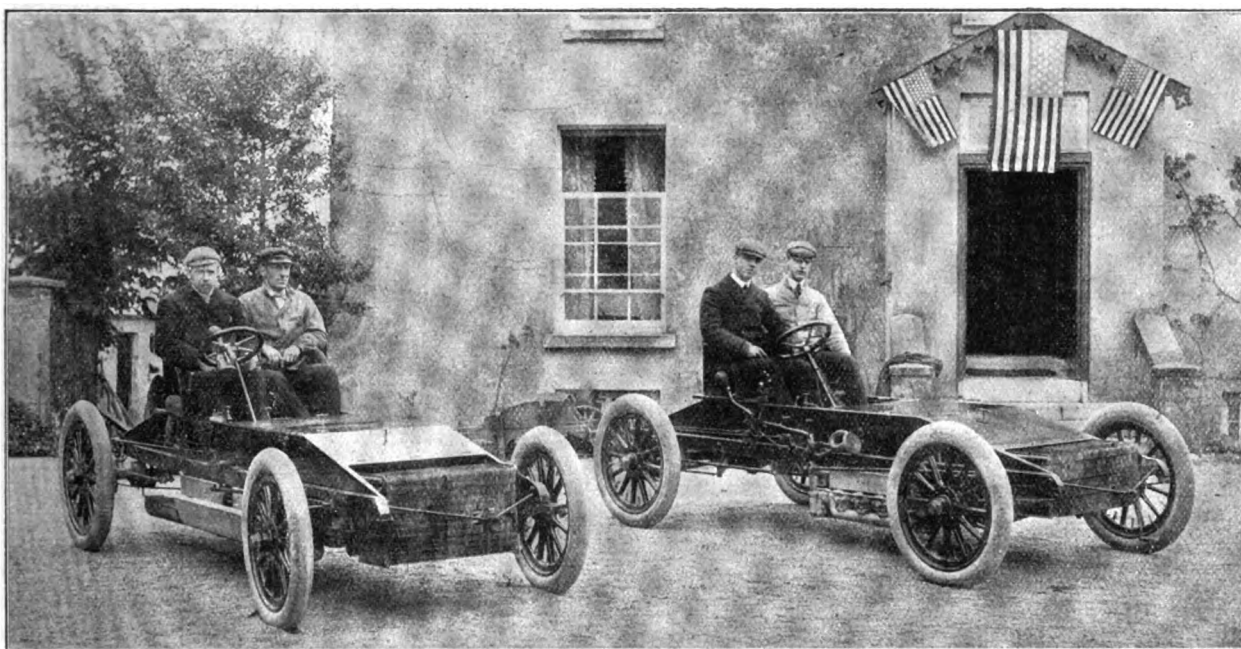


Photo by]

Messrs. Winton and Owen on their Winton Cars, at Timolin Rectory, Ballitore.

[Lawrence Dublin.

Coming now to the French cars, Messrs. Rene de Knyff and Henri Farman will each drive 80-h.p. Panhards, with four-cylinder engines and chain transmission. It is understood that they will be similar to the cars which competed in the Paris-Madrid race, except that the sloping position of the engines, which did not prove satisfactory from the point of view of lubrication, is being altered. The Mors car to be driven by M. Gabriel will be similar to that used by this intrepid chauffeur in Paris-Madrid, the racer he drove to victory as far as Bordeaux having been sold to a wealthy motorist in Holland. The engine has four cylinders, and is said to develop 80-h.p. The transmission is on the well-known Mors lines, with direct drive on top speed.

The disastrous fire at the Cannstatt works the other week has upset the arrangements for Germany's representation in the race, the 90-h.p. cars intended for the event having all been destroyed in the conflagration. It was at first thought that Germany would have to withdraw its challenge, but eventually it has been decided to compete with three of the 1903 type 60-h.p. Mercedes cars, to be driven respectively by Baron de Caters, M. Jenatzy, and Mr. Foxhall Keene, none of whom, curiously enough, are of German nationality. It is hardly necessary for us to repeat

- July 9.—Start for Cork *via* Waterford or Lismore.
- „ 10.—Eliminating Test for motor-boat race.
- „ Motor-car speed trials.
- „ 11.—Motor-boat race for the Harmsworth Cup.
- „ 13.—Start of the tour through the south of Ireland.
- „ 14.—Arrival at Killarney.
- „ 15.—Hill-climbing trial on the Kilorglin-Tralee road for the County of Kerry Cup; and conclusion of official tour.

THE headquarters of the Midland Automobile Club are at the Golfer's Hotel, Sutton, co. Down; of the Scottish Club, the Gresham Hotel, Dublin; and the Yorkshire Club will camp in a field at Ardsclull, right hand side of road. As the bank is about ten feet above the road, a splendid view is obtained of two to three miles of road on which the racers approach the club ground. Camping has been arranged to obviate the difficulty of getting to the position (as the main road is closed at 6 a.m.) and a portion of a field, adjoining the course (and from which also the race can be seen) has been obtained. On this will be

erected two large sleeping tents, with wood floors, and also a dining tent, 30 ft. by 30 ft. The catering has been arranged with Messrs. Powolny, of Leeds, who are sending over complete hampers of provisions, etc., sufficient for seven meals.

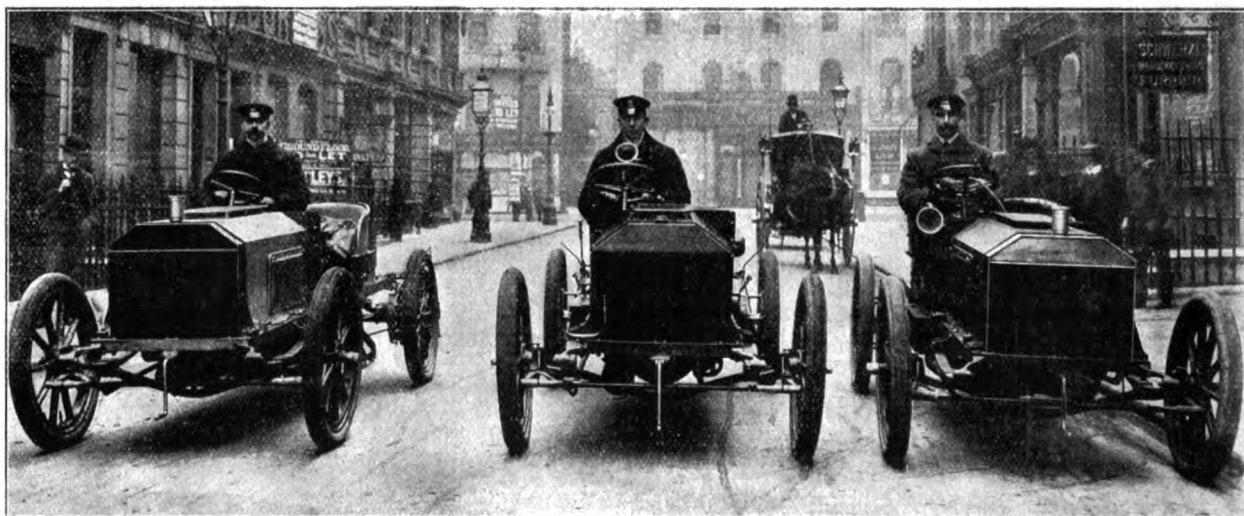
ON February 20th, the Bill legislating the Gordon Bennett race was read a first time, the Hon. J. Scott Montagu being sponsor. Only one member stood in the way of its progress, and his objection was on a purely technical point, which was quickly got over by the promoters of the measure. On March 27th the Bill received the Royal Assent—a record in legislative achievement in these latter days.

MEMBERS of the South of Ireland Tourist and Hotel Proprietors' Association will decline to accept any responsibility for damage or injury to motor-cars by fire, storm, flood, or any other cause while on their premises, and will only accept the same into the hotel premises for storage at owners' risk. A charge of 5s. per day is made for storage, and the owner of the car must have removed from the car any loose vessels in which the reserve stock of petrol may be carried, for storage in separate building, to comply with insurance regulations.

THE silent running of the Peerless car when driven over the course by Mr. L. Mooers the other day was a matter of surprise to everyone.

THE Most Rev. Dr. Foley, Bishop of Kildare and Leighlin, has addressed a letter to the Priests of the Diocese, in which he says: "As I took the liberty of expressing an opinion strongly in favour of the motor car race which will take place on July 2nd, I feel that I ought to warn the public against a danger which seems to me a very grave one for some of those who will be spectators of that interesting event. It is hardly to be hoped that the authorities' efforts will be successful unless the multitudes of people who will be massed at certain places along the route, especially in the vicinity of towns, make up their minds to abstain from the use of intoxicating drink. It appears to me that the temptation to excessive drinking will be very great in the case of many who will find themselves restricted to a limited space during the greater part of a July day. Hence I feel called upon to issue a special word of warning to all concerned, and to request the clergy to impress upon their people on next Sunday the necessity of extreme caution in this important matter."

IN the House of Commons Mr. Wyndham, replying to a



The English Team on their Napier Cars.

MR. L. P. MOOERS, the third member of the American team in the Gordon Bennett race, reached Dublin on Thursday last week, having left New York on the 10th inst. Mr. Mooers is accompanied by Messrs. W. H. Starin and W. J. Morgan, the former having been chosen on the day before sailing to attend to details of preparation for the race, and also act as a sort of trainer and manager in helping Mr. Mooers to get into condition for the physical strain. Instead of bringing both the new 80-h.p. Peerless and the 40-h.p. car of last year, as was at first intended, only the new racer was brought by Mr. Mooers. As will be seen from our illustration, the big car has been fitted with a novel hood of wire netting which admits the air to every part of the engine, yet protects it from flying sticks and stones.

Le Mond Sportif publishes an interview with M. Jenatzy, who will form one of the German team in the Cup race. He is reported to have stated that if any of the Mercedes team win it will mean at least from £5,000 to £6,000 for the winner. He also stated that the three Mercedes cars will be shod with Michelin tyres, the Michelin Co., in order to fulfil the regulation that everything on the car shall be manufactured in the challenging country, having established a branch at Frankfort, where the tyres have been made.

question, has stated that the Treasury had not yet arrived at a definite decision as to the question on whom would fall the cost of the extra police necessary for the protection of the public during the race for the Gordon Bennett Cup. A subscription list has in the meantime been opened to defray a portion of the cost entailed in this connection, and the Lord-Lieutenant of Ireland has headed the list with a donation of fifty guineas. Subscriptions may be sent to the offices of the Automobile Club, 110, Piccadilly, W., and addressed to "the Chairman."

MESSRS. BECKETT AND SONS, of Fleet Street, Dublin, have issued a price list of their motor spirit, lubricating oils, etc., and hope to see many British motorists during the present season.

THE accommodation provided by the Irish Motor Company, Limited, of 55, South King Street, Dublin, at their new garage, 17, Golden Lane, Dublin, is very extensive, and many visitors during the Irish fortnight will doubtless be glad to avail themselves of the assistance of this firm.

SOME notable alterations are announced to come into force from the 1st July next, in connection with the London and North-Western Railway Company's Express Boat services from North Wall, Dublin, to Holyhead. The morning boat, which now leaves at 10.15 a.m., will not sail until 11 a.m., and not-

withstanding the later departure, the connecting trains on the English side will reach London at practically the same time as at present. From the interior of Ireland, moreover, passengers may, for the first time, leave at a reasonable hour in the morning from places as far north as Belfast, and as far west as Galway, Sligo, Cavan, Athlone, etc., catch the 11 a.m. steamer, and so reach London and other places in England and Wales during the same day. From the same date the night express steamer now sailing from North Wall at 9.10 p.m. will be made ten minutes later.

The County Surveyor of Armagh in the report to his Council a few days ago set out that during the past twelve months there was a general improvement in the condition of the roads in the county. The prospects of road maintenance in the county were on the whole encouraging, as nearly all the bad contractors had been eliminated. Although but few new contractors had come forward, still he (the surveyor) was every year perfecting the methods which he had adopted for working roads in his own hands; and with a good share of roads in the hands of suitable contractors, he looked forward to a rapid improvement in the condition of the roads. Concluding the report stated that a system of motor-

The secretary of the Automobile Club of Great Britain and Ireland, Mr. J. W. Orde, was present, and explained that the requirements of the Club for the proposed hill-climbing contest at Castlewellan, and of the speed trial from Clough to Castlewellan on July 7th. The council decided to exercise the powers conferred upon them by the recent Act of Parliament to close the roads to ordinary traffic on that day, and to do everything in their power to assist the Club in carrying the race to a successful termination. The Royal Ulster Yacht Club are presenting three cups for the speed trials of touring cars in this contest, and a specially designed cup is being manufactured for the occasion.

RAILWAY SERVICES TO IRELAND.

AMONG English railways, the Great Western have long attempted to woo the Irish traffic, and hence the improvements that have been made in the express service to South Wales. A bold scheme is now in progress in which, in conjunction with the Great Southern and Western Railway of



Photo by]

The Gordon Bennett Course. A Sharp Turn at Mageney Bridge.

[Lawrence, Dublin.

cars running regularly under proper control over the main roads of the county, and carrying passengers and light goods, would prove of such enormous benefit to the ratepayers that he thought the Council should take into serious consideration the possibility of promoting a complete scheme for the whole county.

SOME idea of the universal interest taken throughout Ireland in the forthcoming race is seen in the desire to secure July 2nd as a general holiday in Dublin. The Dublin victuallers have unanimously decided to co-operate with the Cattle Traders' Association of Ireland, in the endeavour to have the Smithfield Market closed on the day of the contest, and the market held on the preceding day. Attention has also been called to the fact that the date rather interferes with some Assize Courts, but whether legal machinery will be diverted, in order that the profession may enjoy this unique spectacle, remains to be seen. Local authorities are altering their day of meeting because of the race, and a general holiday appears probable.

A SPECIAL meeting of the County Down County Council has been held under the presidency of Mr. Thos. Andrews, D.L.

Ireland, it is hoped to capture considerable traffic between England and Ireland. While accelerated services have been developed on this side the English partners in the Irish railways have been absorbing local lines and steamboat services, so that the time is now nearly ripe for direct railway and steamer connections between London and the south of Ireland via the G.W.R.

As the "throughout" route between London and Queenstown is officially stated to be between forty and fifty miles less via Fishguard and Rosslare than via Holyhead and Dublin, it is obvious that the new route threatens to affect the London and North-Western Railway Company in all classes of traffic, even the American mails. There is plenty of evidence that the London and North-Western have realised this—a fact brought prominently to the front by a writer in the "Manchester Guardian," who points out that the original line from Rosslare formed a good connection with the Dublin, Wicklow, and Wexford Railway, and thus might obtain access to Dublin, the London and North-Western some time ago sought powers to subscribe to the funds and guarantee the interest and dividends of the Dublin,

Wicklow, and Wexford Railway, and to control the appointment of some of its directors.

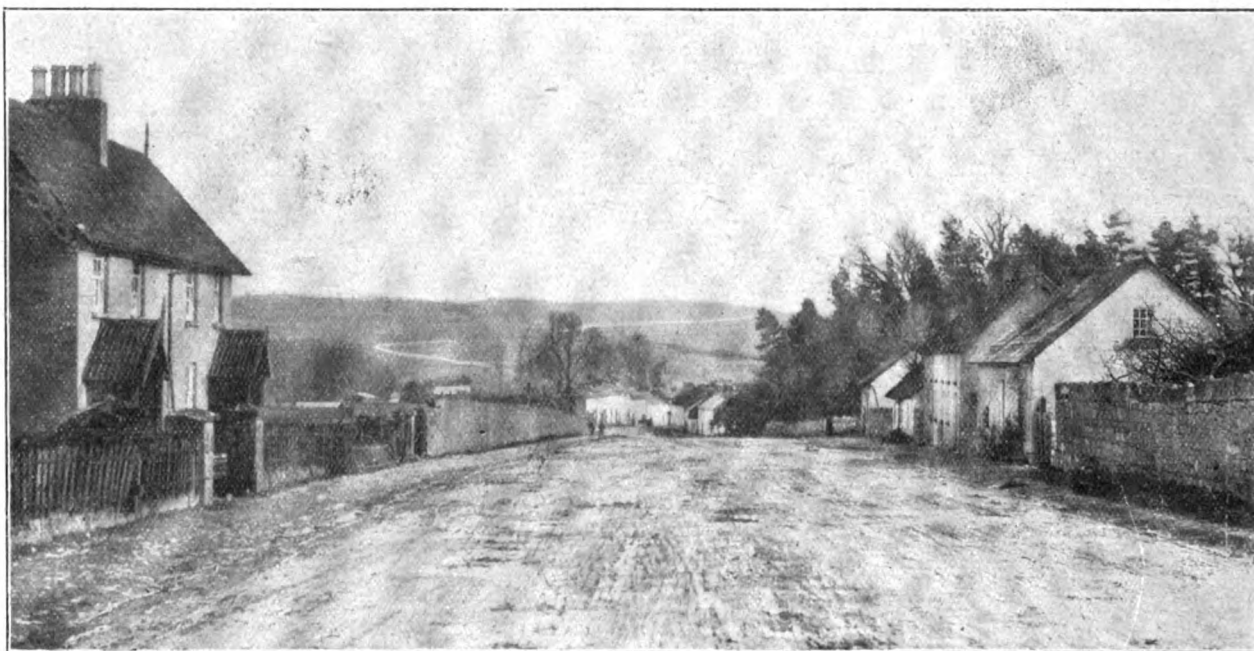
The London and North-Western Company have for many years controlled the greater part of the traffic from England to Ireland, but the recent development of competitive routes makes it certain that the former practical monopoly will soon cease. The Stranraer and Larne route is shared with three other lines on this side, and will now be controlled largely by the Midland Railway Company (as owner of the Belfast and Northern Counties) on the other. The Barrow route and the new route by the Midland from Heysham are out of the hands of the London and North-Western Company. At Fleetwood they share with the Lancashire, and Yorkshire and the goods traffic from Liverpool is fiercely competed for by the three great companies forming the Cheshire Lines Committee, and by the Lancashire and Yorkshire Company, and is by no means sought in vain. To these competitors may be added the Manchester Ship Canal, with its three direct steamship services to Belfast and Dublin, one of which will be utilised for the conveyance of a large party of Lancashire motorists to witness the Gordon Bennett race.

Even for passenger traffic from the South and West of Eng-

SUPPLIES IN IRELAND.

THE Automobile Club of Great Britain and Ireland have appointed the Vacuum Oil Company, Limited, to supply lubricants to the participants in the races and officials engaged in directing the same. Supplies can be obtained at the following places:—

ATHY	..	Duthie, Large and Co., Foundry and Iron Works.
BALLYSHANNON	..	Lee, James, Cross Roads.
BANBRIDGE	..	Craig, J., 35, Bridge Street.
BELFAST	..	Anderson, W. J., 150, Shankhill Road.
"	..	Craig, D., 110, York Street.
"	..	Ferguson and McRea, 46, Victoria Street.
"	..	Forsyth, W. J., 162, Duncairn Street.
"	..	Ireton, R. W., Windsor Cycle Works, Lisburn Road
"	..	Gass, J. H., 81, King Street.
"	..	Mallon, T., Ann Street.
"	..	Mulholland, W., 12, Madrid Street.
"	..	Osborne and Co., 77, Donegall Street.
"	..	Pomeroy and Co., 429, Lisburn Road.
CARLOW	..	Coleman, A.
CORK	..	Baker, F., King Street.
"	..	Callaghan and Co.
"	..	Cook and Son, Patrick Street.
"	..	Mulligan, J. T., King Street.
DOWNPATRICK	..	Starkey and Co., P., Irish Street.
DUBLIN	..	Reynolds, Harry, Crampton Quay.



Phot. Ly]

The Gordon Bennett Course. Stradbally with Windy Gap in the Distance.

[Lawrence, Dublin.

land to Dublin the new Great Western route is not to be despised. But the London and North-Western will not be inactive. They have almost completed the widening the greater portion of their line from Chester to Llandudno Junction, and possess in their line from Euston to Holyhead one of the easiest and best-laid roads in the kingdom. The average speed of the down Irish mails is only 48 miles per hour, whilst the North mail night express runs at 55 miles per hour, and the express steamers from Holyhead are quite capable of considerably shortening the time of the passage.

At the present juncture the matter is of particular interest, as there is no doubt we are on the eve of a great revival of interest in Ireland as a touring country. The railway companies are all doing what they can for the convenience of motorists, and the experience they will gain during the next few weeks in handling motor-cars should enable them to further encourage that class of the traffic in the near future.

THE Earlsfoot Terrace rink, at Dublin, will be a favourite rendezvous, less than half-a-mile from the Shelburne Hotel, which will be the headquarters of the A.C.G.B.I.

DUBLIN	..	Higgins, R. L., Motor Garage, Harry Street.
"	..	Irish Motor Company, South King Street.
"	..	Waller and Co., 4, Nassau Street.
NEWBRIDGE	..	Wood, T. H., Edward Street.
NEWTOWNARDS	..	Apperson, J., North Street.
"	..	Burrows, J., 36, Regent Street.
WATERFORD	..	Peare, W. F., Catherine Street.

Among the firms from whom supplies of Pratt's Motor Spirit can be obtained are the following:—

ATHY	..	Duthie, Large and Co.
BELFAST	..	Ferguson and Macrae; J. and J. Haslett; T. Mallon; Northern Motor Co.
CARLOW	..	The Motor Repairing Co.
CASTLEWELLAN	..	J. McCartan.
CLUB ENCLOSURE	..	Anglo-American Oil Co., Ltd.
CORK	..	Dobbin, Ogilvie and Co., Ltd; Cork Chemical Co. Harris and Beale; Baker and Wright
DUBLIN	..	Isaac Beckett and Sons, Boileau and Boyd, Ltd.; Dolan and Sons; H. Moore and Alexanders, Ltd.; John Clarke.
KILORGLIN	..	T. and R. Stephens.
KILLARNEY	..	R. Hillard; C. Meagher and Son.
NAAS	..	Denis Donohoe.
NEWCASTLE	..	Donard Buildings, Ltd.
PORTRUSH	..	A. C. Scott.
WATERFORD	..	G. White and Sons; Henry Bell.

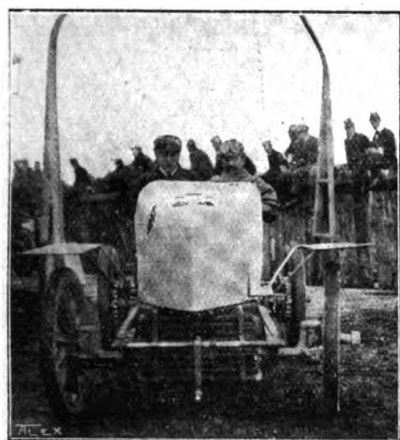
THE CIRCUIT DES ARDENNES.

CONSIDERABLE excitement prevailed at Bastogne last week-end. Cars were arriving in a continuous stream ready for the weighing-in, which took place in the station yard on Sunday morning. In order to prevent all chance of accident it was decided to run the race in sections, the big cars being despatched over the 85 kilometre course at daybreak on Monday morning. Out of the fifty-eight entries only twenty-seven started, out of which but eight completed the six rounds of the Circuit before the control was closed. The English drivers included J. Lisle (Star), Jarrott (De Dietrich), S. Girling (50-h.p. Wolseley), and Callan (50-h.p. Wolseley). The fastest time was made in the first round, it being covered by Baron de Crawhez in 56 min. 40 sec. Terry (Mors) and Lisle came to grief at the same turning at Longlier, Lisle's mechanic having his leg broken. The second round saw the falling out of Roberts (Prunel), Loste (Boyer), Gabreau (Boyer), Caillois (Serpellet), Giraud (C.G.V.), and Vanderbilt (Mors), owing to various causes. In the third round, Heath (Panhard) and Duray (Gobron-Brillie) fell out. In the fifth round, Jarrott (De Dietrich), the winner of last year's Circuit, had to give up owing to tyre troubles, as

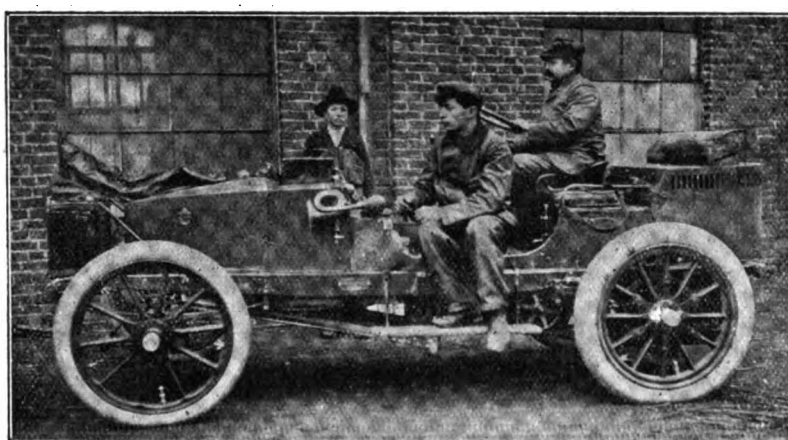
LIGHT CARS.

	H.	M.	S.
1 Baras (Darracq)	6	30	28 2.5
2 Tavenaux (Gobron-Brillie)	6	50	1 1.5
3 Cagno (Fiat)	7	6	50
4 Osmond (Darracq)	7	16	30 2.5
5 Hemery (Darracq)	7	33	48
6 Journu (De Dion)	8	2	10
7 Bardin (De Dion)	8	16	48

As we go to press we have received the following letter from Mr. E. Lisle at Neufchateau, giving the particulars of the accident to the Star Car :—" We should like the actual facts concerning the doings of Mr. Cordingley's car in the Ardennes Circuit made public, as in all these events many wild and absolutely unfounded rumours are spread. Our number was 37; Mr. J. Lisle driving, and Mr. Prew, the works manager, mechanic. Splendid progress was made, the car overhauling several large vehicles in fine style, and no better running could be wished for, as the car was good for an easy eighty miles an hour. Trouble was, however, in store for us in the shape of a very nasty accident. About two kilometres from Longlier there is an exceedingly awkward ascent, with three very dangerous turns in it. In rounding the second curve the speed must have been somewhat high, for Mr. Prew



Terry on the 80-h.p. Mors.



Chanliaud on the Serpillet Steam Racer.

THE CIRCUIT DES ARDENNES.

also Van der Poel (Pipe) and Chanliaud (Serpellet). The result of the complete Circuit is given below :—

HEAVY CARS.

TIME.

	H.	M.	S.
1 De Crawhez (Panhard)	5	52	7 3.5
2 Girardot (C.G.V.)	6	12	11 4.5
3 De Brou (De Dietrich)	6	23	29 1.5
4 Le Blon (Gardner-Serpellet)	6	31	3
5 Beconnais (Darracq)	6	48	5 3.5
6 Coppee (Germain)	6	57	14 3.5
7 Voigt (C.G.V.)	7	4	40
8 Guders (Pipe)	7	10	17 3.5

The honour of winning the event thus fell to Baron de Crawhez. He covered the distance (roundly 320 miles) in 5 h. 52 min., thus beating by a minute and a half the time made by Jarrott last year. Tyre troubles were the order of the day, due, it is said, to the roads having been wilfully strewn with nails.

Half an hour after noon the light cars were sent off for their race over the same course and distance. There were fifteen starters; including Barbaroux (Benz); the victor of the Huy meeting, Civelli de Bosch (Clement), and Lancia (F.I.A.T.), but only seven finished. The honours in this section fell to Baras on a Darracq. Appended is the classification :—

was shot out of the car and sustained a compound fracture of the leg. Mr. Lisle at once stopped, and carried his disabled mechanic close to the roadside, out of danger of other cars, and speedily obtained help. Consequently we abandoned the race."

THE Manchester Association of Engineers have paid a visit to several large works in Coventry. The party, numbering about eighty, journeyed to Birmingham, and thence to Coventry, where they proceeded in conveyances to the works of Messrs. Alfred Herbert, Limited, where they inspected the making of machine tools. A visit was afterwards paid to the factories of the Motor Manufacturing Company, Limited, and the Daimler Motor Company, Limited.

It has been decided to have the third run of the season of the North-East Lancashire Automobile Club to-day (Saturday), to Morecambe. This run will pass two notorious places for convictions against motorists, namely, Garstang and Lancaster. Certain firms in north-east Lancashire are to be communicated with, with a view of their appointment as official repairers to the Club, and Mr. Walmsley, of the firm of Walmsley and Yates, solicitors, Blackburn, has been appointed official solicitor to the Club.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE Renault racing car driven by M. L. Renault in the Paris-Madrid race has been purchased by Mr. J. Vanderbilt for the sum of £3,000.

THERE has been a change in the driver of the Mors car for the Gordon Bennett race. For some little time things have not been running very smoothly between the Mors firm and their Paris-Bordeaux and Paris-Berlin champion of 1901. M. Henri Fournier's magnificent double performance of two years ago has not been since followed up by similar successes, and naturally both parties have been dissatisfied. M. Fournier says he is certain that the fault lies with the firm of constructors, whereas the makers throw the blame on the other party. Thus the breach has been getting wider and wider, until after Paris-Madrid it became impossible to bridge over, and so the Mors firm annulled their contract with M. Fournier, pay him a large indemnity, and name as their champion for the Gordon Bennett Cup M. Gabriel, who has lately been so successful in driving their cars to victory. M. Gabriel is a well-known figure in the automobile world. It will be remembered that he first came to the fore as the driver of Darracq cars, but went over to Mors during last year's racing season. The substitute for M. Gabriel, in case he should be ill or unable to compete, is M. Salleron, who drove the Georges Richard car in the Paris-Vienna race and a Mors car in Paris-Madrid.

SPEAKING of M. Henri Fournier, everybody knows that he has been for the last two years manager of the largest automobile garage in Paris, namely Paris-Automobile, which is situated very centrally in the Rue d'Anjou. This has been identified particularly with the Mors car, but now the exclusive agency for the Hotchkiss automobile has been obtained by Paris-Automobile.

IN the Paris-Madrid race it will be remembered that Mr. Stead's De Dietrich car came to grief whilst trying to pass M. Salleron on a Mors car. Mr. Stead said the blame for the accident rested on M. Salleron, and he laid a complaint before the racing committee of the A.C.F. M. Rene de Knyff, president of the racing committee, has written M. Salleron the following letter, which puts an end to this unfortunate dispute: "Sir, I have the honour to send you herewith a note of the decision come to by the racing committee, at its meeting yesterday, on the subject of the complaint made against you by the firm of De Dietrich. The president informed the commission of the complaint made by the firm of De Dietrich against M. Salleron, relative to the accident which occurred to Mr. Stead. The Baron de Turkheim and M. Salleron attended to give information to the committee on the subject of this accident. The committee, after having heard the Baron de Turkheim and M. Salleron, and after having taken cognisance of different depositions by witnesses, decided unanimously: That no infraction of the racing rules can be brought up against M. Salleron, and it only remains to regret the unfortunate accident which occurred to Mr. Stead."

ANOTHER echo of the Paris-Madrid race has been the news of M. Georges Richard, who has been brought back to Paris, and is found to be progressing favourably. There remains an injury to his right leg, which has been fractured.

THE Ostend week will begin on July 11th and finish on the 18th, and will consist in a trial of skilful driving and a battle of flowers, which will take place on July 11th. On July 13th there will be a mile race with a standing start. On July 14th there will be a race from Ostend to Ypres and back via Nieuport and Furnes. On July 15th there will be a kilometre race, and on the 16th a race over 10 kilometres. On July 17th there will be a race for tourist cars over 5 kilometres, and on the 18th the meeting will end by an exhibition of the cars.

ON Friday last week the Huy race took place in the Ardennes, and consisted of a kilometre race and a hill-climbing trial. The kilometre race reserved a surprise for the whole automobile world, for a light Benz car was the winner, accomplishing the distance in 30 and 1-5 seconds, at a speed of nearly 120 kilometres an hour, and beating Mercedes, Darracq, and Clement. The hill-climbing test, which followed the kilometre, only confirmed the victory of the light Benz car, which was driven by Barbaroux, for it came out also the winner of this event, beating all the other light cars by more than ten seconds, and leading the Mercedes by nearly three seconds. It is fair, however, to state, that in the hill-climbing trial De Caters on the Mercedes had to switch off his ignition in passing a carriage which was stopped on the hill at a turn; and it is also only fair to say that after the competition was over De Caters attacked the Belgian record for the flying kilometre, which he himself established on a Mors at Ostend with 29 and 4-5 seconds. On a 60-h.p. Mercedes he succeeded in reducing this record by 1-5 of a second.

THE Dutch Automobile Club has organised a reliability trial to be held from July 21st to 24th. It will consist of daily runs from Utrecht of respectively 190, 180, 145, and 110 kilometres, — a total of 625 kilometres.

It is reported that the Swiss Automobile Club has resolved to cancel all the races it proposed to hold this year.

THE *Daily Telegraph* has closed its correspondence on the Social Juggernaut. Its readers will thus be saved several columns of wearying reading.

MR. JOHN BIBBY died at Manchester Infirmary, last week, from injuries received by being thrown out of his motor-car, which collided with an electrical standard.

MR. JOSEPH H. CHOATE, son of the American Ambassador, and his bride have sailed for England. They intend to pass the first part of their honeymoon in motoring.

THE Artillery Wheels Works, Limited, has been registered with a capital of £3,000, and offices at 19 and 20, Holborn Viaduct, E.C.

THE Hill Climbing Contest of the Manchester Automobile Club advertised to take place last Saturday has been postponed until later in the season.

DURING the strike amongst the engine-men on the Victorian railways, which are exclusively in the hands of the Government, motor-cars were used to convey the mails, and the result has been to draw attention to the advantage of such a plan.

THE last official count of automobile clubs in the United States shows fifty-nine organisations in twenty-three states. New clubs are springing up almost every day, however, so that this list is subject to revision at the present time.

A MOTOR ambulance has been purchased by the Westinghouse Electric and Manufacturing Company, of Pittsburg, Pa., for use in their works at East Pittsburg. Hitherto the victims of accidents have been sent to their homes or to the hospitals on trains or in carriages, the delay causing much needless suffering. Now the automobile will be kept constantly in readiness.

FROM E. Gundlach's Verlag, Bielefeld, Germany, we have received a copy of "Das Motorfahrzeug und Seine Behandlung," a small handbook giving illustrations and descriptions in German of motor-cars and motor-cycles. The action of the four-cycle motor is explained by means of clearly-drawn diagrams, while other sections are devoted to carburation, ignition, silencing, etc.

WITH regard to the suggestion of the Manhattan Fire Brigade, referred to in our last issue, that provision should be made, where electric tramway and lighting wires are in use, for connections to enable electric fire-engines to be driven, Messrs. Merryweather and Sons, Limited, have sent us an illustration and particulars of an engine suitable for such a system made by them for Messrs. Siemens Brothers, of Woolwich, so long ago as 1891.

MOTOR-CYCLING NEWS.

BETWEEN August 10th and 22nd of the present year an important series of trials for motor-cycles will be held by the Auto-Cycle Club. The principle underlying the rules is that the trial is one of reliability. There are to be hill trials, and in these speed will be taken into consideration only for the purpose of a record on the certificate. There will be no special prizes, but certificates only, which will be divided into three classes, first, second, and third.

THE classes will be decided by the performances of the machines, and a record of the performances will be noted on the certificate of each machine, whatever the class. The cycles will not be under observation during the whole period, but they will be required to traverse sections of about ten miles long within definite limits of speed, and marks will be deducted for any excess of these limits. Speed in excess of the maximum allowed will subject the riders to disqualification.

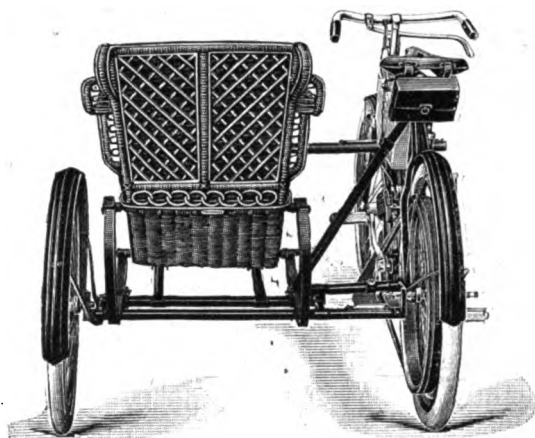
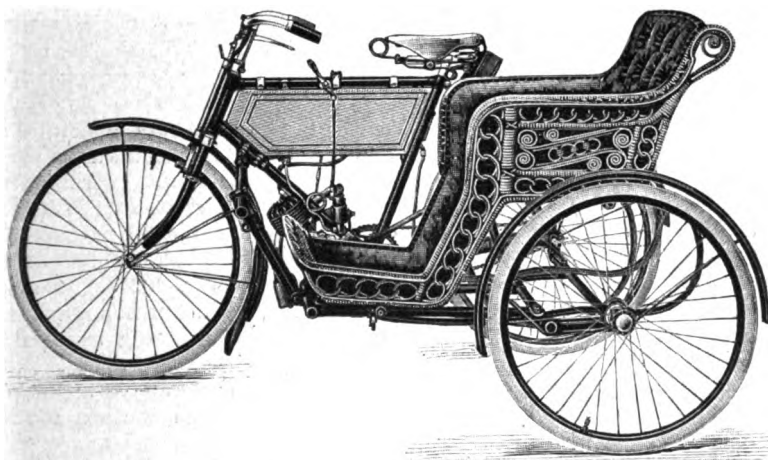
IN arriving at their final verdict the Judges' Committee will take into consideration points in connection with the construction and behaviour of the cycles. The number of machines of any particular type and horse-power entered by a manufacturer or agents is limited to one, but six machines of different types

The power of the motors allowable will be about 3-h.p., the maximum bore and stroke not exceeding the square of $3\frac{1}{2}$ in. by $3\frac{1}{2}$ in.

EVERY competitor must ride the one machine throughout the race. Each machine must be efficiently braked and silenced, and must carry a cycle horn. A number of prizes are offered, while certificates of merit will be presented to all competitors covering the course in nine hours and under.

THE motor-cycle section of the Austrian Touring Club has decided to organise a 1,000 kilometre reliability trial for motor-cycles on the lines of that of the Auto-Cycle Club. Daily runs are to be made from Vienna.

THE Liverpool Motor Cycle Club had arranged a hill-climbing contest to take place up Parbold Hill on Saturday last, and a large crowd assembled there in anticipation of seeing the event carried out. Shortly after the proceedings had commenced, however, the police interfered and took the names and addresses of the captain and secretary for riding up the hill at too high a speed. Mr. J. Edge, the captain of the club, informs us that the police gave permission, or at any rate said they could see no objection to the members of the club riding up the hill, if they would start halfway up. But when the police noticed the pace at which the "Bat" could and did go up, they said the riders



Side and Rear View of "Liberty" Sociable Attachment for Motor Bicycles.

may be entered. The trial is open to tourist machines only. Racing machines will not be admitted. A class will be provided for private owners.

THE total mileage to be run is 1,034, divided into nine daily trips to Canterbury, Brighton, Worthing, Eastbourne, Folkestone, Basingstoke, etc. The entrance fee for the trials will be £10 per machine, £5 of which will be returned if the machine actually starts on the first day's run, except for the private owners' class, the fee for which will be £2 2s.—non-returnable, if paid not later than 12 noon on Saturday, July 11th. After that hour the entrance fees will be increased 25 per cent. per week. No cycle can be entered after noon on Tuesday, July 28th.

A NUMBER of motor-cycle races were run off on the Velodrome de la Cambre, Brussels, on the 14th inst., including a handicap, the final for which was a 10-kilometre event. The race resolved itself into a sensational duel between Andre and Coppin, the former using a $3\frac{1}{2}$ -h.p. Red Star motor-bicycle, known in this country as the Gamage, and Coppin a 6-h.p. machine. After a keen struggle Andre managed to win by a few yards.

PARTICULARS are now available of the first motor-cycle road race to be held in Australia, which is being promoted by the Dunlop Tyre Company. The race will be held from Warrnambool to Melbourne, a distance of 165 miles, on Saturday, August 22nd.

must not go up at that pace, as it was dangerous. Under these conditions the affair was abandoned.

WHEN in Enfield the other day we had an opportunity of inspecting the sociable attachment for motor-bicycles devised by Messrs. Graham Bros., of the Parade Motor Works, which has been taken up, and is now being put on the market by Components, Ltd., Birmingham. The "Liberty" sociable attachment consists of an arrangement by means of which a spring-supported and nicely-upholstered wicker chair can be coupled alongside any ordinary motor-bicycle in such a way that the riders sit side by side, thus adding considerably to the pleasure to be derived from the pastime. The chair is mounted on a steel tube framework having at one side a pneumatic-tyred wheel. This framework is attached to the rear fork, the back axle, the seat tube, and the forward tube of the cycle frame. From the illustrations it will be seen that the machine presents a very neat and practical appearance, while it is claimed to be practically free of side slip, and more easily steered than a motor-tricycle. The sociable can be attached or detached in a few minutes, the combination possessing the advantage of requiring only a 15s. licence.

PROF. HELE-SHAW, of Liverpool, was one of the vice-presidents of the "Transmission" section of the International Automobile Congress held at the A.C.F. in Paris last week.

THE "ORIENT BUCKBOARD."

QUITE a number of new vehicles designed to meet the demand for a popular-priced, two-seated motor-car have recently made their appearance, one of the simplest and most novel being the "Orient Buckboard," made by the Waltham Manufacturing Company, of Waltham, U.S.A., which is being introduced into this country by Messrs. H. G. Green and Company, of Tothill Street, Westminster. Fig. 1 gives a general view of the vehicle, which we had an opportunity of inspecting the other day. With the exception of the seating arrangement, it is almost identical with the motor quadricycle. There is n

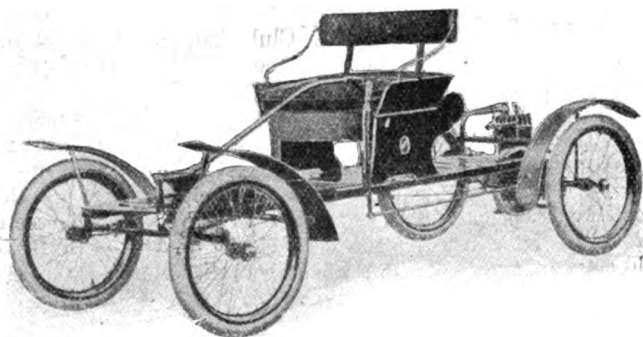


FIG. 1.

frame in the ordinary sense of the term, the front and rear axles being connected by a "buckboard." The latter consists of two flexible hickory reaches, having a section of $1\frac{1}{4}$ by 3 inches, upon which are bolted cross strips of ash, forming a platform upon which the seat is mounted, resting upon rubber cushions. Between the front end of the platform and the forward axle are interposed two small leaf springs to absorb all vibration from the wheels, while at the rear it is connected rigidly to brackets on the rear frame. The motive power is supplied by a 4-h.p. air-cooled motor supported behind the rear axle. The engine has cooling flanges of corrugated copper, and can, it is stated, run at any speed from 250 up to as high as 3,500 revolutions per minute. The mixture is furnished by a float-feed, spray-type carburettor in conjunction with which is a pedal-operated throttle. The engine is geared direct to the rear axle in the same way as the old De Dion tricycles and quads, a clutch being, however, combined with the large gear wheel on the rear axle to give a free engine. The pinion on the engine shaft is made of rawhide and steel, this, together with the one on the axle, runs

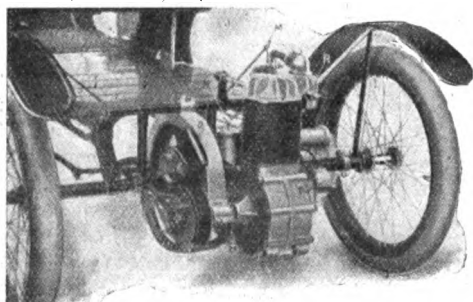


FIG. 2.

in a gear box. The ratio of the two gear wheels is $7\frac{1}{2}$ to 1. The cycle-type road wheels are 26 inches in diameter, shod with $2\frac{1}{2}$ in. single tube tyres. The overall dimensions are 8 ft. 10 in. by 4 ft.; the wheel base is unusually long for so light a vehicle, viz., 6 ft. 8 in., the weight complete being 400 lbs. As will be seen, tiller steering is provided. In the construction of the Buckboard the aim of the makers has been to produce a motor vehicle with the least possible complication and with the fewest working parts

with which a practical conveyance could be made. It is under perfect control by the foot throttle and sparking advance lever, and can be regulated at will from four to thirty miles an hour on favourable roads. It is claimed to be able to climb all ordinary hills. Very steep short inclines can easily be ridden by speeding up the engine slightly before reaching them, and in an extreme case the rider can step off the machine and run it up with its own power, or help it if necessary. A feature of the vehicle is the arrangement to start the engine, this being done by a handled strap and ratchet device. To start the motor, the compression cock M (Fig. 2) at the top is first opened slightly to relieve the compression. The carburettor is then flooded by working the small pin up and down quickly a few times. The starting handle is next pulled up, turning the fly-wheels over, upon which the motor will start off running slowly. The driver then takes his seat and moves the clutch lever at his left hand slowly forward when he desires to start, at the same time giving the motor the necessary power by first advancing the sparking lever at the left of the seat and then pressing on the foot throttle. The machine is fitted with a powerful pedal-operated hand brake, and to stop it is only necessary to pull back the clutch lever and press the foot on the pedal. Altogether the vehicle is of an extremely simple design and should give a great deal of pleasure to those would-be motorists whose means do not allow them to go in for a more powerful, and consequently more costly, car.

SOME USEFUL NOTES.

THE throttle valves upon all steam cars generally require regrinding at regular intervals, and a few words as to the proper method of performing this apparently simple operation may not be out of place. A writer in the "Horseless Age" remarks that he has been in repair shops and seen supposedly competent men grinding poppet valves, whether for steam throttle or for the inlet or exhaust valves of petrol motors, holding one part in a chuck in the lathe and the other part in the hand, and running the lathe at a rapid rate, feeding the grinding material around the joint to be ground and bringing pressure upon the parts by the hand. This is decidedly the wrong way to accomplish the desired end, viz., a perfectly straight, true surface at the valve entirely free from rings.

THESE rings or grooves once started upon the seat and valve surface of any form of poppet valve, it is almost impossible to efface them by subsequent grinding, no matter however carefully done, and the only remedy would consist in machining the surfaces down true again, putting the valve into the lathe and turning up a new surface and using a special angular milling cutter or reamer for the seat. If a due amount of care is exercised in the grinding these expedients will never become necessary, and in grinding such valves the surfaces should be smeared with machine oil and emery, using about No. 90 to begin with for most work and finishing with flour of emery.

IN the case of a steam throttle one piece should be held in a vice and the other part turned by the fingers or a screwdriver, with the application of only moderate pressure, as too heavy pressure will be apt to produce the grooves above referred to. The parts should be turned first in one direction, then in the other, turning in one direction a little farther than in the other each time, so that the valve is continually revolving over all portions of the seat. As soon as the grinding material has ceased to cut—which can be felt and heard—the old material should be wiped off and replaced by fresh. In the case of a steam throttle, where both surfaces are of brass, it is a good plan to finish with grindstone grit. The ground surfaces should not be shiny when finished, but should have a dull, frosty appearance, and both valve and seat should show a uniform character of surface all the way round.

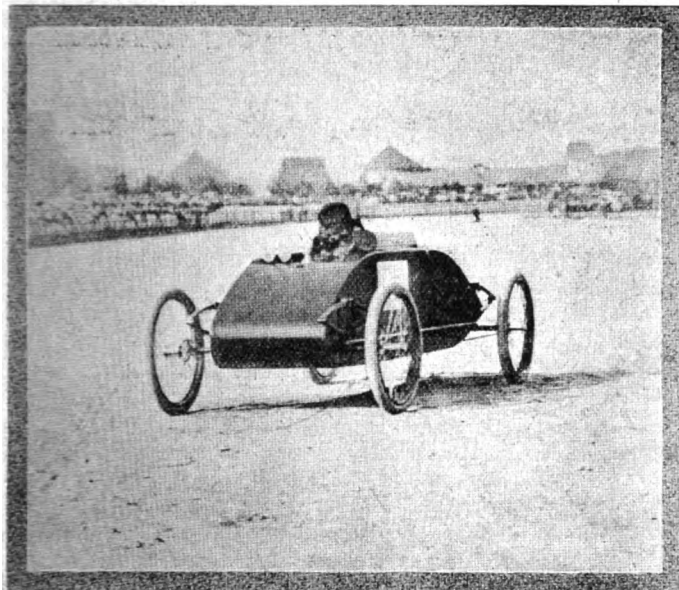
HERE AND THERE.



VISCOUNT BOYNE has ordered a 22-h.p. Daimler car.

THE Scarborough Town Council will not allow public motor-omnibuses to go over the Valley Bridge.

MR. A. R. ATKEY, hon. secretary of the Nottingham Automobile Club, has returned home after a prolonged tour in South Africa.



Mr. F. C. Stanley on the Stanley steam Car on which he covered a mile in 1 min. 24.5 sec. *Motor Age.*

A NEW pneumatic motor tyre, to be known as the "Autotyre," is about to be put on the market by Mr. Berne Nadall. We hope to give some details of it in an early issue.

THE Leeds Watch Committee have granted a licence for the running of a motor omnibus between the city and Stourton, a distance of about three and a half miles, for which a fare of sixpence will be charged.

THE Edinburgh Garage and Motor Company, Ltd., has been registered with a capital of £5,000, to carry on the business of manufacturers of, dealers in, and letters on hire of motor-vehicles of all kinds, and all parts and accessories pertaining thereto.

MANY of the motorists going to Ireland for the forthcoming series of events will welcome the treatise on Photographic Lenses published by Messrs. R. and J. Beck, Limited. This will be of service to amateur photographers, giving in a concise form much information not only as regards the functions and types of lenses but also as to their practical application in landscape and architectural work. The chapter with regard to the hand camera is particularly well done, and the table of speeds required for various subjects at different distances will be of value to the hundreds of people who will "snap" at moving automobiles.

THE scenery and history of the Midland Railway are well described by Mr. Alan J. Woodward in the comprehensive volume on that great organisation just published by Messrs. Bemoose and Sons, Limited. This is an illustrated volume of reference for travellers and traders, and is placed in the carriages of the Midland Railway Co., where it is frequently used by passengers to beguile moments that might otherwise become monotonously weary. The illustrations are capital, while the industrial facts scattered throughout its pages, as well as the historical information, are not only well set forth but are also accurately told. Lists of hotels and places of interest in the vicinity of great towns on the Midland system add to the attractiveness of the work, upon which the editor is to be congratulated.

SIR CHRISTOPHER FURNESS, M.P., has landed at Folkestone after a six weeks' automobile tour on the Continent.

THE speed of motor-cars journeying through the county of Fife is among the new subjects of study for the Chief Constable.

THE Cheltenham Automobile Club suggests that fines for excessive speed should be proportionate to the horse power of the automobile.

A PAMPHLET showing how to reach the Gordon Bennett course has been published by the "Irish Wheelman," and will be on sale wherever motorists congregate in Ireland.

IN consequence of the dust raised by motor-cars on Sundays, the district council of Sunbury have decided to have their water-carts out from 6 to 9 p.m. on Saturday evenings.

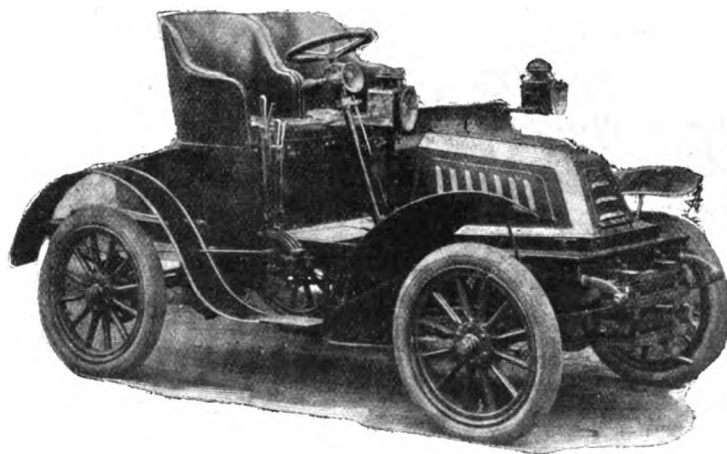
THE Onward Motor Works of Croydon are about to erect new works near the motor track at Purley. The premises will be open night and day for the accommodation and repair of cars.

ON the main road from the town to the racecourse at Doncaster, Messrs. W. E. Clarke and Company are now stocking the Gas Lighting Improvement Company's petrol as well as Messrs. Carless, Capel and Company's petrol and Pratt's motor spirit. They are in a good position to store cars, supply spare parts, etc.

"QUIET Holiday Resorts at Home and Abroad" is the title of a new book of more than three hundred pages just issued by Messrs. S. H. Bousfield and Company, Limited. It is a practical guide to the most charming resorts in the British Isles, and being supplemented by some suggested automobile tours will not be without interest to the motorist.

AT the Supreme Court at Christchurch, N.Z., Mr. Henry Rushton, an engineer, has claimed £300 damages from Messrs. R. Moritzson and Co., of Dunedin, for breach of contract for the building and equipping of a motor launch to run between Sumner and New Brighton. It was alleged that the defendants failed to supply particulars of the propeller and reversing gear, in consequence of which defendant lost the last summer season.

MESSRS. R. REYNOLD JACKSON and Co. have just introduced the Jackson Popular car illustrated herewith. As will be seen in general arrangement it follows standard lines. The motive power is supplied by a 6-h.p. De Dion engine. Three speeds forward and a reverse controlled by one lever are provided, the drive on the top speed being direct. From the gear box a cardan shaft and bevel gear transmit the power to the rear live



axle. The speed of the motor is regulated by a throttle valve, the latter being controlled either by hand or foot, the controlling device being so coupled up to the clutch and brake pedals that on either being used the speed of the motor is automatically retarded. The car has a long wheel base, the two-seated body leaving a large amount of space at the rear on which luggage can be carried or a detachable seat fitted.

LORD RENDELL has just purchased a 16-20-h.p. Rochet-Schneider car.

MR. O. SELBACH can supply single and double-cylinder Regal cars and four cylinder chainless cars practically from stock.

MR. E. B. MILBURN has a repairing shop opposite the Ailesbury Arms Hotel, Marlborough, and also keeps spare parts, etc., in stock.

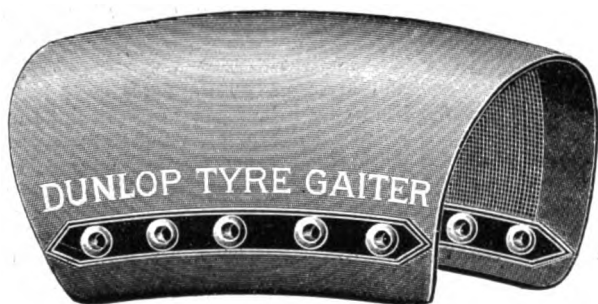
THE Motor Cycling Club run on Sunday will be to Hitchin, the meeting place being Old Salisbury, Barnet, 11.30 a.m. Lunch at the Cock Hotel, Hitchin, 1.30 p.m.

THE rumours which have been currently reported in the press as to an order for one hundred automobiles for South Africa are entirely unknown to the representatives of the Colonies in this country.

AT Victoria Street, St. Albans, the New Century Motor and Cycle Co. have opened a garage and repair shop for motor-cars. They have a competent staff of mechanics, and are also in a position to supply spare parts, etc.

MR. T. THROUP, of Bradford, to whose excellent guides reference has already been made, sends a copy of his North Wales Cyclists' and Motorists' guide, which will be of service to all tourists in North Wales, as well as parts of Cheshire and Shropshire.

THE accompanying illustration shows the new gaiter which the Dunlop Tyre Company has perfected for lacing over bursts in motor tyre covers. The device is built up of rubber and canvas vulcanised together in a manner similar to that of the



tyre tread itself, and the eyelet holes are not only protected by brass, but pass through leather straps inside and out. The gaiter is made to suit tyres from 2½ inches to 5 inches in diameter.

MESSRS. CASSELL AND COMPANY, LIMITED, have issued a little handbook of photography which presents in a handy form nearly all that the amateur requires to know. It is written by Mr. Arthur Hands, an instructor in the art in some of the technical institutes in the eastern suburbs of London, whose practical acquaintance with the needs of novices has resulted in a book of utility as well as of interest.

THE inquests on the three victims of the accident at Bristol Post Office sports on 23rd May has been concluded. The jury found a verdict of "Accidental death," and added a rider that the accident was due to an error of judgment on the part of one of the riders; also that insufficient steps were taken to safeguard the public. It also expressed pleasure that the authorities would not sanction any more motor-cycle races, as the track is unsuitable.

THE Manchester Motor Transport Company, Limited, who have been contracting for the conveyance of cloth for a leading Bolton firm between Manchester and Bolton, inform us that the maximum number of trips possible has been 554, of which 518 were completed without any hitch whatsoever. A score of runs had to be abandoned, and on the remaining sixteen some delay was experienced. Thus 93.5 per cent. of the trips were a success—a fact upon which the Lancashire Steam Motor Company, the builders of the car, are to be congratulated.

PETROL manufacture is contemplated as an additional branch of business by the Scottish oil companies.

THE Metropolitan Committee on materials and means of paving the streets of London has elected Mr. A. C. Morton as its chairman.

THE chairman of the Bangor (Ireland) Petty Sessions has drawn the attention of the police to the speed of automobiles passing through co. Down.

MESSRS. VAN RADEN AND CO., LTD., Coventry, have just fitted up a new factory for the manufacture of all kinds of electrical fittings suitable for the motor industry.

THE Central Motor-Car Company, of which Mr. H. Cassell is manager, have opened a depot at 111, Bothwell Street, Glasgow, for the sale of 12, 16, and 24-h.p. "Cassell" cars and a 6½-h.p. two-seated voiturette.

THE Roots Oil Motor and Motor-Car, Ltd., have sent us copies of circulars they have issued, giving illustrations of their 4-h.p. and 12-h.p. cars, and 12-h.p. lorry to carry 25 cwt. The motive power is of course supplied by engines using ordinary petroleum oil as fuel.

MESSRS. HELY'S, LIMITED, of Dublin, have brought out an interesting series of picture postcards in connection with the Gordon Bennett race. Doubtless the automobile fortnight will lead to a brisk demand for these souvenirs, and Messrs. Hely are not only the first in the field, but have set a standard of excellence that will be hard to beat.

DURING the week from September 26 to October 1, inclusive, Chicago is to celebrate the 100th anniversary of the settling of the city and the establishment of Fort Dearborn. The celebration will be a most notable event in every way, and money is being lavishly expended to make it memorable. To local automobilists the item of most interest is that one entire day is to be given over to them, and the organisation of the plans for this day has been placed in the hands of a special committee.

MR. EDUARDO HIGGINSON, the Consul of Peru at Southampton, has sent us a copy of a large folding map of Peru he has just issued under the authority of the Peruvian Minister of Foreign Affairs. The back of the map is used as pages, on which is given a short description of the country, this including references to its geographical features, climate and resources, agriculture, commerce, industries, railways and means of communication, education, etc. The map is one which will be found useful by all interested in the country of Peru.

A PLEASANT run of the Yorkshire Club took place recently to the pretty little village of Ripley, which lies three miles beyond Harrogate on the road to Ripon. The meet of the members from the different towns was at Poole Bridge, on the river Wharfe, and the cars took the road via Weeton, Pannal and Humphrey Bank. Tea was provided at the Star Hotel and afterwards a visit was paid to the Castle grounds. The following members joined the meet:—Mr. and Mrs. Faiers (Darracq), Mr., Mrs. and Miss Armitage (Clement), Mr. and Mrs. Jessop (M.M.C.), Mr. and Mrs. Booth (De Dion), Mr. and Mrs. Whitworth (De Dion), Mr. and Mrs. Exley (Beaufort), Mr. and Mrs. Jones (Pieper), Mr. and Mrs. Firth (quad), Mr. Steele (Benz), Mr. Parker (motor-bicycle), and Mr. A. W. Dougill, hon. sec., 2-h.p. bicycle.

MESSRS. S. F. EDGE, LTD., have sent us a photograph of a 16-h.p. Napier which has been built for Mr. C. J. Glidden, of Boston, U.S.A., who is this year making his third European tour on a car of this type. The car has just been despatched to meet him at Liverpool, where he lands from New York. After the Gordon Bennett race Mr. Glidden will make for Norway, and from there he will try and go as far north as it is possible by motor-car to go. The car has 40-inch road wheels, and the tonneau will hold five people comfortably, besides spare tyres and dressing-bags. It has a top speed of 35 miles an hour, and will climb hills of one in four with full load. Special long distance petrol and lubricating tanks are fitted.

CORRESPONDENCE.

TREMBLER COILS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 6th inst., page 275, I observe a note by Messrs. John Child Meredith, Ltd., stating positively that a trembler coil is necessary with a wipe contact, particularly with De Dion motors. I beg to say that such is not the case, as I have a De Dion motor, 2½-h.p., fitted on a little car, originally on a tricycle, on which I have fitted a wipe contact, practically similar to the old Benz system. I use the original De Dion non-trembler coil. This I find gives perfect sparking, if occasionally lubricated, and I would not go back to the De Dion contact breaker under any circumstances.

There is another small car also in this town (Weston-super-Mare), fitted with wipe contact and non-trembler coil, giving excellent results.—Yours truly,

ARTHUR J. CARY.

A MOTORDROME NEAR PARIS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see from your very interesting journal that you have mentioned under "Continental Notes," page 305, about the motor track of Buzenval Park, close to M. Edmond Blanc's racecourse. I should like to draw your attention that I have not "unearthed" this estate, but am the owner since 1896. Thinking it was a suitable site, I asked several experts their advice, amongst others M. L. Serpollet, who found it would make a splendid racing track, with a straight mile for records, and contained gradients in certain parts equal to 10 per cent. and 14 per cent. The park is a seven-minutes' drive by car from the Bois de Boulogne. Car manufacturers tell me that it will be of immense help to them, as it will allow them to show their cars at work to the public, and that close to the gates of Paris.—Yours truly,

WALTER M. LANG.

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In the letter from the Duryea Motor Carriage Company in the last issue, they make a mistake in saying that we have learned nothing through the Paris-Madrid race. We most certainly have, or rather Panhard's have. For racing cars, and indeed all cars, they have discovered that an absolutely vertical engine is a necessity. Hitherto, in their 24, 40, and 70-h.p. cars, they have had no trouble regarding lubrication of the cylinders. But their 1903 racing cars had engines that were sloping forward, thus allowing more room for the flywheel. For the first time the cylinders on the Panhard cars did not get proper lubrication, proving that Panhard's made a big mistake in not sticking to last year's vertical engine. If it had not been for motor racing we should still have 8-h.p. cars, weighing about one ton, with a top speed of about fifteen miles per hour, tube ignition, solid tyres, tiller steering, and many other things of the past. And yet people say racing has done nothing for the motor industry!—Yours truly,

J. C. NIXON.

COST OF UPKEEP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a contrast to the experience of "cost of upkeep" which Mr. James Burns gives by letter in your last issue, your readers might like to have mine with a 6-h.p. M.M.C., which I received in March, 1902. I have kept strict account of every penny it has cost me for the year ending March, 1903, together with particulars of the mileage covered. I employ no man. I covered 2,947 miles in the year, and it cost me £95. This does not include £12 damage by a sideslip, which the Insurance Company paid; but it does include £6 for such insurance, £117s. 6d. fire insurance, and £10 stabling. The actual cost of a non-capital nature, namely for repairs, petrol, stabling, etc., is £76 6s. 11d.—Yours truly,

G. ARTHUR WINGFIELD.

"POLICE TYRANNY."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I bring before your notice what I consider is the most absurd and I think the worst method of trapping motorists, which has just occurred? Leaving Carnarvon, we saw no signs of police, but arriving at Bangor an officer in uniform stepped forward, while we were crawling in, looking for an hotel to dine at, speed about four miles, and asked for my name and address; he had no charge to make, but simply said that all cars were being timed on leaving Carnarvon, and if we had been going over the limit when the time was compared results would follow. In Russia and other countries such things are possibly done, but in England, where "all men are free," is such obstruction to be allowed?—Yours truly,

PETER FRANK, JUN.

MR. JAMES BURNS writes that the cost of petrol referred to in his letter last week as £35 should have been £85.

IN answer to "Novice," "W. R." writes:—"I think 'Novice' will find the fault in the sparking plug packing washer, compression causing air to pass through leakage and blow out spark. I found this often with a small 5½-h.p. car I had last year. Put in a new washer and try it. Tighten up well, and again tighten after first run."

POLICE TRAPS.

A NEW trap has been established on the Queen's Road, Weybridge

THE police have established a trap on the Christchurch side of Iford Bridge, on the road to Bournemouth.

THE Chief Constable of Sutton Coldfield has promised the local magistrates that he will give attention to speedy motorists on the Lichfield road.

SEVERAL traps are being laid near Wolverhampton. About half a mile before entering and also leaving Shifnal, and also near Penkridge, there are devices into which motorists have lately fallen.

CLAIMS FOR DAMAGES.

AN action was commenced in the Lambeth County Court against Mr. E. W. Hart, by Mr. Gautier, for damages alleged to have been received in consequence of Mr. Hart's motor-car having run him down in the Kennington Road. The case was heard last week before Judge Emden and a jury. Mr. Staplee Firth appeared for the defendant, who obtained a verdict with costs.

THE District Iron and Steel Company, Limited, of Smethwick, have been sued in the Birmingham County Court by Messrs. Crosbie, Marriner and Co., Limited, who sought to recover £23 7s. 11d. damages to the plaintiffs' weighing machine, caused through the defendants' servants drawing a motor-wagon on to it. The machine was smashed in December last by a load of iron on a motor-wagon. It was alleged for the plaintiffs that the weight of the motor-wagon and its load was too heavy for the machine. The weight, it was argued, was greater than that of ordinary traffic. The defence was that permission was given to weigh the load on the machine. The jury found for the plaintiffs for the full amount claimed.

AT Bristol County Court, before Judge Austin, an action has been brought by Messrs. Hope Brothers against Mr. H. E. Sharp, motor expert, to recover £23 8s. 4d., damage to a window by an accident alleged to have been caused by the defendant. The plaintiffs' case was that on January 10th the defendant was riding a motor-bicycle behind a van in Wine Street, and that the horse in the van became restive because of the noise of the motor. The defendant, it was stated, put on extra speed when alongside the horse, which swerved and bolted into the plaintiffs' windows. In giving judgment, his Honour said it was unfortunate that motor-cars should be allowed in a city like Bristol, but they were authorised by the law, and must be tolerated. A motorist had a right to use the highway, but, like everybody else, he must use it with reasonable care. He was of opinion that the accident was brought about by the negligence of the defendant, and therefore there must be a verdict for the plaintiffs with costs.

CLAIM AND COUNTER CLAIM.

IN the King's Bench Division of the High Court of Justice, the case of McWhirter v. the New Automobile Company and S. R. Bailey, the managing director of the company, came before the Lord Chief Justice and a special jury. It was an action by Mr. Charles McWhirter, of Watford, Hertfordshire, to recover £143 10s., which he had paid on July 2nd, 1902, as deposit on the purchase of a car for £430 10s. Plaintiff's case was that in the summer of 1902 his attention was called to an advertisement of the Miesse Steam Motor Syndicate, of Wolverhampton, whose show-rooms were stated to be at Cambridge Circus, Shaftesbury Avenue, London. On going to that address he found it to be the premises of the defendant company, whose manager, Mr. Bailey, he saw. The company appeared to be agents for the Miesse Syndicate, and he ordered a 6-h.p. car for £430 10s., paying £143 10s. as deposit, it being a term of the contract that the car should be delivered by the middle of August. The car did not arrive in London till November, when he refused to accept it and demanded the return of his deposit, which defendants refused to return. The defence was that the defendants were unable to obtain the car from the manufactory at Wolverhampton, and therefore could not deliver. They counter-claimed for the balance of the money due for the car—£287—and also damages for alleged libel, which they laid at £1,000. The libel complained of was contained in a letter written by plaintiff to the editor of a trade newspaper, but was not, in fact, published. Plaintiff denied that the statement complained of was libellous. After the plaintiff had been heard in support of his case counsel opened the defendants' case, but did not call evidence, and the jury at once returned a verdict for the plaintiff on the claim and counter-claim.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Melbourne (Derby)	L. Henri (driver to Mr. F. Lawson)	25	20s., etc.
Birmingham	G. Iden, Coventry	30	£10, etc.
"	C. Deronsly, Coventry	30	£2, etc.
"	*H. Oswin, Coventry	34	10s., etc.
"	*G. R. Bedford, Gravelly Hill	—	£2, etc.
"	*E. S. Coldicutt, Stechford	—	£5.
St. Neots.....	H. A. Griffiths	—	40s., etc.
"	F. Hardy, Nottingham	—	£6.
"	E. Pulbrook, Tulse Hill	—	£6.
"	A. Butt, Guildford	—	40s.
Tottenham ..	E. Bennie	22	40s., etc.
Knaresboro'	H. Cooke, Leeds	—	£1, etc.
Reigate	*R. F. Smith, Croydon	—	£2, etc.
"	G. Duval, Eltham	25	50s.
Nottingham	*S. Phillips, Loughborough	—	—
Crickhowell...	W. Tomson, Cardiff	—	5s., etc.
Lancaster.....	E. J. Jackson, Lancaster	20	40s., etc.
Windsor	A. Smallman	23	50s., etc.
Maidenhead	A. Brooks	27	£5, etc.
"	Capt. A. Hill, Bracknell	37	£10, etc.
"	A. H. Terry, Woodstock	25	£5, etc.
"	W. Rogers (driver to Capt. Rhodes)	32	£6, etc.
"	W. Leon, Maidenhead	—	Adj.
Norman Cross	C. H. Gilbert, Lincoln	—	£5.
"	F. Hardy, Nottingham	—	£5.
Hetherzett, Norfolk	Lieut. N. C. Alfrey, Norwich	45	£1.
Garstang	D. Williams, Wigan	18	£3.
"	*Capt. P. Ormrod	26	£2.
"	R. Thompson, Mid Lothian	20	£5.
"	A. Edwards, Elgin	32	£7.
"	*H. Ainscough, Preston	17	£1.
"	T. Scarisbrick, Mayor of Southport	30	£7.
"	*T. Farrimond, Pemberton	17	£1.
"	*E. Partington, Pemberton	17	£1.
"	H. V. Seymour, Piccadilly, W.	28	£7.
"	C. W. Bell (driver to Mr. J. Grimshaw)	20	£5.
"	E. Surr, Bolton	17	£3.
"	F. Woodward, Bolton	21	£5.
Cambridge ..	*B. Lascelles, Trinity College, Cambridge	17	£2, etc.
"	T. Sowden, Cambridge	20	£2, etc.
"	F. Ellingham	30	£3.
Ockham	J. M. Gorham, Westminster	30	£2, etc.
Slough	A. A. Armstrong, Highgate	22	£7.
"	W. L. McBride	22	£7.
Oxford	Hon. T. Robartes, Christ Church, Oxford	—	£5, etc.
Frome	W. R. Crabb, Bristol	13	50s., etc.
"	*G. H. Fussell, Bristol	—	£5, etc.
"	J. C. Johnson, Nottingham	21	£5.
London (North)	J. Haxton (driver to Mr. Gus Elen)	—	£5.
Belfast	H. Honeysett, Belfast	13	40s., etc.
"	J. Pomeroy, Belfast	—	20s., etc.
Pembroke ..	*T. Carter	—	20s., etc.
Skipton	Miss D. E. Levitt, London	21	40s., etc.
Poole	G. H. Cox, Southsea	18	£3 3s.
Winchester...	H. Spinks (driver to Capt. Vanderbilt)	26	£3, etc.
Chertsey	*P. Gomme, Clapham	20	10s.
"	D. Haxton, London	24	20s.
Richmond ..	W. Webb, Gospel Oak	28	£3.
Chester.....	F. B. Summers, Flint	30	£5, etc.
Aylesbury ..	W. G. Lloyd, J.P.	—	£4, etc.
Dorking	C. Newman, Tickenham	15	Dismissed
"	E. Fryer, Champion Hill, S.W.	16	"
"	H. Odel, Fulham	—	"
"	J. E. Noel, Fulham	—	"
"	Capt. Koebel, Godstone	22	£5, etc.
"	P. Weston, Stockwell, S.W.	19	£5, etc.
"	B. Reed, London, W.	18	£3, etc.
Settle	Miss D. E. Levitt, London	16	£1.
"	A. Drummond	17	£1, etc.
"	F. Gillard, Bradford	20	£1, etc.

Where no alleged speed is given it is understood to be above the legal limit.
* Motor-Cycle Cases.

FURIOUS DRIVING CASES.

TWELVE motorists, convicted at Garstang (Lancaster) of furious driving, were mulcted in penalties amounting to £47a nd costs. The speed of the defendants, the police stated, varied from 17 to 32 miles per hour.

THERE was a heavy batch of summonses before the Guildford Court on Saturday last. Amongst them was Mr. E. Trier, who was defended by Mr. Staplee Firth. Four policemen were engaged on the trap, and the sergeant had resorted to the usual method of signalling and a stop watch. After a long conflict the evidence of the prosecution was so absolutely displaced that the Bench dismissed the case.

At Melbourne (Derbyshire) Petty Sessions, last week, Larcourts Henri, driver to Mr. Frank Lawson, was summoned for driving a motor-car at a greater speed than twelve miles per hour on Sunday, June 7th. It appeared that the vicar of Foremark (the Rev. Thomas Orrell) was taken ill by the wayside, and Mr. Lawson, who was passing in his motor-car, sent the defendant for the nearest doctor, who resided two miles away. When the doctor arrived Mr. Orrell was dead. Defendant said his instructions were to go as fast as he could, and as he had powerful brakes at hand he apprehended no danger. The Bench said they would deal with the matter leniently considering the circumstances, but, although a doctor was being fetched, the public had a right to be protected. They imposed a fine of 20s. and costs, in all £2 2s. 6d.

FREDERICK LANCHESTER was summoned at Birmingham for furiously driving a motor-car. Mr. J. E. Hill prosecuted on behalf of the police, and Mr. F. Smith defended. At the outset Mr. Smith said the summons could not have any application to the defendant, who appeared, as he was not the man who had committed the offence charged. Mr. Hill explained that Police-constable 66 A was on duty in Stephenson Place, and a gentleman came down in his motor-car towards New Street station gates at what was considered an excessive speed. The officer followed the gentleman and asked him for his name, and as the officer would prove, he gave the name of Frederick Lanchester. As a matter of fact the man in the car was not the man who now appeared in court, and whose name was Frederick, but one of his brothers named Frank. A summons was taken out against Frederick, and later was served on Mr. Frank Lanchester in Corporation Street, but he refused to accept it. It was subsequently taken to the works, and Frederick Lanchester wrote to the Chief Constable, sending it back, and suggesting a mistake had been made. The Chief Constable replied that as far as he knew no mistake had been made, and the matter went on. The Clerk (Mr. Barradale) asked if Mr. Frank Lanchester was in court, and Mr. Frederick Lanchester replied that his brother was away on business. Eventually, on the suggestion of the Clerk, the police decided to take out a fresh summons against Frank Lanchester.

CLUB NEWS.

EASTERN COUNTIES.

The second afternoon run of the Eastern Counties' Automobile Club took place at the Angel Hill, Bury St. Edmunds. In consequence, however, of the disagreeable weather, the members, who turned out and travelled as they pleased from different places, made straight for the yard of the adjoining Angel Hotel. The first to arrive were Mr. J. R. Egerton, of Ipswich, Mr. C. K. Moseley, and Mr. E. P. Ridley. Then Dr. Longhurst, of Melton, riding a "Rex" motor-bicycle, came upon the scene, and he was shortly afterwards followed by Mr. Edwin C. Sayer, Mr. O. T. Cook, Mr. A. Hackblock, and some motorists living in the locality. At Bury, Mr. Moseley (hon. secretary of the Club), received a wire from Mr. Robert Page, of Clacton, saying that he had got as far as Sudbury, but that as the weather was so bad he saw no pleasure in coming on. The combined run was from Bury to Diss; Mr. E. P. Ridley, the only member who seemed to know the road, acted as pilot, and the Norfolk town was reached about a quarter to six o'clock. Putting up at the King's Head Hotel, the party were there very well looked after. At Diss, the members of the Club were joined by Mr. W. T. Pretty.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be for the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

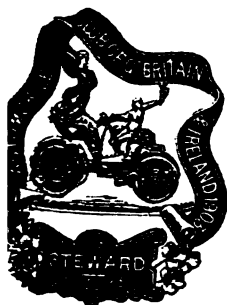
VOL. V.]

LONDON, SATURDAY, JULY 4, 1903.

[No. 226.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



BY the time these lines appear the great event of the year will have been won and our readers will know the possessor of the Gordon Bennett Cup for 1904. When we reached Ireland at end of last week we were at once reminded that the Emerald Isle is a watery one, and it seemed as though the waterfalls had commenced playing from the clouds. But by Sunday Ireland had changed her tearful mood and the sun came boldly forth, continuing to shine as though he recognised devoted worshippers in the ranks of the motorists. We are glad that motorists, as a rule, seem to have shown the utmost consideration for the people, and the only vehicular mishap that reached our ears in Dublin was one in which members of our staff figured unpleasantly. They took a trip on an outside car one evening, it collided with a kindred car and lost its footstool. Nobody was hurt, but the three passengers decided to keep to motor-cars in future.

Hotel Charges.

ALTHOUGH reason prevails in many Irish hotels, it must be confessed that some authentic cases of extortionate charges have reached our ears. One gentleman owning a house near the course although not in view of the road—asked twenty guineas for three bedrooms to be occupied the night before the race, and similar instances have been told elsewhere. And yet at two or three minor places we have found the charges most moderate and the attention all that could be desired. Verily the ideas of the Irish hotel proprietors are as changing as the clouds that ever seem to hover over the Wicklow hills, along which scores of motorists have gone these last few days to enjoy the scenery—so varied, so wild, and so delightful.

The Result of the Race.

SHOULD the result be declared on the day of the race, the hour will be late, and it will be a tribute to the careful work of the timekeepers and their auditors. Telegraphing just before we went to press our representative in Ireland gave the view of some of the French journalists that it might be Friday morning before the actual winner could be declared. This is regarded as all the more probable in view of the fact that extraordinary care in checking the times at various controls will be necessary.

Speed Trials in Lincolnshire.

AT an early hour on Friday, the 26th ult., Mr. D. M. Weigel, on a 80-h.p. Panhard, attempted to place the flying kilometre record to his credit. The event took place within easy distance of Lincoln, and several well-known Lincoln and Nottingham automobilists witnessed the three attempts made. The time for the first trial was 31 seconds, the second 28 seconds,

and the third 32 seconds. Mr. Weigel, on the second attempt, getting a good start, completed the distance in the marvellous time of 28 seconds. The timekeeper, was Mr. C. Perry, official timekeeper of the Nottingham Centre of the N.C.U., assisted by Mr. A. Aldam. The road was perfectly level and the distance accurately measured by Mr. W. Pare, surveyor to the West Bridgford Urban Council.

Proposed Legislation.

MR. SCOTT MONTAGU'S Bill to provide for the registration of motor vehicles has been printed and circulated. The Bill is intended to secure the numbering and registration of motor-cars, light locomotives, and such like vehicles, whose total moving weight does not exceed fourteen tons, or with a second vehicle attached does not exceed a total of twenty tons. A sum not exceeding 5s. for registration is to be paid to the county council in whose district the licence is granted, in addition to the ordinary duty, and the money is to be applied for the purpose of highway improvement. The fifth clause provides that the speed at which a light locomotive may be travelling shall not, irrespective of the other circumstances of the case, be a ground of taking proceedings against the owner or driver. Any person running a vehicle without it being registered is to be liable to punishment, and any person instituting proceedings against a wrong person is to be liable to pay the costs and expenses of the person so prosecuted. A right of appeal against conviction by local courts of summary jurisdiction is also given.

Overshooting the Mark.

REALLY the police are overshooting the mark, and it is time a limit was put to their questionable ways. All the way to Holyhead the roads were infested with constables behind hedges, trees, and anything that would cover their persons and schemes. On the approach of cars, they came into the roadway, asserted that great speed was being made, pointed to telegraph poles as the limits of measured distances, and threatened pains and penalties unless names and addresses were given. In fact, we have heard of so many promises of summonses being taken out, that only the more notable cases can be given in our list during the next few weeks.

Municipal Obligations.

THE suggestion recently made in these columns that local authorities should provide facilities for the refilling of the tanks of steam motor-vehicles has been anticipated by the Hartford (U.S.A.) City Council, which has equipped three troughs within its area for this purpose. Whilst the municipalities are doing much to make the roads fit for motor traffic, they must not overlook the fact that steam and electricity are playing a part in the development of the modern automobile. Hence the provision of water troughs for steam vehicles and charging stations for electric cars must be regarded as a part of the duty of every modern centre of local government

At Holyhead.

BUT the most flagrant case occurred at Holyhead, where a policeman visited the steamer questioning everyone having the appearance of a motorist as to the way he had come. At length he eyed one man with a lynx-like glance, and demanded his name and address. In due course the gentleman will be summoned for furiously driving a motor-car in a certain district—the name of which we refrain from giving for obvious reasons—and subjected to expense and inconvenience. The irony of the situation is disclosed when we remark that the victim of this new policy journeyed to Holyhead by train. Why not summon the engine driver, and harass the railway company? Surely here is a theme for Mr. W. S. Gilbert?

**The County
Councils
Association.**
FIVE

At a meeting of the Executive Council of the County Councils Association last week, Mr. Milnes Gaskell (chairman of the West Riding County Council) submitted a resolution urging the Government to immediately introduce a bill to deal with the question of motor-car traffic and ensure the protection of the lives of the public. As long ago as January of last year, he said, the President of the Local Government Board

the corps has now been approved by the War Office. It is on the lines of the service dress, with dark green cuffs and collar, the cap being of the present staff pattern.

**A Useful
Warning.**

THE Manchester Automobile Club has just issued the following notice to its members:—The Committee are specially anxious, in view of the approaching motor-car legislation, and of the present state of public opinion, that members should drive with the greatest possible care and consideration. The committee appeal to you to see that the speed of your car is reduced to a really low limit in meeting and overtaking traffic, in passing through populous places or villages, in approaching cross roads, and in rounding corners. The committee also remind you that the dust question is one of the main objections of the public to motor-cars. They, therefore, suggest that on dusty days, for this reason alone, speed should be lowered as much as possible in meeting or overtaking traffic, and in populous places. The committee believe that if self-restraint of this sort is practised by members, a better understanding will be arrived at between the public, the police, and the motor-car users, and that it will ultimately lead to rigid police supervision only being practised in dangerous places. On the other hand, if consideration is not



Photo by)

The Theatrical Ladies' "Motor Meet" at Weybridge.

[The Biograph Co

had favourably received a deputation from the association in reference to the matter, and had led them to believe that legislation would shortly be introduced, but nothing had been done. Lord Herries (North Riding) seconded the motion. Sir H. Fairfax-Lucy (Warwickshire) said the longer the matter was postponed the stronger would the legislation be when it was brought in, and he therefore advised that the Government should not be pressed too strenuously. The motion was carried, and copies were forwarded to the President of the Local Government Board, the Prime Minister, and the Earl of Camperdown.

**The Motor
Volunteer Corps.**

ENROLMENT in this corps, which has been doing good work lately, is proceeding very satisfactorily. The following members have been doing duty:—Mr. H. R. Mosenthal drove the officer commanding Royal Engineers, IV. Army Corps, to Hounslow and back on June 17th; Mr. F. A. Rodewald drove the officers commanding Royal Engineers, Home District, to Cooper's Hill College and back, for inspection of the battalion there, on June 17th; Mr. Oliver Stanton drove Lord Grenfell, the General Officer commanding IV. Army Corps, to Cowshot, near Brookwood, on June 25th, for manœuvres in connection with the militia brigade which is encamped there. The services of members of the Corps will be used to some extent in connection with the reception of the President of the French Republic on his approaching visit to the King. The uniform of

used, especially at the present time, legislation, that will spoil the pastime and injure the trade, is sure to result. If you have a paid driver the committee trust you will thoroughly impress on him the necessity for caution.

**Furniture Removing
and Motor Traction.**

AT the annual meeting of the National Yorkshire Removers' and Warehousemen's Association, held last week, the question of motor traction was mooted in the report of the hon. secretary in the following terms:—"It appears to me in a general way to be conceded that at no very distant date mechanical traction, derived from the application of electrical energy, must take the place of the present system of haulage. The motor steam van could be specially adapted to convey furniture from house to house over the country; which would necessarily dispense with railway transshipment and terminal charges of the companies."

**Motor-Cars in
Hyde Park.**

IN the House of Commons on Monday, Mr. Cathcart Wason asked the Home Secretary whether, in view of the speed at which motor-cars are driven through Hyde Park, he would authorise the police to prevent them entering the park until such time as the law is competent to restrain them. Mr. Victor Cavendish replied, drawing attention to the statement made in

Parliament last week, that the Government intend to proceed with their Bill for the regulation of motor traffic, and hope to introduce it this week. The First Commissioner is also considering, in concert with the police authorities, what steps can best be taken to regulate the speed of vehicles in Hyde Park, Constitution Hill, and St. James's Park.

In Rural Districts.

THERE seems to be another outbreak of motor-mania on the part of district and rural councils, and several resolutions have lately been adopted by these authorities urging limitations, restrictions, and hindrances to the development of the automobile. Away in Yorkshire there seems to be quite a plethora of interest in the subject, and hardly a local assembly of a dozen members has not adopted some motion of a retrograde character. The Settle Board of Guardians and the Bedale Rural Council have been particularly prominent in the matter. It is, however, gratifying to know that all Yorkshire bodies are not

every motorist there to be bound by the common law, a mark of identification to be placed on cars, and motorists, not to be regarded as endangering the public when no members of the public are present. The latter reference to the case of *Sutton v. Mayhew* will be appreciated by all motorists who will be glad when the present tension is removed and their rights as users of the road are legally recognised.

Water Ways and Motor Cars.

STRANGE though it may appear at first sight, there is little doubt that the coming of the motor-car may lead in some places to a resuscitation of the canal. Hitherto the policy of the railway companies has been to secure the canals for themselves, or to bring them completely within their influence. But the automobile offers a ready means for the transport of goods and merchandise that in conjunction with efficient waterways would restore prosperity to many a country district.



Barbaroux on the 60-h.p. Benz Parsifal Car on which he won the Huy Kilometre Race and hill-climbing trial and which he will drive in the Phoenix Park Speed Trials.

so inclined to revert to the usages of past ages, and the Doncaster Rural Council has been discussing the desirability of providing its highway surveyor with a motor-cycle for use in connection with his duties. The matter has been referred to the Highways Committee for further report, but that the idea should have been discussed is significant of much.

Motors and Men.

MR. NORMAN, M.P., is a persistent advocate of the motor-car, and in the "World's Work" continues to demonstrate his interest in the automobile. Like most Parliamentarians he has his own views as to the regulations to which motorists should be willing to submit, and prints a quintette of suggestions that may be useful as indicating the lines upon which the ultimate settlement of the problem will be based. Every professional driver will have to take out a license, the speed limit in towns to be ten miles an hour, no limit to be fixed for country districts,

Week-end House.

COMPLAINT continues to be heard in many rural districts as to the decay of the country. The saddler and harness maker who was once so familiar a feature, in fact, an essential factor in country life. The coming of the motor-car has re-arranged the economy of many of our villages, and unless the saddler is prepared to turn his attention to mechanical matters, he will find himself quite out in the cold ere many years have passed. It is satisfactory to find that other industries, such as coach building and hotel keeping, are rather more active to meet the newer demands of the age than are the class to whom we have just referred. On practically every main road rural inns and hostelries, whose glories seem to have departed, are rejoicing in the splendour of new paint and furniture. Hotel proprietors recognise that, although the motor-car may prove inimical to the interests of certain industries, it will be to their advantage, as well as to the welfare of the country generally. In connec-

tion with this, it is notable that the demand for "week-end houses" in the Thames Valley, and in the home counties generally, is on the increase. Estate and house agents inform us that many people who at one time would go far afield for their week-end recreation, are now taking smaller houses within radius of, say, 30 to 40 miles from town, making these a rendezvous for their week-end parties. In almost every instance where there is any real demand for this class of property, the presence of a stable easily convertible into a motor-house is regarded as essential. Here, again, the motor will revive the prosperity of many a pleasant village which promised to pass away altogether. We refer to these considerations because there has been a tendency to regard the motor-car as wholly destructive of some of the districts connected with ordinary country life; but, as a matter of fact, no destruction is going on. It is only the shifting of progress from one point to another, and, in the end, the people generally would be the gainers.

The Dog Census.

ACCORDING to the Board of Agriculture there are 1,871,619 dogs in the country, or about one canine to every score of human beings. These figures relate to those officially known; the numbers that have escaped the vigilance of the law, or whose owners prefer that they should not be enumerated, would swell the number into even greater proportions. It is, however, sufficiently annoying to motorists to realise that here are nearly two million chances of danger, and that in every dog may lurk one of the factors that lead to fatality. The education of dogs must go on more rapidly than it has done, or there will be many dreadful harrowing wails along the countryside, and many a collar without a dog to adorn. The responsibility must rest with dog-owners to keep their animals within proper bounds.

A Hint to Beginners.

IF those who are taking up motoring for the first time this summer will bear in mind that it takes a certain amount of experience to train the mind to act quickly enough in an emergency, much trouble will be avoided. A beginner may know exactly what to do and how to do it, and if he had time would be able to manage his machine admirably, but when a sudden emergency arises and the car is travelling rapidly, the driver must act in the fraction of a second if an accident is to be avoided. With experience one will be able to do so, and either steer through a tight place or stop the vehicle in a few yards; but it is only with experience that this facility comes, and consequently beginners should drive very slowly and cautiously at first if they wish to avoid the risk of a disaster.

Discretion Wanted.

AFTER a period of quiet behaviour that promised to lull motorists into the suspicion that the police had resumed their ordinary avocations, the campaign against speedy road travellers seems to have been revived. We must deplore the action of the minority of motorists who rush headlong through villages and hamlets playing "ducks and drakes" with all the poultry that may be about; but we must remind the police that the magistrates in many places have publicly declared against the present speed limit, and that in some counties the local authorities have no favour for zeal and officiousness on the part of constables in this matter. There must be a large discretionary power given to both controllers and users of the road. On a wide, clear stretch, with nothing but the winds to disturb the surface of the road, drivers frequently respond to a natural desire to put the best effort forward. Such a course in such circumstances involves no risks and raises no hazards. Why should the man who attempts it be caught by telephone or victimised by stop-watches? We doubt if even the renowned Sergeant Jarrett could give a satisfactory answer.

Questions in Scotland.

THE annual meeting of the Association of County Councils in Scotland was held at Edinburgh, with Mr. George Younger, the president, occupying the chair. Mr. Andrew Hutcheson raised the question of the speed limit for motor-cars, and asked the Association to give its imprimatur to the finding of the Scottish agricultural bodies that there ought to be a speed limit. The agricultural community, he contended, had first claim on the county roads, and he moved that the association petition in favour of a twelve miles' limit. Mr. Graham Hutcheson contended that the speed of motor-cars when proceeding through villages should be restricted. The chairman reminded the association that the matter was at present in the hands of the Scottish Secretary, and the Association's position was made clear by the recent memorial to the Secretary for Scotland on the subject. The matter was then allowed to drop.

Off Side.

MR. C. D. ROSE, M.P., was driving his motor-car recently, near Twyford, when in avoiding a cart coming up on the wrong side of the road, he was overturned. The car was smashed but Mr. Rose escaped with nothing worse than a severe shaking. That and the damage to the car were bad enough, especially as the mischief was done through no fault of the sufferer. The way in which the drivers of ordinary vehicles continue to keep on the wrong side of the road is not only perplexing but dangerous. A few summonses issued in connection with such waywardness in one or two country districts would teach a salutary lesson.

Fines of £500.

MR. J. L. WHARTON is M.P. for the Ripon division of Yorkshire, and has been enlightening his constituents with regard to his views on automobiles. His friend Mr. Walter Long, he said, proposed to introduce a bill for the regulation of motor-cars. Mr. Wharton thought it was obvious that some restriction on the vagaries of these machines was necessary. "We all of us have the right," he said, "to use these roads. There are some people who are disposed to use these new machines in such a way as to make them disliked by the general body of the British public." His opinion was that the best way of dealing with the problem would be in the first place to restrict the horse-power; that was to say, to put the limit at ten horse-power, if it was found this was an ample power for providing a safe and comfortable motor-car, but which would not enable it to travel at the enormous rate of speed which he and some of his hearers were terribly conscious some cars were driven. He lived on the Great North Road at Bramham, and sometimes drove to his birth-place at Aberford, and he had often seen motor-cars descending into the villages when children were about at a speed that made his blood boil with apprehension. Then, too, repeated offenders ought to be subjected to accumulative penalties. "If a man is fined £5 the first time," said Mr. Wharton, "let it be £50 if he comes up the next week, and if in the third week he again offended I would fine him £500. That is the best way to stop it; you want to inflict upon these men something they will feel. Why, to fine some of them a £10 note would be very much like fining me a fourpenny bit." Motorists need not look for much consideration from this M.P.

THE Felixstowe Advancement Association has issued a new guide to the town and district by Mr. Lemmon Lingwood. This will be appreciated by motorists, for it recognises those who journey by road as well as those who linger on the beach. A few years ago the roads in the locality were bad; they have lately been improved and a good standard of maintenance has been attained. From London, Felixstowe is distant about 81 miles, the route being through Stratford, Brentwood, Chelmsford, Colchester and Ipswich, and it is quite as interesting as any other of the holiday resorts on the east coast below Grimsby.

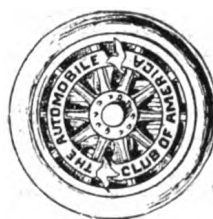
The Gordon Bennett Cup Race.



GREAT BRITAIN.



FRANCE.



AMERICA.



GERMANY.

DOINGS IN DUBLIN.

THE present year is likely to be memorable in the annals of Ireland. Politically there would appear to be a truce to the violent feeling that has characterised the country in the past; socially, the visit of the King will be one of conciliation to the populace and of profit to the traders; while industrially the advent of the automobile promises to develop a new trade, while assisting to revive the fallen fortunes of the country districts. And how they have fallen is well indicated at Rathcoole, a place through which hundreds of motor-cars have sped during June to provide the aged inhabitants with reflections as to the glories of the old coaching days when the roadside inns were prosperous.

All Ireland is interested in the International motor-car race. It is the topic of the man in the street, who sees in every begoggled driver of a motor-car some possible hero of Thursday's great event. Portraits of the competitors appear in the shop windows, and, for the moment, are more freely in demand than those of even the most popular actresses. Even the hosiers and clothiers have taken advantage of the occasion, and brought out new ties in green, red, white, and blue poplins, so that the partisans of the teams may sport their favourite colours, and already the street gamins are donning bits of green—a dual tribute to their devotion to the English representatives and to the national colour.

In the theatres references to motor-cars are cheered to the echo; the characters appear in motor-caps, heedless of their appropriateness to the particular play, and even the jarveys eagerly scan the "speeshul edition" to note the latest arrangements as to reaching the course. The Horse Fair, the Punchestown Races, the great review in Phoenix Park, the oratory of some national Parliamentarian, all touch Ireland's feelings to the deep; but this motor race has stirred the country as no event of recent times, and there is no doubt as to the genuine delight with which the contest is being regarded.

Motorists on foot are regarded with keen curiosity by other pedestrians, and the Shelbourne Hotel, the headquarters of the A.C.G.B.I., has brought hundreds of people into St. Stephen's Green to see the setting out of distinguished motorists. They, on their part, have reciprocated the interest shown locally, and have patronised the jaunting cars with a delightful freedom from prejudice which we could wish all owners of horses would assume to the automobile. And in some cases their confidence has been curiously misplaced. A couple of motorists the other day seated themselves back to back on an outside car, and had scarcely gone two hundred yards into Grafton Street when a rival car coming in the other direction bashed into the vehicle, robbing it of its footboard, and leaving the rider on that side with his feet dangling towards the roadway. A crowd gathered as quickly as would have been the case in London, and the motorist was able to draw a favourable comparison with regard to the automobile. Such an incident would have been impossible with a motor-car, and he says he will never be driven by a Dublin jarvey again.

At all the leading hotels petrol talk has been the order of the day—or rather the conversation of the evening. At one place an owner was in difficulty because his car had disappeared and also the small lad he had left in charge. It re-appeared a few hours later, the enterprising youth having had a spin round Donnybrook on his own account. The advantage of the automobile to the poultry rearers of the country was much discussed, and the prowess of, at least, two of the drivers in the big race has been heralded as pioneers in that direction. One owner of a car ran over a hen, whereupon an old lady greeted him: "Shure an yer honour ye've run over me hen—a good honest hen—a whole family of chickens."

"And what is the damage?" queried the motorist.

"I do not want to be rude, but shure, sorr, the hen is dead."

"Yes, but what shall I pay you for compensation?" The word compensation was sufficiently familiar to the good old soul, who thereupon declared she would "lave it to yer honour."

He threw half-a-crown to the old woman, who reminded him of the chickens, wanted double that amount, and finally compromised the matter on receiving 4s.

A day or two after the motorist was on the same road, and saw the same fowl limping along but still living. He stopped and asked the lad who was with the woman on his previous adventure how were his mother's chickens.

"Ah, shure," said he, "an' it's me mother that has no fowls; they belong to Mrs. Murphy." And Mrs. Murphy; it was discovered, lived on the opposite side of the road.

Such stories as to the ingenuity of some of the people have been current, and have passed many a pleasant hour. But occasionally sterner rumours have been floating from hotel to hotel, and on Friday the news spread as to the probability of one of the selected British champions not driving. Stocks was generally known to have a severe cold; Jarrott, however, was fit and well, and so far as the third, or rather the first, man was concerned, the appearance of Edge as he drove into Messrs. Hutton's garage on Saturday morning was quite dispellant of any such report so far as he was concerned. Estimates of the probable speeds to be attained in the race, varying from forty to sixty miles an hour, have formed quite an interesting study in motor circles, but as the race will have been run ere these lines will appear in print, we refrain.

The shop-windows have been transmogrified to a great extent, and the tailors that were formerly concerned with summer raiment now present almost an Arctic austerity with their displays of furs, leather clothing, and other costumes to combat keen and dampening weather. Names like Dunhill, Lovegrove, Allweathers, etc., familiarise the local shops to motorists, and nearly all the leading London motorists' tailors have appointed active agents in Dublin, who are making bold displays. The little knots of people that continually peer into the shop windows are a good reflex of the interest taken by the populace in the event. Opticians show goggles, fancy shops toy motor-cars, and a jeweller's near the Metropole Hotel draws the public by an exhibition of Gordon

Bennett race chronographs made by Messrs. S. Smith and Son. Altogether the shop-keepers have risen to the occasion, and even along the quay those who ordinarily deal with seafaring men have found land yachtsmen equally good patrons for sou'-westers and the like. In fact, the uncertainty of the weather has been a boon to all classes of traders, motorists having to be ready prepared for any emergency.

As we write the City is being stirred by a police notice posted on the garage of the Irish Automobile Club on Monday night, and since then advertised and circulated throughout the whole place. It is signed by Lt.-Colonel John Ross, the Chief Commissioner of Police, and warns drivers of "motor and other vehicles" against infringing the police regulations inside the area of his jurisdiction. Whether this is really warranted so far as motorists are concerned is a moot point, but the presence of so many fast cars in the City has naturally led the authorities to feel their position, and they are taking every precaution to prevent accidents. It speaks volumes for the skill and consideration of motor-car drivers that no unpleasant incidents in which

Mr. Ballin Hinde, and other well-known English motorists. The Irish Club is to be congratulated on its enterprise in thus assisting its British guests, for the provision of suitable accommodation for cars is one of the problems of the tour. Livery stables are being extensively utilised, and the charges have not been allowed to err on the score of modesty.

At the Dolphin Hotel, Dublin, the competitors in the race were entertained at luncheon on Saturday by the Corinthian Club, Sir Charles Cameron, C.B., being in the chair, Messrs. Edge, Jarrott, Mooers, and Owen representing the racers. The French and German teams were unable to be present, the latter having only just arrived, and two of the former being still on the water. An original poem of welcome to the visitors was read by Mr. W. A. Craig, in which they were apostrophised as the "Chariot Racers of the Motor Age." The speeches were brief and bright. Mr. Edge took a serious view of the matter, insisting upon the commercial and industrial aspect. Mr. C. Jarrott declared his interest in the sporting side of the event; Mr. Percy Owen expressed the pleasure it would give the Americans to

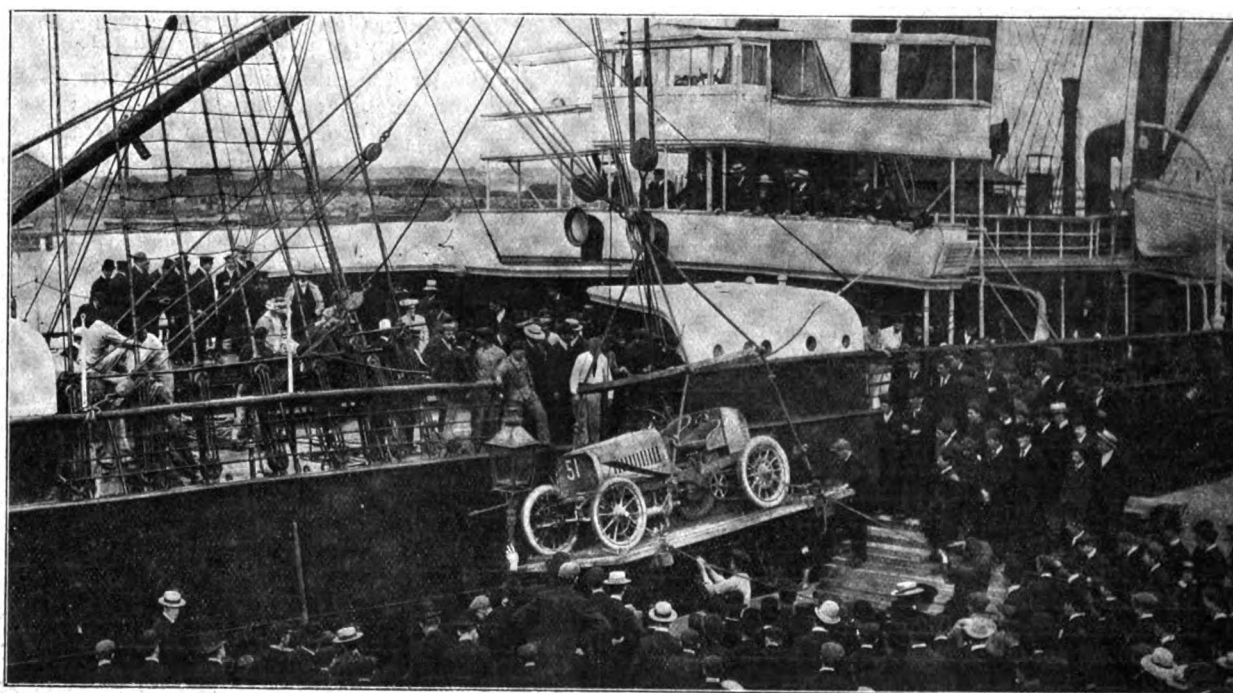


Photo by

Unloading the French Cars from the s.s. "Ferdinand de Lesseps" at Dublin.

[Lafayette, Dublin.

they are prominent have yet occurred, to mar the pleasure of the visit.

Hutton's garage, where accommodation has been provided for two hundred cars, has been a busy centre, and the language used has been equally as varied as the cars there staged. Special lock-up compartments have been reserved for Napiers, Mercedes, Daimlers, etc., while the other types have been placed in various parts of the garage the area of which covers nearly two acres. In the yard cars have been washed and repairs made with an energy inspired by the versatile Dr. Colohan, whose busy ways have proved infectious. The garage has been free and full; while the repairs made and the petrol supplied must have yielded a satisfactory turnover. Away at the other end of the City is the Earlsfoot Skating Rink, where eighty cars have been housed, and a large spacious yard provided for the shower-baths that have been necessary for the good appearance of the cars. Rooms for mechanics and owners have been provided, and among the gentlemen who have had their cars housed at this garage have been the Duke of Manchester, Mr. C. Gray Dinsmore (the representative of the United States on the International Commission), Professor Hele Shaw, Mr. J. Hargraves, Mr. G. Higginbotham,

return with the cup, and, in anticipation, promised all European motorists a hearty welcome to the States next year, a sentiment re-echoed by Mr. Mooers, who promised to do his best to win. Mr. J. W. Orde, as secretary of the A.C.G.B.I., took a wisely impartial view.

[BY TELEGRAPH.]

Wednesday.

On Monday fifty-six cars were landed at North Wall, Dublin, by the London and North-Western Railway Company, and another forty came by the morning boat on Tuesday. Last week sixty others were shipped, and it was anticipated by the officials that at least 200 would be received on Wednesday morning. These shipments are by one company. Only three hours and a quarter will be lost by the racers in the controls, and it is calculated that the race will occupy till between five and six o'clock. A Gordon Bennett Sweepstake, limited to 100 members, with one sovereign each, has been a topic of conversation in Dublin. There is one lady road steward, Miss Rowley, of Kells. Rigolly will drive a 100-h.p. Gobron-Brillie car at Phoenix Park on Saturday.

SHERBOURN HOTEL, DUBLIN, Monday.

LEAVING London in the early hours of the morning, we were enabled to escape the traffic and make a comfortable run to Stonebridge, just over a hundred miles, where a short stoppage was made. At the hotel we heard the landlord had been "rung up" at 4.30 by a party of forty-four motorists who desired and were served with breakfast. Continuing through uninteresting and poor country, the pangs of hunger reminded us breakfast had not been partaken of, so at the first likely-looking inn a halt was made.

to the travellers. As might be expected, a satisfactory meal was enjoyed, and much time was afterwards spent rambling over the queer old place, with its roughly-hewn beams almost touching one's head. Many famous travellers in the old coaching days stayed here, and amongst them Dean Swift, who must apparently have fallen foul of the hostess, for he scratched on a window pane these lines, "Thou fool to hang four crosses at thy door. Why not hang up thy wife; she's crosser than all four?" Lovely roads landed us in Shrewsbury, where a short but interesting time



Rene de Knyff.



Henri Farman.



Photo by]

Gabriel on his Mors Car, on Arrival at Dublin.

[Lafayette, Dublin.

THE FRENCH TEAM.

The inn proved to be the Four Crosses, a most charming place, with the date carved in its old black and white front, that also bore a Latin inscription, which translated read, "If we but knew our end in death, what bitter tears would flow; a day may stop our fleeting breath, yet laughing on we go." The entrance is a most quaint one, and the spotless appearance of the floor and tables in the cosy corner, the hanging green hams, and the sight of the kitchen—as large as a good-sized barn—were most welcome

was spent in what we should imagine to be one of the quaintest and most charming of cities in Great Britain. The views of the Severn—by the side of which we had driven for miles—were of the loveliest. An all too short but magnificent road took us to Llangollen, where a halt was made for luncheon. The whole ground being new to the writer, much time was taken in sight-seeing, and it was getting late when a further start was made. At Bettws-y-Coed, where the rain commenced, another halt was

made, the scenery passed being too well known for description. Through Ogwen, by the lake, and past the famous quarries of Bethesda, to Bangor it rained all the way, but that fact could not rob the scenery of its grandeur, the Dee of its bubbling beauty, or the roads of their excellence. A halt was here made for the night,

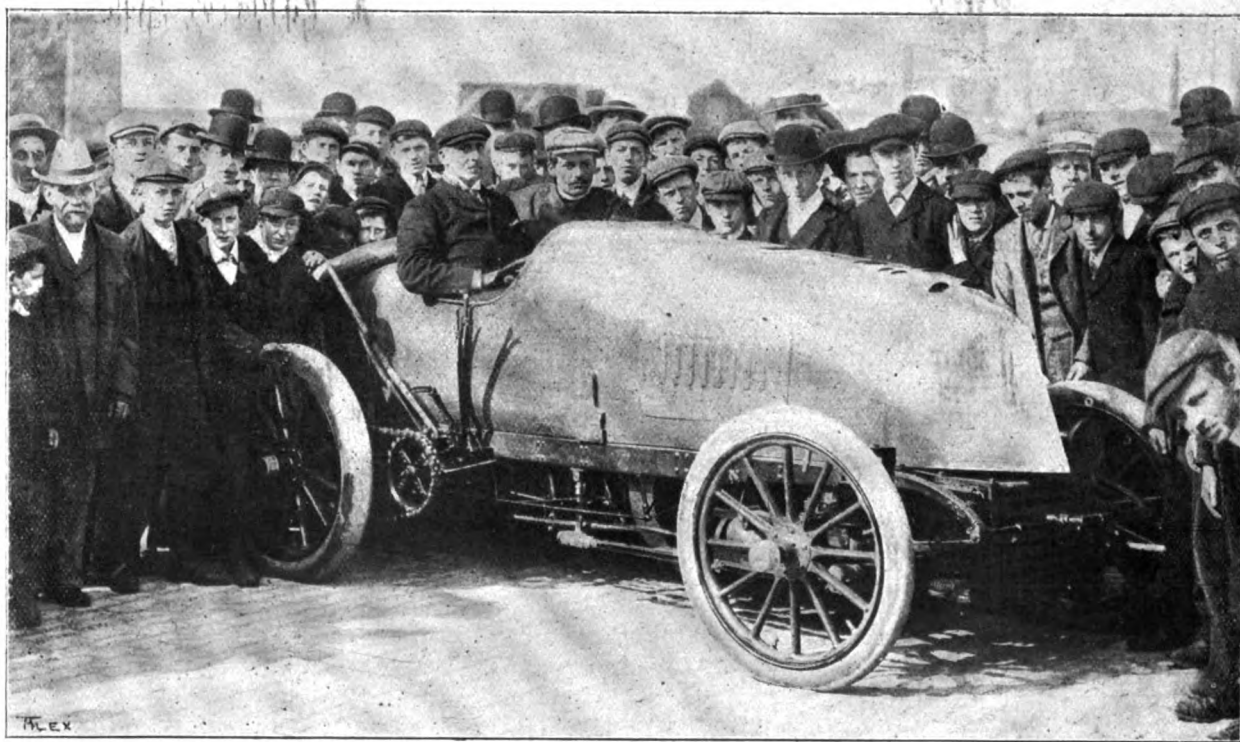
has to be crossed, and there are several lovely views, while Snowden keeps company with the tourist for some distance. The car went by cargo boat and reached North Wall by eleven, the writer travelling by one of the first-class North-Western boats. The rain commenced before boarding the vessel and continued



[Photo by]

M. Jenatzy, one of the German Team, on his 60-h.p. Mercedes.

[Lafayette, Dublin.]



[Photo by]

Salleron, one of the Reserve French Team, on his Mors car, on arrival at Dublin.

[Lawrence, Dublin.]

and the Castle Hotel is recommended. We made a mistake and did not stay there. At Bangor the scenery is superb, and, in combination with the Straits, the fleeting hours swiftly passed. To Holyhead needs no description, except that the Menai Bridge

without intermission till some time Sunday morning, having started Wednesday afternoon. This was unfortunate, for we poor Londoners had already suffered enough from the visitations of Jupiter Pluvius.

First impressions of a city under such circumstances could not be of the best, and when next morning it was found to be still raining, an enquiry of the hall porter brought forth the remark that just about this time the weather usually broke up, and that rain might be expected for the next six weeks! Considering that for half this time rooms have been booked, the prospect did not appeal to us. However, we were there to go over the course, and this, to a certain extent, we did. As far as Kilcullen, the roads were exceedingly greasy and travelling uncomfortable, but when the course was reached, the roads had been washed of all superfluous top. By Ballyshannon the steam rollers were at work, the roads were being filled with stones as big as granite sets, the carpenters were engaged strengthening the grand stand, while the car was travelling carefully with a view to avoiding the ugly corners. The course is not an ideal one, and we trust the race will not be marred by any accidents. Other days were spent in travelling to the various outside places. Wicklow was thoroughly explored. The writer has no hesitation in stating the scenery is magnificent, the roads not at all bad, and the apparent prosperity of many of the districts would compare favourably with any portion of England. The "jarveys," with their outside cars and their sprinting little ponies, were a never-ending source of delight, and the number of them, and the frequency with which they

but at present we would hazard a guess that the roads in the three counties covered by the course have more motor-cars on them than any other acreage in the world.

ARRIVAL OF THE RACERS.

The English team, whose names "are familiar on our tongues as household words," have long been acquainted with the curves and corners of the course. From Castle Rheban, near Athy, they have daily tripped to Ballyshannon, and other points of interest, studying the corners to a nicety, and reducing the art of driving to an exact science. Probably Mr. S. F. Edge could tell his rivals the exact angle at which to take all the corners, but he is of a somewhat retiring nature when questions of racing interest are concerned, and somewhat given to undue modesty of statement when questioned as to his knowledge. Even of his own car, "a neat little thing of say 40-h.p.," he nonchalantly declared to us when entering Hutton's garage with a new racer of reputed 110-h.p., last Saturday.

The American champions, or at least two of them, are almost equally well acquainted with the route, and their attitude of easy freedom with the natives has won the hearts of many who were naturally predisposed to favour the States. For there is scarcely a family in counties Kildare, Carlow, and Queen's which has not some of its members in America.



Photo by]

Messrs. Winton and Owen on Winton Touring Cars at Athy.

[Lawrence, Dublin.

were used, notwithstanding the fine electric trams, was astonishing, no doubt owing to the fact of the fares being sixpence to anywhere inside the City. The shops have been disappointing, but to catch the passing breeze nearly every shop front has motor effects displayed. Sackville Street did not strike us as anything special, while Phoenix Park and St. Stephen's Green were all that the imagination could desire.

The hotel lounge surely must be the most restless place in the world, and motorists ditto. The latter never sit still a moment; there is a sound of a horn and up jumps everyone. There are three Napiers at the door; there are two 60-h.p. Mercedes, there are a dozen other cars making the deadliest noises, Mr. Foxhall Keene rushing in and out like a dog at a fair; other men are just the same; off on their cars, absent for a minute and then back again, and so on.

At night the lounge, after dinner, is more restful. There are sitting Mr. Wallace, in company with Chevalier De Knyff, Baron de Vogne, Count Graf von Sierstorff, a Spanish count, etc., at one table; at other tables cosmopolitan groups from all parts of the world. The whole scene is different from the morning. During to-day there has been more peace. The Frenchmen on their racing cars, making folks think there was a battle raging and artillery firing going on, being the first away, and thereafter by the dozen cars left for the course. What this latter will be like by Wednesday night we do not know,

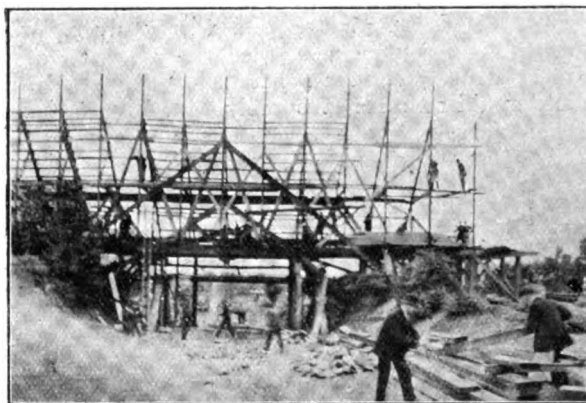
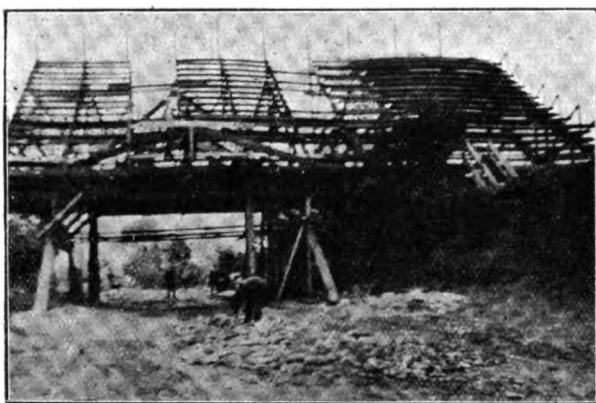
But greatest curiosity has prevailed with the French and German competitors who, although laggards in getting on to the course, are not likely to loiter on the day of the race. The German cars came along on Saturday, and a strange sight they presented as they drew up Summerhill after leaving the docks on Saturday morning. Mr. Foxhall Keene drove one, and with Baron de Cater's car they were a most remarkable procession. The cars were loaded with mechanics and men from the Cannstatt works, about as unkempt and unwashed a collection of men as could be imagined. One man, sitting on the rear of one of the cars, had cuts about his face and blood stains had clotted about his moustache, as though he had been fighting wild beasts, instead of merely rushing by policemen from Southampton to Holyhead in a way that must have caused some P.C.'s to think of the thundering and lightning of the infernal regions. The cars had been driven by road from Cannstatt to Havre, and one had toppled over, throwing its occupants into various neighbouring ditches and other receptacles for fallen motorists. But they had righted the car and speeded along, more anxious to get to Dublin than to have regard for personal appearance.

As we left the garage Jenatzky drew along, his fair face indicating a sanguine disposition, that feared nothing from the late hour he was going over the course. Once inside the garage, the three cars were quickly stabled and placed under lock and key. The men had brought their beds; these were quickly erected

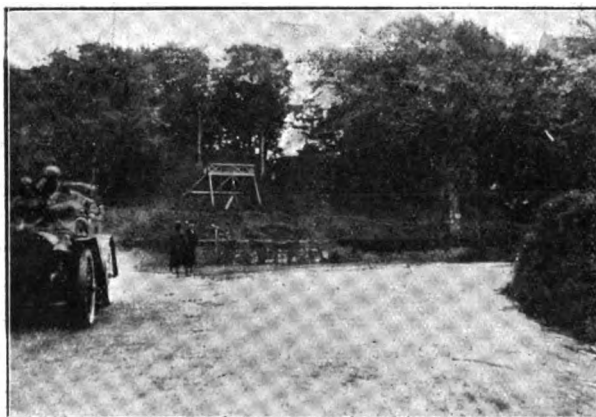
by the sides of the cars, and each night the vehicles have been quiescent in the garage, their mechanics have proved as faithful guards as the sheep dog to his Highland shepherd. To those familiar with the scene that usually takes place in English competitions, the anxiety of the team to prevent any mishaps was striking—and wise, perhaps.

The French came last, or at least the cars, for M. Gabriel landed almost simultaneously with ourselves last week, and went direct to the Grosvenor Hotel, where he rested awhile before going to Fontstown, where he made his headquarters at the house of Mr. Biggs. He was met by many representative Irish motorists, and his prowess in the Paris-Madrid race has made him a popular hero in Ireland, where his fame had preceded him. The man knows no fear. The corners which have alarmed some amateur writers and caused even experienced drivers to shudder, made Gabriel smile, and after a complete

Lesseps" was taken in tow by the "Flying Witch." Shortly after noon she entered the Alexandra Basin, and was met by Captain Graves, the harbour master of Dublin, who superintended the berthing of the vessel. A great crowd quickly assembled, whose cheers were both hearty and spontaneous. Some comment was made at the non-appearance of many English motorists, but it must be urged in extenuation of the circumstance that considerable uncertainty prevailed as to the exact hour the vessel would arrive. Mr. Harvey Du Cros welcomed the visitors, who, as already mentioned, included Chevalier Rene de Knyff and M. Henri Farman, as well as M. N. Heath and Berteaux, who will act as auxiliary drivers should either of the former not be able to drive. Other well-known motorists coming by the same vessel were Comte Szapary, M. Holtzer (whose yacht, the "Tritonia," has been some days at the North Wall), Duc de Arlon, Baron de Crawhez, Baron Thenard, Messrs. Garier, Jun.,



Front and Back Views of the A.C.G.B.I. Stand across the Course at Ballyshannon.



The Moat of Ardsull from the Athy Side.

The Corner at Kilcullen.

SNAPSHOTS ON THE COURSE, TAKEN IN THE RAIN.

circuit of the course, he is reputed to have described it as easy as a railway track. He regards a couple of complete trips quite sufficient to become familiar with the awkward twists, and would probably set down the extra trips he has had as merely intended to "pass away the time." The best tribute to his nerve comes from the photographer, who tells us that Gabriel faced the camera for four minutes with never a tremour and with a hand as steady as a piece of mechanism. Never before has such a man faced the camera of the leading Dublin studio.

Chevalier Rene de Knyff and M. Henri Farman arrived on Sunday by the "Ferdinand de Lesseps," the boat bringing seventy first-class and 150 other passengers, its cargo consisting of thirty-one motor-cars, including three Panhard racers. It had been expected she would have been put into Kingstown Harbour, but at eleven o'clock a Dublin pilot went on board, and the "Ferdinand de

Durenne, Abel Deblanc, Faure Baulien, Leys, Prevost, Adrien Panhard, P. Panhard, Pasquier, A. Sarozin, Lemoine, Cosard Barie, Labourette, Michelin, Barbotte, Ménard-Dorian, Giffard, Hermann, and a dozen or more journalists.

A De Dion voiturette having been taken from the ship, the Panhard racers were next unloaded, and then the Mors cars were landed. At once M.M. Gabriel and Salleron took the latter in hand, while the Panhards were temporarily taken to a wharf shed before being got away to Hamilton's Hotel, at Athy, the Panhard headquarters on the course. On Monday, the five cars used by the employees of Panhard were driven from the docks to Athy, and their appearance attracted general attention in Dublin. Loaded with cans of petrol, carefully boxed and sealed, as well as with spare tyres and parts, and with "crews" of begoggled men all intent on getting to business,

They demonstrated to the public the pains that are being taken by the competitors to secure the victory. Later in the day, the lorry belonging to the Mors Company was despatched to Fontstown laden with petrol, the cases of which bore marks of earlier journeys in connection with the Paris-Madrid race. These firms leave nothing to chance, and, like the Germans, have left no precaution to secure everything being in perfect order on the great day.

FROM DUBLIN TO THE COURSE.

There are several ways of getting to the Course, but one has been chiefly used by the competitors in getting from Dublin. It has also proved the most popular with visiting motorists—not because of its scenic beauty or delightful surface, but for the simple and satisfactory reason that it is the most convenient. The Curragh may be reached *via* Athgarvan; Kilcullen by way of the Beggar's End; Castledermot by leaving Dublin then Terenure, and ascending the Pass of Mount Seskin, which rises about 1,000 feet; Kildare by

road is variously interesting, a stone wall on one side being faced by roughly-kept hedgerows, with tall trees obscuring the landscape and giving a delightful fringe to an otherwise dull road.

A score of chickens create some diversion. They mobilise in the centre of the highway, and affect indifference to the wheezy piping of the horn. Stentorian voices do not move the feathered bipeds, and not a wing do they flap till we are preparing to swerve around them, when, parting into two companies, they rush helter-skelter to the hedge, leaving the car to go on its way conscious of having shortened no fowl life. The poultry of these parts have become accustomed to motors, and seem to take a delight in irritation.

The clean whitewashed cottages are bright specks as we maintain our pace—no police in sight and no lives to endanger. Here and there a pink-washed cabin reveals the æsthetic tastes of its occupier, although our respect for his artistic nature is spoiled by the scene inside—a brief revelation of which is obtained through the open door.

And so on to Rathcoole, with only one grand residence, viz.,



Photo by]

The Gordon Bennett Course—Double Turn on the Road between Carlow and Magney.

[Lawrence, Dublin.

Lucan, Sallins, and Newbridge; and other points are between thirty and forty miles from Nelson's Pillar—the point at which all trams meet in Dublin. The most direct route, however, has yet to be mentioned, and is one to be avoided on the day of the race, as its convenience will naturally lead to its congestion on that occasion.

However, there was no race last Friday, and so we then set forth to view the Course, proceeding by way of Naas and Kilcullen to Ballyshannon cross roads.

The morning opens sullenly, but the trusty Mercedes was as fit as ever, and, nothing daunted by the low'ring skies, we move away to the south-west by way of Kilmainham, passing the gaol on the right and leaving the Wellington obelisk far away in the Phoenix Park. From the windows of the prison there must be a fine view of the hills on the other side of Dublin, but the place itself has a sombre hue. On the left the barracks are conspicuous, a Highlander doing "sentry go" as we skurry along to Inchicore, where locomotives—not of the light variety, however—are the main product. Passing Clondalkin there is a steady rise to Rathcoole, which is about 500 feet above the sea level. The

Castle Bagot, to break the monotony of the occasional rows of cottages and the continual rows of hedges and walls, with luxuriant fields beyond. What pasture land, were only the cattle there! What cultivable areas, if only things were righted in Ireland and the harmony of the people were secured!

So far our journey has been made amid the frowning of the skies above, but now the clouds become diaphanous, and their fleecy whiteness promises something better. In Rathcoole we see the sun—and also the winter of the people's discontent. Was there ever such a place? Every other house is a ruin, and if ever a town appeared fit for bankruptcy we have come upon that town. Standing conspicuous in the surrounding landscape, the pride of the place appears humbled, and although none of the hamlets between Dublin and Kilcullen have an air of respectability, none have fallen so low as this town, so prettily nestling at the foot of great Saggart Hill, which rears its head thirteen hundred feet, and has its foot above a scene of poverty and squalor. Thackeray saw the place, and it had disappeared from his memory in three days; it will ever linger in our minds as almost the bottom rock of desolation and despair. And such is

the way to the Gordon Bennett Course. Foreign visitors should go to Glendalough and Ashford, in co. Wicklow, for the antidote to such a scene.

Beyond Rathcoole, and all the way to Kill, the animals seem to be straying as though it is their holiday time. A couple of donkeys look knowingly from the grass-covered footpath, and a flock of geese cackle along for fifty yards until they give up the unequal contest, and retire with honour and with life. A crow, less fortunate, lies in mourning to the rear as we shoot along to Johnstown, one of the prettiest hamlets on the route. Away to the left are the hills covered with clouds that mean to do us no good. Hardly have we passed the village than the rain begins to strike obliquely, and the pleasant smiling scene of a few minutes before is like "Niobe, all tears"—but the tears are streams, and the streams quickly gather into rivers. Parapluies, sou'-westers, and good spirits become absolutely necessary. The peasants must regard us as seafaring men floating in an unaccustomed element.

After a while the rain slackens; but not the Mercedes. She runs along, nothing daunted by the flood, and shortly before reaching Naas the rain ceases to flow in such torrential fashion. At Naas is seen the first building in course of construction all the way along—quite a novelty. On the roadside a road-mender is preparing to resume his breaking of stones, and, wearing a pair of goggles as he does, the man looks like some victimised motorist doing hard labour for speedy travel—an anticipation of what some J.P.'s would like to inflict upon motorists who go their way involuntarily. At Naas we look for the hotel—and find it. The guide book proves itself no guide to the place; but the proprietor is obliging, and although wet without we are dry enough within. Opposite is the Courthouse—one of Ireland's most prosperous institutions, and a substantially-built building reveals the fact that Naas can run its own newspaper and loves to come into contact with the great world beyond.

Donning goggles and mounting again, we make a direct run to Kilcullen, a pleasant little place that "tumbles down one hill and struggles up another," the Liffey being at the base of both. The ancient bridge was the scene of a stirring encounter in the insurrection of '98, and even now the town—which is only an overgrown village—has ideas beyond its station. One innkeeper, who has "a choice corner site," has rechristened his house "Flanagan's Motor Bar," a quiet compliment that he evidently regards as likely to be profitable. Such efforts should not go unrequited. There are ruins of abbeys, and houses in ruins all about the place, while a combination of hotel, inn, grocery and drapery trades gives some of the features of a great London stores.

And at Kilcullen we are upon the Course. Men are already putting the telegraph poles into position, and the barbed wire to keep the public from the route is waiting to be fixed. For here the cars will turn, and after twenty yards another turn will again give them a twist. The owner of the corner house is delaying his spring-cleaning and painting till after the event—possibly in anticipation of compensation for disturbance should any of the drivers happen to make the slightest miscalculation at the corner.

The road from Dublin to Kilcullen is not wholly bad; there are good stretches, but there are also bad ones, and bumpy. Once on the Course a distinct improvement is observable, and we journey as far as Ballyshannon cross roads, where the start will take place. Under the grand stand erected by the Automobile Club is a great confusion of timber, stones, and steam rollers, and much work will have to be put in to bring it into proper order by the day of the race. However, the officials are in earnest, and the danger of leaving anything undone is realised.

Returning to Dublin by the same route, the same features presented themselves as on the way out. Only one motor-car was seen, while the indifference of the horses to the automobile showed what splendid educational work has been done of late. Even that must be of advantage to Ireland.

ON THE COURSE.

NEVER before have the Irish railway companies made such preparations for taking the sightseers from a distance as on the present occasion, and return fares at a fare and a quarter will appeal to those of frugal mind and tender pocket. Some of the companies will be running dining cars through the night, with ample provision for hungry souls. Hundreds of jarveys from various parts of the county of Dublin are leaving for convenient points, and hope to make small fortunes in driving spectators from the railway stations—most of which are situated a few miles from the Gordon Bennett route. At 2.30 a.m. the Dublin and Blessington Steam Tramway Company will commence running special trams with bicycle trucks attached from Terenure to Poulaphuca—about eight miles from Kilcullen—and it is expected that these facilities for reaching a convenient centre of the route will be taken full advantage of by cyclists, who will find a fairly good road by which to reach their objective on the day.

SEEING THE RACE.

FACILITIES for seeing the race are ample; the only difficulty will be to reach the various points of vantage. Between Kilcullen and the Moat of Ardsclull, where the cars will speed along seven times, several fields were still to let when we traversed the Course a few days ago. At other points of vantage stands were in a forward state, while the presence of a traction engine, with three or four trailing wagons laden with timber, told of the anxiety of contractors to have every seat ready in good time. Bower's stand has a good location on this road, and the Thomastown stand was another that seemed likely to have plenty of patrons, judging from its position. At Kilrush, Messrs. Meccredy, Percy and Co., have a stand with which Messrs. Thomas Cook and Son have also been associated, while they will entertain many friends at the Moat of Ardsclull—a splendid point from which to see the cars coming at full tilt along the straight, and then, with an awkward swerve round the Moat, they will dash along to the Club Enclosure, where the Grand Stand arches the road, and will form a landmark for the drivers on Thursday. Opposite the Kilrush stand is a "natural stand," which really means an open field, admission to which will be obtainable on payment of three shillings—the most moderately priced accommodation along the whole route. Near the rock of Dunamaise at Aughnahilla, Stradbally is a good position, with—to quote the advertisement—"an unbroken stretch of seven miles, plainly visible to the naked eye; with glasses the cars can be kept in view for thirteen miles of fastest stretches." To this is added the suggestion, "contradiction defied," thus challenging the announcement of rival stand proprietors. On the Curragh, the Turf Club have obtained permission for a stand, and the Great Southern and Western Railway are running special trains in the early morning to a siding at the back of the stand. Other notable stands are that fitted up by Messrs. Bodley and Duthie, a mile and a half from Athy; that of the Ballintogher Cycle Club, on a cutting at Youngstown, midway between Athy and Ballyshannon; on land at Fontstown, and at other points too numerous to mention.

THE WEIGHING-IN.

[BY TELEGRAPH.]

NAAS, WEDNESDAY.

TO-DAY the weighing-in is taking place here at Naas—an inconsequential little town, with one good main street and many little bye ones, all dirty and drab and unlovely. With less than 4,000 inhabitants, Naas boasts a barracks, a gaol, and a workhouse, and although the two latter appear too large for the place, they find excellent custom at times. In the old coaching days, Naas was of some importance, and its inns were inns. Now the hotels are general stores, and on the great main road the bar to one of the leading hotels is reached by way of the bacon store and dried fish emporium. Such was the experience of many who came here this morning, after the run from Dublin—to which we have said good bye for at least forty

hours, i.e., if all goes well. Naas is ancient—in fact, one of the very oldest Irish towns—but it has never seen such a sight as is presented by the weighing-in of the cars to-day. How different to the scene in the market-place as described by Thackeray in his "Irish Sketch Book," sixty-two years ago, when he found the town, as now, "poor, mean, and yet somehow cheerful." Three miles away is the Punchestown racecourse, and there weighing-in is not unknown; but not such weighing-in as we have come to do on this day of bustle and worry.

We have had a splendid run from Dublin. The weather has settled for fine, and clouds of dust have been aroused. Hundreds of jarveys were passed making their way to railway stations ready for to-night, when thousands are expected. Major Lloyd, Colonel Crompton, Mr. Lyons Sampson, the latter in charge of the weighing, awaited the racers. Jenatzy came early, then Edge, with Cecil Edge as mechanic, distinguished by their green caps. Gabriel followed, his car being towed to the weighing place. The scene in the old market place was animated, the people being kept from the railed space by the Royal Irish Constabulary. One after another the racers came along.

The weight limit is 19 cwt. 3 qrs. 7 lbs. Gabriel scaled 7 lbs. below limit. Owen's weight was 17 cwt. 21½ lbs. The reserve Mors car (Salleron) scaled 19 cwt. 3 qrs. 1 lb. Great interest was aroused in the weighing of the Napiers, and Edge's appearance was greeted with a hearty cheer as he came up on his new big racer, which he has, after all, decided to drive in the race to-morrow. Its weight was 19 cwt. 1 qr. 20 lbs. Jarrott scaled 19 cwt. 2 qrs. 20 lbs.; his mechanic will be Bianchi, while MacDonald will accompany Stocks. Some sensation was caused during the proceedings by a man falling from a balcony; he was, however, unhurt. Brilliant sunshine prevails, but the weighing progress is long and tedious. The constantly arriving cars, to some extent, relieve the monotony, and over a hundred automobiles are now here. Edge's reserve car, the 40-h.p., weighs 18 cwt. 3 qrs. 10 lbs.

Most of the members of the International Commission are present at Naas, and the assemblage is fully representative of European and American automobilism. The roads at dangerous corners of the course have been oiled.

A REHEARSAL ON THE COURSE.

[BY TELEGRAPH.]

KILDARE, Wednesday.

An exciting afternoon. We leave Naas before the weighing is finished and rush along to Kilcullen, down hill and up again, overhauling car after car. At Kilcullen the road is closed for rehearsal over Eastern Circuit. The Rev. Dr. Walsh, Archbishop of Dublin, decides to take a run round the course with Mr. Cordingley on his Mercedes, and with six passengers up we journey to Ballyshannon. What a change since Friday! The broken patches have been rolled, the stand is finished, and everything is in order. Major Lloyd is here to practise starting; the pilot is sent off, and we draw up as first starter. One minute, says the Major; then we get to forty seconds, thirty, twenty, ten, five, and at last the word "go" sends us off at a spanking pace. We rush to the first turn, and his Grace the Archbishop looks nervous. At every twenty yards there is a policeman, and in Old Kilcullen quite a crowd of women hold up their grandchildren to see the car, and men hold back their dogs. Excitement is intense—a foretaste of to-morrow. Into Ballitore and Moone we go, and then take a fine stretch to Castledermot. The Archbishop is delighted. Away on the horizon are the hills, with little church spires dotted on the landscape. Past the noble ruins we enter a cloud of dust—impenetrable, dangerous, and nasty to the tongue. The black coats of the Archbishop and his chaplain become whitened in a moment. Quickly we get into the cloud and find a car. Horns are blown, throats are choked, and we pass with a wild sweep. Carlow is an immense concourse, and as we rush round the corner a shout of welcome from the people greets us. Then comes the tricky road, curling and curving all the way to Carlow. Mageney Bridge is only one of many awkward turns, and was enough to try the

nerves of our crew, some of whom were having their first motor-car trip. Frightfully narrow is the road from Mageney to Athy, and should any passings be attempted there accidents must happen. The men, however, know the road, and may be expected not to tempt accident along the strip. Fortunately all the nasty turns have been oiled, and the dust laid, otherwise something of the clouds seen in Paris-Madrid might be expected to-morrow. Down we rush to the Moat of Ardsclull, and then, with a terrible swerve to the right, enter the straight for Ballyshannon. A car is coming the reverse way; we both shot to the grass, and with a mighty effort our Mercedes gets upon the road again; it was a narrow escape. Then to the Grand Stand—forty-seven miles in the hour—and thus ends the Archbishop's first run. Earl Roberts, Baron Henri de Rothschild, Earl Russell, and others greet us, and then another rush is decided on, the narrow road to Kilcullen is negotiated, and we take the double corner opposite Flanagan's Motor Bar in right royal style. In a few minutes we are on the Curragh, rattling along a mile every minute, and dashing into Kildare at a terrible rate. Within a minute we are at a standstill, and learn from Mr. R. E. Phillips that a new scheme has been adopted, by which the result will be known two hours earlier than was expected. Instead of half the ticket being sent back to the timekeeper at the end of the Control, it will be put in a pouch on the car. These will be collected at Kilcullen Corner as the cars go round each time, and sent back to the timekeepers at Ballyshannon. The rehearsal has been a great success. The weather continues hot, and all is in order for our midnight spin round the entire course to see that the clocks are in order, and then, at seven o'clock, will be the culmination of months of excitement and preparation. There is no doubt as to the tension of the people; it shows itself at every corner, and no one will work to-morrow. The road is now in splendid condition. Marshals and stewards—many camping by their positions—are already taking their places.

'SYNCHRONISING THE WATCHES.

[BY TELEGRAPH.]

BALLYSHANNON, 6.30. a.m., Thursday.

At a quarter past two we started with Mr. H. Smith to synchronise the watches at the various controls. The acetylene lights shine brightly in the darkness, and across the Curragh we speed at sixty miles an hour. Kildare is soon left behind, and then we go straight for Monesterevan. The day is breaking, and a ruddy glare streaks the ashen grey clouds in the east. Tents with relays of tyres are becoming numerous, and down the hills we rush at terrific speed. The oiled portions of the road are a menace, giving the appearance of objects on the otherwise sandy surface. Across the great heath of Maryborough we fly, and peering into the coming day manage to take one of the nastiest corners in safety. There is a bad turn towards a pond, and then a violent lurch to the right; we dash along, splashing the water, and swerving with the rolling motion of a ship at sea. Soon the gaunt rock of Dunamaise is passed. The narrow strip of light gradually increases, and soon we are again in the open; in Stradbally the people are awakening, and cheer as we dash by. Then the road narrows, until it is little more than eight feet across. Now the full orb of the sun comes in view, and we turn through Carlow, leave the ruins of Ballitore behind, and dash away to Kilcullen, arriving at Ballyshannon soon after five. The grand stand is half full by six, and great crowds are treading the damp grass to the Club enclosure. Gabriel is already astir, and rumours of other racers being about are rife. At half past six the wind is getting up strongly, and dark clouds are coming over the landscape. The starting-point is a veritable Babel of every tongue, and excitement is increasing.

Drafts of military have arrived from Dublin. In addition to 2,000 Constabulary, 2,000 mounted soldiers and infantry are stationed along the route. Patrols are strolling along the roads clearing them of stray cattle. The side roads have all been wired off.

THE RACE.

[BY TELEGRAPH.]

KILDARE, Wednesday Midnight.

At 6.30 a.m. to-morrow, the two pilot cars—one driven by Lieut. Mansfield Smith-Cumming and the other by Mr. Mark Mayhew, L.C.C.—will leave Ballyshannon cross-roads to warn the spectators of the imminence of the start. They make the entire circuit of the course, one going east and the other west. No one will be allowed afterwards to cross the course, save at controls, until it is officially announced that the race is concluded.

There will be an interval of seven minutes between each car starting. The start will take place on a slight down gradient, the cars going off in the following order :—

Time. a.m.	No.	Make of Car.	Driver.
7	1	Napier	Mr. Edge.
7.7	2	Panhard	Chevalier de Knyff.
7.14	3	Winton	Mr. Winton.
7.21	4	Mercedes	M. Jenatzy.
7.28	5	Napier	Mr. Jarrott.
7.35	6	Mors	M. Gabriel.
7.42	7	Peerless	Mr. Mooers.
7.49	8	Mercedes	Baron de Caters.
7.56	9	Napier	Mr. Stocks.
8.3	10	Panhard	M. Farman.
8.10	11	Winton	Mr. Owen.
8.17	12	Mercedes	Mr. F. Keene.

As mentioned last week, the colours for the cars are : Great Britain and Ireland, green ; France, blue ; the United States, red ; and Germany, white.

Baron de Zuylen will be the judge, Major F. Lindsay Lloyd the starter, and Mr. R. E. Phillips the timekeeper-in-chief. There will be seven controls, the head marshals being as follows :—Kilcullen, Mr. P. W. Northey ; Castledermot, Mr. E. de Wilton ; Carlow, Major Bower ; Athy (East), Mr. J. Macdonald ; Kildare, Major H. Welch-Thornton ; Monasterevan, Mr. T. W. Staplee Firth ; Stradbally, Mr. V. Silberberg ; Athy (West), Dr. Boverton Redwood.

In all, 161 officials will be engaged at the controls, and everything has been done to secure perfect order to-morrow.

BALLYSHANNON, Thursday Morning.

At half-past six the Star car, driven by Mr. Joe Lisle, and the Wolsley, driven by Lieut. Cumming, start as pilots. Half an hour later Mr. Edge arrives at the starting-point. Major Lloyd calls "Attention!" and he is off amid the plaudits of the crowd. He gets nicely away, and disappears in a cloud of dust. De Knyff shoots off at once straight and strong—a splendid start. Owen seems over-anxious, and is slow. Jenatzy is all excitement, and is rapidly giving instructions to his mechanic. Clutching the lever strongly, he gets away at once, and at the fastest speed of the first quartette. Jarrott comes along leisurely, smoking a cigarette, and faces the starter with apparent nonchalance, getting away in fine form. Mooers is nervous, and actually makes a start with his brakes on. Baron de Caters comes coolly along, shakes hands with Mr. C. Gray Dinsmore, and makes a start second in excellence to that of Jenatzy. Stocks bids farewell to Napier, and is soon picking up speed. Then comes Farman, who is warmly greeted by the French visitors, and he gets away, losing, however, 17 secs. Winton is unfortunate, being unable to start owing to carburettor troubles. His car draws to roadside, the stewards form a cordon round it, and Winton sets to work. After 7 mins. interval Foxhall Keene comes in view. The proceedings become somewhat monotonous, and already interest is flagging. Keene's motor stops and he loses a few seconds. Winton is still by the roadside, and will be handicapped accordingly. The marshals are now clearing the course, and there is a general stampede to provender baskets. Edge passed Ballyshannon at 8.24, 5 mins. before he was expected.

ATHY, 9.30 A.M.

Mooers lost a pin of his speed gear at the Athy control, and is out of the race.

CARLOW, 10 A.M.

Mr. Stocks is uninjured. He ran off the road into a wire fence two and a half miles outside here. It is not yet known whether his car is sufficiently intact to continue in the race.

BALLYSHANNON, 10.30 A.M.

The following are the official times of the leaders in the first loop of the first round :—

Edge, 1 hr. 23 mins. 2 secs. ; De Knyff, 1 hr. 33 mins. 47 2-5 secs. ; Owen, 1 hr. 47 mins. 57 2-5 secs. ; Jenatzy, 1 hr. 47 mins. 58 2-5 secs. ; Jarrott, 1 hr. 53 mins. 10 4-5 secs. ; Gabriel, 2 hrs. 5 mins. 10 4-5 secs.

Edge completed the second loop, making the first round at 10 o'clock. Mooers, Stocks, and Winton have yet to complete the first loop.

BALLYSHANNON, 11.26 A.M.

Jarrott injured in accident at Stradbally, doctors sent for. He is out of the race. Jenatzy, De Knyff, Farman, Gabriel, and Edge are leading. Americans going badly. The cars are jumping over the roads, and the drivers are finding difficulty in negotiating the route between Carlow and Athy.

BALLYSHANNON, 12.30 A.M.

Stocks' wheel smashed. Jarrott's car struck side of ditch and his mechanic is hurt. De Knyff has passed Edge. England's chances are regarded as hopeless. Keene is passing, followed at an interval of one minute by Jenatzy. Everyone is anxious as to the whereabouts of Edge. Stocks dashed into a fence at Castledermot.

BALLYSHANNON, 1.22 P.M.

Edge, Gabriel, and De Caters have passed, Edge and Jenatzy having done a flying mile at the rate of sixty-four miles an hour ; De Knyff has done it at sixty-six miles per hour. The Americans have not been seen for some time. Farman is whizzing by. A notable feature is De Knyff's short circuit in one hour eighteen minutes fifty-seven seconds. Rain threatens.

AFTER THE RACE.

At the Skating Rink at Earlsfoot Terrace an exhibition of the racing cars, together with representative types of touring cars, will be held on Friday and Saturday of this week, and a charge of two shillings will be made for admission. Despite the counter attractions of the Gymkhana and speed trials in Phoenix Park, this will doubtless be greatly patronised, and a display of the products of Irish cottage industries will be made, so that the pockets of visiting motorists may be lightened appreciably. The building is well adapted for the purpose, and, although not large, will enable the Irish people to realise even more thoroughly than they can see in the streets the leading features of the jaunting car's new rival.

The speed trials in Phoenix Park are, naturally, attracting attention, and they will give the people of Dublin an idea of racing such as is not possible in connection with the Gordon Bennett race. All the events will be run over a course of one mile and one kilometre, 2,853.6 yards, in heats of two cars or six motor-cycles.

On Monday the tour will commence to Newcastle, co. Down, and Belfast, and on Tuesday next there will be a hill-climbing competition on the famous Ballybannon Hill, at Castlewella, and a race from Clough into Castlewella, commencing at 10 a.m. The hill to be climbed is about one mile in length on each side, with a rise of 300 feet. The test will start from Murland's factory, at the foot or middle of the two hills, and the cars make the best speed they can up past Ardnabannon House towards Clough. At a mark on the top of the hill the times will be taken, and the cars then pass on at their leisure to Clough, where they will be marshalled for the race back in the afternoon. The best view will be obtained from the Automobile Club enclosure at Ballybannon Hill, which has a frontage of nearly 300 yards on the hill road. Here the band of the Faugh-a-Ballaghs will play during the day. A small village of luncheon and other tents is being provided by Messrs. S. Wilson and Company. There will be a footbridge across the road, so that visitors to the en-

closure can get in at any time after the road is closed. The road from Clough to Castlewellan will be absolutely closed to all traffic from 10 a.m. till the races are finished.

On the following day the motorists will return to Dublin, and then on the 9th will start for Cork *via* Waterford or Lismore, at one of which places the night will be spent. On the Friday there will be an eliminating race for motor-boats at Queenstown, and in the afternoon a speed trial for motor-cars on the Carrigrohane road, Cork.

On the 11th, the motor-boat race for the Harmsworth Cup will take place, and then on the 12th the tour to Killarney and the south-west will commence.

THE IRISH FORTNIGHT.

GLENDALOUGH will be visited by many motorists during the Irish fortnight, and the Rev. M. Hogan's brief guide to its records, ruins, and romance comes at an opportune moment. This is published by Messrs. Browne and Nolan, Limited, and the modesty of the author is conspicuously shown in his advice to the reader to save time when at Glendalough by not depending wholly upon his interesting pamphlet, but by ferreting out a local guide, Patrick Barrett being the most notable, his patronage having included Royalty. But even with the local guide, the Rev. M. Hogan's book will be useful, if not indispensable, to the visitor wishing to check the story told by the local enthusiast.

DURING the Irish Fortnight owners of M.M.C. cars in Ireland will be able to get spare parts for their vehicles from the Irish Motor Company, of 55, South King Street, Dublin.

SINCE his arrival in Ireland, Mr. L. P. Mooers has been practising on the Gordon Bennett course with a 10-h.p. M.M.C. car.

BARBAROUX, the victor of the kilometre race and hill-climbing trial at Huy, Belgium, the other week, is bringing his 60-h.p. Benz Parsifal racing car to Ireland to compete in the Phoenix Park speed trials.

NEAR the O'Connell Bridge in Lower Sackville Street, Messrs. Merced, Percy, and Co. have opened an inquiry office, where help to strangers visiting the island will be gladly given.

ONE of the largest enterprises in connection with the Gordon Bennett race is the stand at Kibrush which is the property of Messrs. Merced, Percy, and Co. and Mr. George Langley. This stand is situated half a mile from the start and commands a view of the finishing straight. From this coign of vantage the spectator will observe all the incidents which precede the start of the great event, as well as the fluctuations of the race itself, to advantage.

MR. W. F. PEARE, of Waterford, writes:—"I notice that my name has not been included for Waterford in the list published by the Anglo-American Oil Company of 'Where to obtain Pratt's Spirit,' although I have the largest workshops and garage in Ireland, and sell a ton of spirit for every gallon sold by any other retailer in this part of Ireland, and have always in stock several tons of Pratt's spirit. I shall feel much obliged if you will kindly give publicity to this fact in your columns for the convenience of tourists in this part of Ireland, where my garage is open day and night."

ON Sunday about eighty-five cars arrived at North Wall, and on Monday seventy more came from Holyhead, the arrivals including the Star car direct from its adventures in the Circuit des Ardennes, its light hue of green making it a conspicuous object among the score or so of vehicles with which it was, at first, put down in the garage of the Docks and Harbour Board. The loading and unloading arrangements devised for the occasion worked splendidly, and will be thoroughly clear to the reader

from one of the photographs in the present issue. Only one mishap took place, a chain breaking just as the car on the cradle was within a foot of the ground. Fortunately the only damage done was the breaking of some of the spokes in the steering wheel.

THE day of the race was practically a general holiday. The Dublin Stock Exchange was closed, many of the markets were not open, and in and about Dublin universal festivity prevailed.

ON Monday De Knyff and Baron de Caters took a spin along the Course in company, and M. Jenatzy was schooling himself at some of the trickier corners. During the day forty French cars were seen at Athy, as well as a dozen German and a great number of British automobiles. The roads were somewhat dusty, and the villagers had some idea of what to expect in the way of dust should the present fine weather continue.

ALL who go to camp at the Moat of Ardsclull will find two candles provided in each tent, also a basin and soap, but campers will have to provide their own towels. Accommodation is provided for storage of motors, motor-cycles, and bicycles—the fees payable being 5s., 2s. 6d., and 1s. respectively. A smoking concert will be held on each evening in camp, and owing to the great labour and difficulty of providing a supply of spring water to the camp, gentlemen are requested to avoid waste of any water. "All lights to be out at 12 o'clock" is a bye-law to be strictly enforced.

AT the Royal Irish Constabulary Sports at Navan, on Monday, H. S. Huet won the five miles motor-bicycle race on a 2½-h.p. James machine.

THE Gordon Bennett course should be in splendid condition on the day of the race, and although there are some nasty corners, the surface should be well conditioned. At one time it was understood that none of the racing cars would be allowed upon the Course till July 2nd; but that regulation has been overlooked, and the racers have been practising for days on the identical cars they will drive. This has occasioned much comment, and it is suggested that rules should be made for observance.

VISITORS to the Emerald Isle must remember that eleven Irish miles are equivalent to fourteen English ones. The peasantry of the country generally calculate by the former, hence the necessity of the warning.

THERE is a pathetic interest in the fact that the suggestion with regard to the colours of the competitors was made by the late Count Zborowski, who was regarded as one of the probable British champions until his untimely death in the La Turbie hill-climbing competition at Nice removed a popular motorist and a thorough sportsman.

TO Connemara and West of Ireland will go many visitors desirous of extending the official tour. The Midland Great Western Railway of Ireland, whose headquarters are at the Broadstone Terminus, Dublin, are preparing an attractive programme of tours, including circular routes from the Irish capital to Connemara and Killarney. Achill Island will be a centre of interest to many, and the six days' itinerary suggested for seeing the sights of the place can be crowded into a third of the time by those who journey thither by motor-car.

SEVERAL tradespeople in the district of the Curragh Camp are stocking petrol, in view of the number of motorists likely to be in that district.

LATEST NEWS.

BALLYSHANNON, 2.40.

England and America hopeless; contest between De Knyff and Jenatzy. Foxhall Keene retires, thinking his axle is breaking.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE illustration reproduced on page 335 shows the 60-h.p. Benz car driven by Barbaroux in the Paris-Madrid race. His time for the run to Bordeaux was 8 hours 36 minutes, a performance which secured him the 28th position in the heavy car class. This is the first time a Benz car has taken part in an international event. The vehicle has a four-cylinder engine (160 mm. cylinder dia. by 140 mm. stroke) and cardan shaft transmission. The inlet valves are mechanically operated. The frame is of stamped steel while the gear box is adapted to give three speeds ahead and reverse motion.

ON Friday night last week the steamer *Ferdinand de Lesseps*, belonging to the Compagnie Générale Transatlantique, and chartered by the French automobile manufacturers, Messrs. Panhard and Levassor and Messrs. Mors, left Havre for Dublin, having on board upwards of 150 Frenchmen, interested in the automobile industry, either as simple enthusiasts, manufacturers, competitors in the race, and their substitutes, or as members of the Press. It is well known that the French people do not travel nearly as readily as we English, and most especially a sea journey is considered as a tremendously grave undertaking. But this journey, in search of an almost unknown island, hidden behind Great Britain, and away somewhere in the North Atlantic, is,



The Circuit des Ardennes—Guders on Pipe Car Taking the Corner at Bastogne.

as may well be imagined, an event in the life of most of the 150 passengers, looked forward to with awe, and which will be looked back upon with the quiet consciousness that a life's work has been accomplished, only second in importance to the discovery of America by Columbus! Before leaving Havre there was a dinner on board the *Ferdinand de Lesseps*, at which were present all the *élite* of the automobile world, coming to Havre either by train or by automobile.

LAST week was a great week for the airships. The "Lebaudy" made a world's record for a distance covered in a single journey by automobile balloons, covering 98½ kilometres in two hours and 46 minutes—that is to say, doing 61 kilometres more than it accomplished in its famous voyage from Mantes to Moisson. It was just 4.46 in the afternoon when the crew of sixteen men having hold of the guide-ropes brought the famous "Jaune" out of its shed and on to the plain, with the pilot, M. Juchmes, and his two assistants on board. A few minutes past 5 o'clock the motor was started, and gradually turning quicker and quicker, the propeller caused the airship to glide up to an altitude of 200 metres in the air, and then, until 7.56, the airship continued travelling without any interruption or without the slightest deviation from its already fixed course, and covered quite successfully the journey which had been laid out for it; consuming about 13 gallons of petrol for a journey of 62 miles,

As for Santos Dumont and his wonderful No. 9, it now becomes such a common sight to the Parisians that he scarcely attracts any attention. He is constantly to be seen dodging about between his home in the Champs Elysées and his balloon shed at Neuilly. He even lands in front of his house in the Champs Elysées, although he chooses the early hours in the morning for this purpose, so as not to interfere with the traffic. In the meantime he pays calls to his friends in the country and comes down at the polo ground in the Bois de Boulogne, and plays all sorts of antics to show the practicability of his little airship. Santos Dumont is of course still working at a racing airship, but it is not yet completed.

THE Aix-les-Bains week, which consisted of a touring competition, began on the 27th June. The country where it took place, situated as it is at the foot of the Alps, was eminently suited to hill-climbing experiences, and constituted the greatest trial of endurance that could be devised. In other parts of the country one has to search carefully in order to find a difficult hill on which to test motor-cars; from Paris one must go out to Gaillon or to Chateau-Thierry, or to other hills, situated at a distance, more or less inaccessible on that account. But at Aix-les-Bains in every direction there are very difficult mountain roads, which are capable of testing the most powerful cars to their utmost, and proving that, notwithstanding what is said to the contrary, high horse-power is requisite to meet the requirements of automobile



The Aix-les-Bains Week—Guigon on Rochet-Schneider Car, leaving the Enclosure.

touring of the present day. Thirty-three cars took part in the trials. The whole competition was favoured with the most delightful weather, and not the slightest accident marred the event.

On the 15th inst. an interesting competition will take place at the laboratory of the Automobile Club of France, at Levallois-Perret. The competition will be for different carburants, and the following points will be taken into consideration: the consumption of a kilowatt per hour at different speeds, and the state in which the organs are after working for ten hours consecutively, and then resting for a night without having been cleaned.

AN Extra-Parliamentary commission has been appointed to look into automobile questions, and to advise on new legislation before Parliament. This committee will meet under the presidency of M. Michel Levy, Inspector General of Mines. It comprises amongst its ranks most of the present automobile manufacturers and experts. The questions which this commission will be asked to report on are the following:—(1) Is there any reason to limit by law the maximum speed on the level of automobiles coming out of the hands of the manufacturers, and if so, what should be the maximum legal speed on the level? (2) Is there any means of verifying the speed? (3) Is there any reason to admit of exceptions by individual authorisation for vehicles

exceeding the admitted speed? (4) Should speed trials on public roads be entirely stopped or exceptionally authorised? (5) At what maximum speed on the road does it become dangerous for the drivers of automobiles, when there is a sudden bursting of the tyre? (6) With what precision will the steering arrangements permit two cars to pass at different speeds? (7) Would it be possible or desirable to furnish cars with an apparatus for registering the speed, in order to remedy the inevitable uncertainty of appreciation of speed? (8) Should the number plate, which conforms to the decree of 1901, be maintained or not? Should not other means be devised to establish the identity of automobiles whilst they are running? (9) What are the causes of the noise, and by what means can it be remedied for both automobiles and motor-cycles? (10) What are the causes of the smoke and the smell, and can they be done away with? (11) How many and what brakes should be required for the different types? (12) What are the causes of the great dust raised by automobiles when they are running, and what can be done to diminish this trouble? (13) Would it be possible or useful to furnish automobiles with a cow-catcher, in order to avoid or diminish the effects of certain accidents? It will be seen by casting an eye over the above paragraphs that the Commission has some knotty and interesting problems to unravel.

THE hill-climbing trial from Susa to Mont Cenis, which has been so much looked forward to and so much spoken of last year, has been vetoed by the Italian authorities. A deputation has gone to Rome to see if anything can be done, but there is no likelihood of a successful result.

THE second day of the Circuit des Ardennes was devoted to the voiturettes and motor-cycles. The course was Arlon, Bastogne, Leglise, Martelange, and back to Arlon, a distance of 136 kilometres, which had to be covered twice, making 272 kilometres in all. In the voiturette section (250 to 400 kilog.) eleven finished out of fourteen starters, the race being a victory for Darracq cars, which secured the first two places. Appended are the times:—

Name.	Car.	Time.
Wagner	Darracq	3 55 27
Villemain	Darracq	4 27 53
Denis	De Boisse	4 39 26
Vilain	Prunel	4 39 44
Corre	Corre	4 43 34
Fournier	Clement	4 55 58
Masson	Clement	5 15 1
D'Aubignosc	Ader	5 31 48
Gautier	Ader	5 51 1
Persan	Corre	6 50 40
Heipel	Corre	6 51 41

In the motor-cycle section, out of thirty-five starters only eleven finished. Appended are the times:—

Rider.	Machine.	Time.
Demester	Griffon	4 59 46
Andre	Red Star (Gamage)	5 23 26
Kinet	Antoine	5 26 4
Momo	Pengot	5 29 39
Verechaer	Sarolea	5 30 7
Flamand	Minerva	5 35 1
Rene	Red Star	5 42 11
Barret	Bruneau	6 26 20
Dacier	Clement	6 23 9
Oster	Clement	6 30 58
Kerff	Sarolea	9 40 0

A MOTOR-CAR race, organised by the Automobile Club of St. Petersburg, was held near the Russian capital on the 21st ult. The distance was twenty-five versts, and this was covered by M. Kapouctine, the winner, in 31 minutes.

MESSRS. CLARKSON, LTD., of Chelmsford, have secured an order from Messrs. Debenham and Co., of London, W., for a number of travellers' automobile broughams, for use in connection with their well known business.

MOTOR-CYCLING NEWS.

A MOTOR-CYCLE record from John O'Groat's to Land's End has been established by Mr. J. Silver, whose time, despite persistent rain and heavy roads, was 2 days 29 minutes, including all stoppages for sleep and refreshments. This is 1 hour 16 minutes faster than the time taken by Mr. E. H. Arnott last year. Silver, who rode a 3-h.p. Quadrant, made two unsuccessful attempts before he accomplished the journey.

BELT troubles are in many instances no doubt traceable to the want of knowledge on the part of the user. When the belt is slipping, it is not wise to jump to the conclusion that it must be shortened; it should be detached and thoroughly cleaned with petrol from all dirt; this can be done with a tooth brush, which should be carried for the purpose, and the surface of the belt scraped clean with a blunt knife. Lastly, an occasional dressing of castor oil well rubbed in the belt over night will do good, and keep the leather pliable. The Ormonde Co. also recommend that the belt should be removed from the bicycle when resting for a period, this allowing the leather to lose its stretch.

LAST month half a dozen enthusiastic motor-cyclists met for the purpose of considering the advisability of forming a club in South London. Motorists desirous of joining should communicate with the hon. sec., Mr. W. L. Lorkin, at 223, South Lambeth Road, Stockwell, S.W.

ON the Canning Town track, last week, J. F. Crundall, riding a Humber motor-bicycle, established new records from two to thirty-two miles. The twenty-fifth was the fastest mile, this being covered in 1 minute 6 1-5 seconds, equal to 54 1/4 miles per hour. Ten miles were reeled off in 11 minutes 31 2-5 seconds, twenty miles in 23 minutes 8 3-5 seconds, and 32 miles in 36 minutes 56 seconds.

THE 200-mile reliability trial of the Motor Cycling Club for the S. F. Edge trophy took place early on Saturday morning, the start and finish taking place at Hatfield. Out of 20 entries, 14 riders were ready to start at 6 a.m. The first stage of the run was from Hatfield to Stoney Stratford, on the Holyhead road, then returning to Hatfield, making a distance of 73 1/4 miles. This was followed by a run to Hitchin and return to Hatfield, 100 1/4 miles. The 200 miles were made up by a run to Hertford and Wades Mill. The riders were started in groups of three, at intervals of a few minutes, the last group leaving at 6.20. As a result of the trials, three riders completed the whole programme with non-stop records, viz.: L. Jones, 1 1/2-h.p. De-Dion Clement tricycle; T. Silver, 3-h.p. Quadrant bicycle, and J. H. Keene, 2-h.p. Minerva bicycle. The majority of the stoppages in the case of the other riders were due to tyre troubles, punctures being the order of the day.

ON Saturday last the National Cyclists' Union held their annual championship competitions on the Canning Town Memorial track, to witness which some 8,000 persons assembled. The winner of the Five Miles Motor-Cycle Handicap was C. R. Collier, 15 seconds start. Net time 5 minutes 57 3-5 seconds. J. F. Crundall won the Three Miles Motor-Cycle Match. Time, 3 minutes 34 4-5 seconds.

A CAUTION board for motorists is to be placed at the London side of Alresford (Hampshire).

A COMPANY has just been formed in Warsaw, Poland, to start a motor-car service for the conveyance of passengers and goods in the Vistula district.

THE London County Council—who have been consulted on the point by the Local Government Board—have agreed to raise no objection to such an amendment of regulations as will enable motor omnibuses to be constructed of the same size as ordinary omnibuses, namely, 7 feet 5 inches in width. The maximum at present sanctioned is 6 feet 6 inches.

THE "THOMAS" FRICTION-DRIVEN PETROL CAR.

IN a recent issue a brief reference was made to a new friction-driven car which has been completed by Mr. W. F. Thomas, of Inkerman Street, Vauxhall, Birmingham. Since then, we have had a trial run on the experimental car illustrated herewith, and with a load of four passengers it not only ran well on

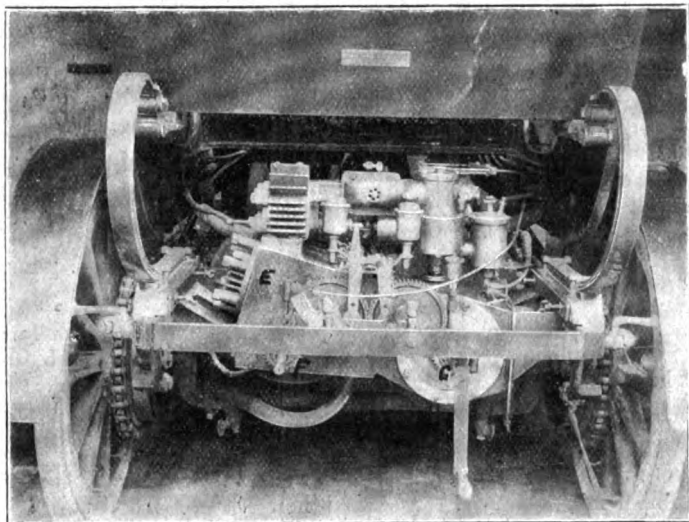


Fig. 1.

the level but took all the ordinary hills met with at a good speed. Two views of the car are shown in the accompanying illustrations Fig. 1 being a view from the rear with the cover removed to show the motor, and Fig. 2 a view of the gearing under the floorboard in the centre of the car. The engine comprises two cylinders, $3\frac{1}{2}$ in. diameter by 4 in. stroke, and develops about 8-h.p. The cylinders lie transversely across the car at an angle of 16 deg. from the horizontal, the one (E) having its head near the

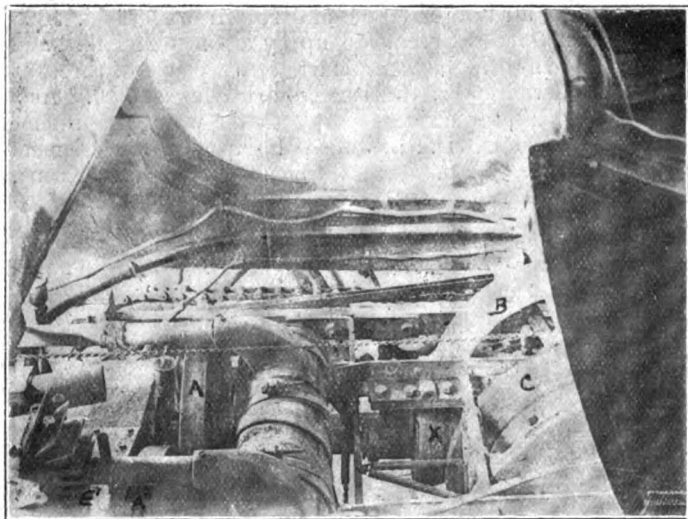


Fig. 2.

frame on the left-hand side, and the other having its head further forward near the right-hand side of the frame. The piston rods of each cylinder are connected to a separate crank shaft, located beneath the breach of the opposite cylinder. Each crank-shaft carries a flywheel AA. Fig. 2, just in front of the engine. The flywheels overlap one another; they revolve at the same speed, but in opposite directions, to ensure which the two shafts are at their rear ends connected together by gearing, as seen in

Fig. 1. The forward ends of the crank-shafts are provided with telescopic and universally-jointed shafts, which are mounted in ball-bearings and terminate at their forward ends in friction pulleys having conical faces. The pulley X on its shaft is seen in Fig. 2, a similar pulley being also mounted on the other shaft. The bearings are so arranged that the friction pulleys can be forced towards one another or can be forced apart, and provision is also made by which they can be moved longitudinally. When brought towards one another they come into contact with conical friction discs mounted on the countershaft. As the pulley wheels are moved inwards towards the centre of the countershaft, so its speed relatively to that of the engine is increased. Both the pulley-wheels tend to drive the countershaft in the same direction. The changes of speed can be made gradually, and a considerable range is available. A reverse motion is obtained by forcing the two friction pulleys away from one another, so that they come into contact with the cone-faced wheels B on the countershaft. The power is transmitted from the countershaft to the rear wheels in the usual way by side chains. The pulleys are kept in contact with the discs by means of toggle joint and springs, which enable the same amount of pressure to be maintained between pulley and discs, whatever their relative positions may be. All thrusts are taken up by ample dimensioned ball bearings to reduce friction. The experimental car having proved satisfactory, we understand that Mr. Thomas is about to put a 10-h.p. vehicle and a 6-h.p. voiturette, both with the friction drive, on the market. The

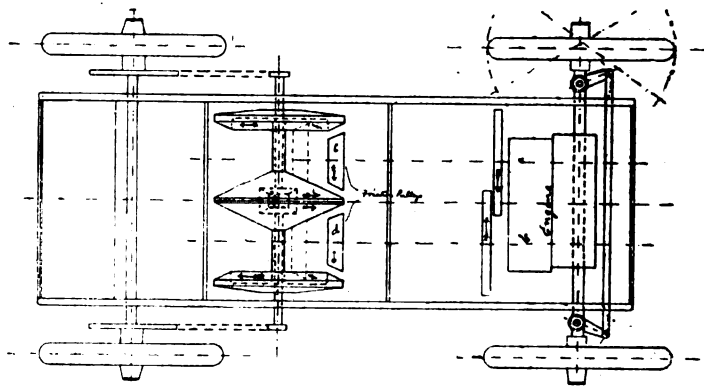


Fig. 3.

former will have a twin-cylinder engine of the same form as that described above; but it will be placed beneath a bonnet in front instead of being behind, as shown in plan in Fig. 3. The smaller vehicle is to have a single-cylinder engine, giving 6-h.p. at 800 revolutions per minute.

Two of the steepest hills in the Lake District country, *i.e.* Kirkstone Pass and the Red Bank, were recently ascended by a 10-h.p. Wolseley with three passengers. Kirkstone Pass is a hill three miles long, and a dead climb of 1 in 6 and 1 in 7. The Red Bank is even worse, averaging 1 in 5 for just over half a mile.

THE Rowe Cycle and Electric Company, Cowgate, Peterborough, have recently taken over premises that have for the past fifty years been used as a carriage builder's establishment, as a garage. This will accommodate about twenty cars. Repairs are executed by competent motor mechanics, and a good assortment of spares are always in stock.

THE Corporation of Yarmouth have issued an attractive guide to their equally attractive resort. Motorists will be interested to know that the roads in the vicinity are good, and although the Norfolk police have lately shown an unpleasant interest in motorists, there is no doubt that this particular part of East Anglia will be largely visited on motor-cars during the present spell of fine weather.

HERE AND THERE.

SINCE the new automobile regulation went into effect in New Jersey 2,200 licenses have been issued.

WE are asked to state that there is no truth in the report that Messrs. De Dion Bouton and Company will take up the construction of a car designed by M. Leon Bollée.

THE Barnstaple Rural District Council has adopted a resolution to the effect that the present regulations with regard to motor-cars are thoroughly unsatisfactory, and a source of danger to wayfarers.

THROUGH the Board of Agriculture the Ordnance Survey have issued a folding pocket map of Chatham and the surrounding district. This is one of the series of maps issued by this department, and will be of special interest to motorists touring in that district.

FROM the Chief British Depot, 94, Victoria Street, S.W., we have received copies of the latest catalogues and price lists of Delahaye petrol cars, and Chaboche, French Gardner-Serpollet, and English Serpollet steam cars. Both lists are useful, giving as they do illustrations of various parts of the vehicles.

AT a meeting of the Halstead Rural District Council, resolutions have been passed that in any amendment of the law relating to motor-cars there should be no extension of the present speed limit of twelve miles an hour over rural district roads, and urging the necessity of some system of identification of motor-cars.

DUMFRIES, N.B., thirty-three miles north of Carlisle, is on the direct coach road, England to Glasgow, also the junction of the main road to Stranraer for the north of Ireland. To motorists it is, therefore, an important place of call. There are some half-dozen first-class hotels and garages of unlimited accommodation at 78, High Street, and 73, English Street, where Mr. Wm. Irving has recently made arrangements to supply petrol and lubricants, and to carry out repairs without delay.

THE welcome offered to motorists by the High Gosforth Park Company, Limited, at their race meeting at Newcastle last week, was well appreciated. Among the other cars which were in the Club enclosure were a 20-h.p. Napier, three 10-h.p. Wolseleys, one 5½-h.p. Wolseley, three 9-h.p. Clements, one 18-h.p. Beaufort, and a 10-h.p. Lanchester. The Northern Counties Motor Garage, of Pilgrim Street, Newcastle, had a man in attendance who was busy selling petrol, goggles, and other accessories. Altogether, owing to the fine weather, and a successful meeting, automobilists were well catered for.

ONE day last week we had a short spin on a 12-h.p. "Motobloc" car in company with M. Dombret, who drove the vehicle in the Paris Madrid race, and which has been brought over to this country by Messrs. Montague Hawnt and Co. Three of these cars were entered by the makers, La Société des Automobiles Motobloc of Bordeaux in the light car class of the international race, all of them reaching Bordeaux safely, and classified respectively Nos. 17, 20, and 21 in their category. The feature of the vehicles is the position of the engine, this being set in the forepart of the wood and steel frame at an angle of about 45 degrees to the horizontal, with the cylinder head foremost and uppermost. The motor comprises two cylinders, 120 mm. diameter by 120 mm. stroke, and runs at a normal speed of 900 revolutions. Another characteristic feature is the combined crank case and gear box, which are provided with a quick-detaching cover to allow inspection. Three speeds and a reverse are controlled by one lever, with direct drive on top speed. The sliding train of gear wheels is controlled by one fork. A single chain connects the variable gear shaft with the rear live axle. The car weighs only between twelve and thirteen hundredweight, and in Paris-Madrid averaged a speed of nearly forty miles an hour. Our short spin on the vehicle showed that it was not only an excellent hill-climber, but that it could be throttled down to run slowly and quietly in traffic.

LORD CHARLES BERESFORD has purchased a Baby Peugeot which he will take with him on his flagship.

NOTICE boards have been placed at the approaches to Brigstock, near Wellington, warning motorists to drive steadily through the village.

A SERVICE of motor-cars for the conveyance of passengers and parcels between Salisbury and Amesbury for Stonehenge and Bulford Camp commenced running on Monday last.

IN connection with the Henley Regatta, which is to be held on the 7th, 8th and 9th inst., a large official tent (the only one authorised by the Regatta Committee for housing cycles and motors) will be provided in the Regatta Meadows by J. A. W. Ratty, of Henley-on-Thames.

MANY are the old churches up and down the country which have recently been converted into motor garages. It has, however, remained for Mr. E. J. Coles to strike out in a new line, he having adapted an old fire station at 171, Great Portland Street, W., to the requirements of a motor-car depot and stable.



Accommodation is available for about ten cars, while provision is at hand for the charging of ignition accumulators, and the batteries of electrical vehicles. Mr. Coles is making a feature of hiring out cars, and has started a Thursday evening trip to the Crystal Palace, to enable visitors to enjoy the fireworks.

FOLLOWING up their successful experiment of a year ago, the Massachusetts State Highway Commissioners are using a large steam wagonette for inspection purposes. In a day's run recently, 73 miles were covered, in addition to a side trip of 15 miles. Boston was reached on the return journey early in the evening, the trip having been made in much faster time than could have been accomplished even with many relays of horses.

MESSRS. ANTHONY TREHERNE AND COMPANY, LIMITED, have issued the "Sporting Annual," a record of every kind of sport, including automobilism, cycling, yachting, etc. It is edited by Messrs. A. Binstead and G. Fitzgibbon, and will be found a useful volume on the bookshelves of every sportsman. A few good photographs add to the interest of the volume, but the list of motor-car firms might be brought up to date and expanded. Some interesting pages are devoted to miscellaneous records and dates.

THE IRISH SPEED TRIALS.

TO-DAY (Saturday) a series of speed trials will be held in Phoenix Park, Dublin. All the events will be run over the full course of one mile and one kilometre (2853·6 yards), from a standing start, in heats of two cars or six cycles. The following are the entries:—

CLASS A1.—Motor-Cycles up to and including 70 lbs.

Name.	Machine.	Name.	Machine.
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C. J. Garrard Clement Garrard. B. Yates Humber.

CLASS A.—Motor-Cycles up to and including 114 lbs.

Name.	Machine.	Name.	Machine.
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Ernest H. Arnott Werner. Harry Martin Excelsior.
 R. Samson Quadrant. Alfred Summers Triumph.
 T. Silver Quadrant. Sir Col. Kennard Werner.
 P. J. Dempsey Triumph. J. F. Crundall Humber.
 T. H. Wallen Triumph. Sam Wright Excelsior.
 E. H. Lancaster Ormonde. B. Yates Humber.
 J. Van Hooydonk Phoenix. A. C. Wright Ormonde.
 André Gommers Gamage. H. C. Hacking Ormonde.
 C. J. Garrard Clement Garrard. Henry W. Stones Rex.

CLASS B.—Motor-Cycles up to and including 170 lbs.

Name.	Machine.	Name.	Machine.
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Wm. H. Yates Hobart. C. G. Garrard C. Gerrard.
 E. H. Arnott Werner. Harry Martin Excelsior.
 Donald McNeill Quadrant. J. F. Crundall Humber.
 Edwin Perks Singer. Sam Wright Excelsior.
 Capt. L. E. Kennard. B. Yates Humber.
 W. Weekes Crypto. Riley Cycle Co. Royal Riley.
 J. Van Hooydonk Phoenix. Riley Cycle Co. Royal Riley.
 L. R. Oswald. Excelsior. L. B. Tucker Rex.

CLASS C.—Tourist Cars costing £300 or under, which need not carry more than two people.

Name.	Car.	Name.	Car.
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Henry Sturmeay 10-h.p. Duryea. Alfred Burgess 8-h.p. M.C.C.

CLASS D.—Tourist Cars costing over £300, but not more than £650, to carry four people.

Name.	Car.	Name.	Car.
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Alec. Govan 16-h.p. Argyll. E. Brun 12-h.p. Prunel.
 Sir J. T. Thornycroft 20-h.p. Thornycroft. H. Belcher 12-h.p. Humber.
 H. Du Cros, jun. 12-h.p. Ariel. R. W. Buttemer 10-h.p. Decauville.
 Capt. G. Skeffington Smyth 15-h.p. New Orleans. Alfred Burgess 10-h.p. M.M.C.
 T. B. Browne 18-h.p. James & Browne. Capt. Neil Haig 16-h.p. Boyer.
 W. Lecoq 10-h.p. Renault. Prof. H. S. Hele-Shaw 24-h.p. Darracq.
 Frank Lanchester 10-h.p. Lanchester. E. M. C. Instone 12-h.p. Belgica.
 J. T. Overton 24-h.p. Georges Richard. G. E. B. Pritchett 12-h.p. Meteor.
 R. W. Leader 16-h.p. Century. A. G. Stevenson 20-h.p. Thornycroft.
 Frank Atherley 12-h.p. Magnet. James Wilson 18-h.p. Elswick.
 Arthur J. Clay 16-h.p. Decauville. H. Austin 12-h.p. Wolseley.
 J. Lisle 10-h.p. Light Star. A. E. Crowdy 24-h.p. Wolseley.
 Mawdsley Brooke 14-h.p. Brooke Tonneau.
 Chas. Baker 20-h.p. Dennis.

CLASS E.—Tourist Cars costing over £650, but not more than £1,000, to carry four people.

Name.	Car.	Name.	Car.
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G. Cornwallis-West 20-h.p. Brush. Edw. Kennard 12-h.p. Napier.
 H. Du Cros, jun. 20-h.p. Ariel. W. J. Crampton 16-h.p. Decauville.
 J. W. Cross 20-h.p. Humber. Frank Barbour 10-h.p. Panhard.
 Hon. John Scott Montagu 22-h.p. Daimler. George Iden 20-h.p. M.M.C.
 E. Manville 22-h.p. Daimler. Alfred Burgess 20-h.p. M.C.C.
 E. M. C. Instone 22-h.p. Daimler. Lawrence Vickers 15-h.p. C.G.V.
 H. W. Millership 16-h.p. Lanchester. John Hargreaves 20-h.p. Napier.
 C. H. Lanchester 16-h.p. Lanchester. J. M. Gorham 20-h.p. Daimler.
 Hermann Goldschmidt 15-h.p. Pipe. Maurice Egerton 15-h.p. Panhard.
 Cyril C. Maudsley 25-h.p. Maudsley. H. G. Burford 24-h.p. Mercedes.
 Ernest Pitman 18-h.p. Peugeot. Percy Richardson 22-h.p. Daimler.
 F. R. S. Bircham Willard-Evart Hall 15-h.p. C.G.V. J. A. Holder 24-h.p. Panhard.
 — Ochs 16-h.p. Napier. H. Barbour 22-h.p. Daimler.
 Roger H. Fuller 16-h.p. Napier.
 Walter G. Wilson 10-h.p. Wilson-Pilcher.
 — Ochs 16-h.p. Napier.

CLASS G.—Steam Tourist Cars costing not more than £800, to carry full complement of passengers.

Name.	Car.
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J. W. H. Dew 6-h.p. Gardner-Serpollet.

CLASS H.—Racing Cars weighing less than 650 kilos. (12 cwt. 3 qrs. 5 lbs.)

Name.	Car.	Name.	Car.
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W. J. Crampton Decauville. R. Jackson 24-h.p. Buchet.
 E. Brun 20-h.p. Prunel. Earl Shrewsbury 40-h.p. Clement.
 E. Brun 12-h.p. Villain. H. Hewetson 60-h.p. Parsifal.

CLASS J.—Racing Cars weighing not more than 1,000 kilos. (19 cwt. 3 qrs. 20 lbs.)

Name.	Car.	Name.	Car.
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S. F. Edge 40-h.p. Napier. W. D. Fair 100-h.p. Gobron-Brillié.
 S. F. Edge 40-h.p. Napier. A. Turckheim 45-h.p. De Dietrich.
 G. Higginbotham 60-h.p. Mercedes. Hon. C. S. Rolls Madrid Type Panhard.
 E. Campbell Muir 60-h.p. Mercedes. Earl Shrewsbury 80-h.p. Panhard.
 Hermann Goldschmidt 24-h.p. Pipe. H. Austin 45-h.p. Wolseley.
 Charles Jarrott 40-h.p. Napier. Lt. Mansfield 50-h.p. Wolseley.
 C. Cordingley 40-h.p. Mercedes. Cumming 60-h.p. Mercedes.
 C. Cordingley Star Racer. C. G. Dinsmore 60-h.p. Mercedes.
 Baron de Forest 70-h.p. '03 Mors.

CLASS K.—Scratch Race for the "Daily Mail" 100-Guinea Challenge Cup, which will be presented to the fastest car, weighing under 1,000 kilos., over the flying kilometre, irrespective of whether the successful car be driven by steam, electricity, petrol, or other motive power, provided it covers the kilometre in under 40 secs., equal to 90 kilometres, or 55·9 miles per hour. The cup to become the property of the member of an automobile club, whose car or cars may win it two years in succession.

Name.	Car.	Name.	Car.
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J. E. Hutton 60-h.p. Mercedes. R. Jackson 24-h.p. Buchet.
 S. F. Edge 40-h.p. Napier. W. D. Fair 100-h.p. Gobron-Brillié.
 S. F. Edge 40-h.p. Napier. A. Turckheim 45-h.p. De Dietrich.
 G. Higginbotham 60-h.p. Mercedes. Hon. C. S. Rolls Madrid Type Panhard.
 E. Lamberbeck 80-h.p. Panhard. Earl Shrewsbury 80-h.p. Panhard.
 E. Campbell Muir 60-h.p. Mercedes. H. Austin 45-h.p. Wolseley.
 Charles Jarrott 40-h.p. Napier. Lt. Mansfield 50-h.p. Wolseley.
 G. H. Olliver 40-h.p. Gardner-Serpollet. Cumming 60-h.p. Parsifal.
 C. Cordingley 40-h.p. Mercedes.
 C. Cordingley Star Racer.
 Baron de Forest 70-h.p. Mors.

CLASS L.—Scratch Race for the Autocar Challenge Cup.—Race for motor-vehicles of any power or weight propelled by any form of motive power (as described under Class L). Open to vehicles which are also running in any other classes.

Name.	Car.	Name.	Car.
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J. E. Hutton 60-h.p. Mercedes. W. D. Fair 100-h.p. Gobron-Brillié.
 S. F. Edge 40-h.p. Napier. A. Turckheim 45-h.p. De Dietrich.
 S. F. Edge 40-h.p. Napier. Hon. C. S. Rolls Madrid Type Panhard.
 G. Higginbotham 60-h.p. Mercedes. Earl Shrewsbury 80-h.p. Panhard.
 E. Campbell Muir 60-h.p. Mercedes. H. Austin 45-h.p. Wolseley.
 Charles Jarrott 40-h.p. Napier. Lt. Mansfield 50-h.p. Wolseley.
 E. Lamberbeck 70-h.p. Car. Cumming 60-h.p. Parsifal.
 C. Cordingley 40-h.p. Mercedes.
 C. Cordingley Star Racer.
 Baron de Forest 70-h.p. Mors.
 R. Jackson 24-h.p. Buchet.

The winner will receive and become the holder of the cup, provided that if there are not three starters, the kilometre is covered in not more than 40 secs., equal to 55 miles per hour. The cup becomes the property of the owner of the car winning it two years in succession, or three times in all. Present holder: C. Jarrott.

CASTLEWELLAN HILL CLIMB.

On Tuesday, the 7th inst., the second part of what is called the "Irish Fortnight" opens with a hill-climbing competition on Ballybannon Hill, at Castlewellsan, and a race from Clough into Castlewellsan. The hill is about one mile in length on one side, with a rise of 300 feet. The climbing test will start from Murland's Factory, at the foot or middle of the two hills, and the cars make the best speed they can up past Ardnabannon House towards Clough. At a mark on the top of the hill the times will be taken, and the cars then pass on at their leisure to Clough, where they will be marshalled for the race back in the afternoon. The attention of visitors is called to the fact that the road from Clough to Castlewellsan will be closed to all traffic from 10 a.m. until the races are finished.

CLASS A.—Motor-cycles up to and including 114 lbs. (Four Miles Speed Trial.)

Name.	Machine.	Name.	Machine.
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E. H. Arnott Werner. Sir C. Kennard Werner.
 T. Silver Quadrant. J. F. Crundall Humber.
 R. Samson Quadrant. Sam Wright Excelsior.
 J. Van Hooydonk Phoenix. A. C. Wright Ormonde.
 Harry Martin Excelsior. H. C. Hacking Ormonde.
 T. H. Wallen Triumph. Henry W. Stones Rex.

CLASS B.—Motor-cycles up to and including 170 lbs. (Four Miles Speed Trial.)

Name.	Machine.	Name.	Machine.
E. H. Arnott	Werner.	Harry Martin	Excelsior.
Capt. L. E. Kennard	Clyde.	J. F. Crundall	Humber.
W. Weekes	Crypto.	Sam Wright	Excelsior.
J. Van Hooydonk	Phoenix.	Riley Cycle Co.	Royal Riley.
L. R. Oswald.	Excelsior.	Riley Cycle Co.	Royal Riley.
Sealy		Riley Cycle Co.	Royal Riley.
		L. B. Tucker	Rex.

OPEN EVENT—HILL-CLIMBING CONTEST.

CLASS A.—Motor-cycles up to and including 114 lbs.

Name.	Machine.	Name.	Machine.
E. H. Arnott	Werner.	J. Van Hooydonk	Phoenix.
H. Samson	Quadrant.	A. C. Wright	Ormonde.
T. H. Wallen	Triumph.	H. C. Hacking	Ormonde.
P. J. Dempsey	Triumph.	Henry W. Stones	Rex.
E. H. Lancaster	Ormonde.		

CLASS B.—Motor-cycles up to and including 170 lbs.

Name.	Machine.	Name.	Machine.
E. Perks	Singer.	Sam Wright	Excelsior.
W. Weekes	Crypto.	Riley Cycle Co.	Royal Riley.
L. R. Oswald.	Excelsior.	Riley Cycle Co.	Royal Riley.
Sealey		Riley Cycle Co.	Royal Riley.
Harry Martin	Excelsior.	L. B. Tucker	Rex.
J. F. Crundall	Humber.		

TOURISTS' SECTION—THE GRAPHIC TROPHY.

CLASSES D, E, and G.—Tourist Cars costing over £300, but not more than £1,000, to carry four people, and Steam Tourist Cars costing not more than £800, to carry full complement of passengers.

HANDICAP RACE.—Distance about four miles (from Clough to Castlewellan). The cars eligible for competing for the Graphic Trophy must be ordinary tourists' cars of any make, English or foreign, carrying four passengers, including the driver, and over the value of £300, but under the value of £1,000. The trophy shall become the property of a competitor who wins it three years in succession, but until so won shall remain in the custody of the Automobile Club of Great Britain and Ireland, who may exhibit it where they please.

CLASS D.

Name.	Car.	Name.	Car.
Sir J. L. Thornycroft	20-h.p. Thornycroft.	Capt. Neil Haig	16-h.p. Boyer.
H. du Cros, Junr.	12-h.p. Ariel.	Prof. H. S. Hele-Shaw	24-h.p. Darracq.
W. Lecoq	10-h.p. Renault.	E. M. C. Instone	12-h.p. Belgica.
J. T. Overton	24-h.p. Georges-Richard.	G. E. B. Pritchett	12-h.p. Meteor.
Frank Atherley	12-h.p. Magnet.	A. G. Stevenson	20-h.p. Thornycroft.
J. Lisle	10-h.p. Light Star.	Hermann Goldschmidt	15-h.p. Pipe.
E. Brun	12-h.p. Prunel.	James Wilson	18-h.p. Elswick.
H. Belcher	12-h.p. Humber.	H. Austin	12-h.p. Wolseley.
R. W. Buttemer	10-h.p. Decauville.	A. E. Crowdy	24-h.p. Wolseley.
Alfred Burgess	10-h.p. M.M.C.	Chs. Baker	20-h.p. Dennis.

CLASS E.

Name.	Car.	Name.	Car.
G. Cornwallis-West	20-h.p. Brush.	Willard Ewart-Hall	15-h.p. C.G.V.
H. du Cros, Junr.	20-h.p. Ariel.	Edward Kennard	12-h.p. Napier.
J. W. Cross	20-h.p. Humber.	W. J. Crampton	16-h.p. Decauville.
Hon. John Scott	22-h.p. Daimler.	Frank Barbour	10-h.p. Panhard.
E. Manville	22-h.p. Daimler.	George Iden	20-h.p. M.M.C.
E. M. C. Instone	22-h.p. Daimler.	Alfred Burgess	20-h.p. M.M.C.
F. R. S. Bircham	—	Lawrence Vickers	15-h.p. C.G.V.
		Walter G. Wilson	10-h.p. Wilson-Pilcher.

CLASS G.

Name.	Car.
J. W. H. Dew	6-h.p. Gardner-Serpolist.

RACING SECTION.

CLASS H.—Racing Cars weighing less than 650 kilos. (12 cwt. 3 qrs. 5 lbs.). (Distance about four miles.)

Name.	Car.	Name.	Car.
W. J. Crampton	Decauville.	R. Jackson	24-h.p. Eagle.
E. Brun	12-h.p. Villain.	H. Hewetson	60-h.p. Parsifal.
E. Brun	12-h.p. Villain.		

CLASS J.—Racing Cars weighing not more than 1,000 kilos. (19 cwt. 3 qrs. 20 lbs.)

Name.	Car.	Name.	Car.
J. E. Hutton	60-h.p. Mercedes.	E. Brun	40-h.p. Prunel.
S. F. Edge	40-h.p. Napier.	W. D. Fair	100-h.p. Gobron-Brillie.
S. F. Edge	40-h.p. Napier.	A. Twickheim	45-h.p. De Dietrich.
G. Higginbotham	60-h.p. Mercedes.	Hon. C. S. Rolls	Paris-Madrid Panhard.
E. Campbell Muir	60-h.p. Mercedes	H. Austin	45-h.p. Wolseley.
Hermann Goldschmidt	24-h.p. Pipe.	Lieut. Mansfield	50-h.p. Wolseley.
Charles Jarrott	40-h.p. Napier.	Cumming	
C. Cordingley	Star Racer.		
C. Cordingley	40-h.p. Mercedes.		
E. Brun	40-h.p. Prunel.		

OPEN EVENT, for any car, irrespective of weight, which is driven by a spirit internal combustion engine.

HENRY EDMUNDS BRONZE TROPHY.

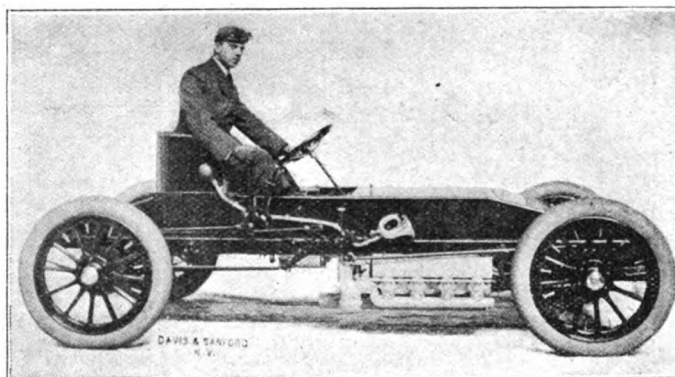
HILL-CLIMBING COMPETITION.—Distance about 1,200 yards. It will be run on the hill running from the Mill in the valley at Castlewellan towards Clough, the cars to start from rest on the flat not more nor less than 100 yards from the beginning of the ascent, and the finishing post to be on rising, not level, ground.

CLASS C.—Tourist Cars costing £300 or under, which need not carry more than two people.

Name.	Car.
Henry Sturmeay	10-h.p. Duryea.

CLASS D.—Tourist Cars costing over £300, but not more than £650, to carry four people.

Name.	Car.	Name.	Car.
A. G. Stevenson	20-h.p. Thornycroft.	Hermann Goldschmidt	12-h.p. Magnet.



Percy Owen on his Winton Four-Cylinder Racer.

CLASS E.—Tourist Cars costing over £650, but not more than £1,000, to carry four people.

Name.	Car.	Name.	Car.
H. Du Cros, Junr.	20-h.p. Ariel.	E. M. C. Instone	22-h.p. Daimler.
Hon. John Scott	22-h.p. Daimler.	Frank Atherley	15-h.p. Pipe.
Montagu			
E. Manville	22-h.p. Daimler.		

CLASS F.—Tourist Cars costing over £1,000, to carry four people.

Name.	Car.	Name.	Car.
John Hargreaves	20-h.p. Napier.	H. G. Burford	24-h.p. Mercedes.

CLASS H.—Racing Cars weighing less than 650 kilos. (12 cwt. 3 qrs. 5 lbs.).

Name.	Car.	Name.	Car.
W. J. Crampton	Decauville.	H. Hewetson	60-h.p. Parsifal.
R. Jackson	24-h.p. Buchet.		

CLASS J.—Racing Cars weighing not more than 1,000 kilos. (19 cwt. 3 qrs. 20 lbs.).

Name.	Car.	Name.	Car.
J. E. Hutton	60-h.p. Mercedes.	W. D. Fair	100-h.p. Gobron-Brillie.
S. F. Edge	40-h.p. Napier.	A. Twickheim	45-h.p. de Dietrich.
S. F. Edge	40-h.p. Napier.	Hon. C. S. Rolls	Paris-Madrid Panhard.
G. Higginbotham	60-h.p. Mercedes.	H. Austin	45-h.p. Racer.
E. Campbell Muir	60-h.p. Mercedes.	Lt. Mansfield	50-h.p. Wolseley.
Claude Watney	24-h.p. Pipe.	Cumming	
Charles Jarrott	40-h.p. Napier.	C. Gray Dinsmore	60-h.p. Mercedes.
C. Cordingley	40-h.p. Mercedes.		
C. Cordingley	Star Racer.		

THE TRIALS AT CORK.

On the 10th inst. there will be a series of speed trials on the Carrigrohane road, Cork. The following are the entries:—

TOURIST SECTION—OPEN HANDICAP (Distance about two miles).

CLASS C.—Tourist Cars costing over £300 or under, which need not carry more than two people.

Name.	Car.
Alfred Burgess	8-h.p. M.M.C.

CLASS D.—Tourist Cars costing over £300, but not more than £650, to carry four people.

Name.	Car.	Name.	Car.
H. Du Cros, jun.	12-h.p. Ariel.	E. Brun	12-h.p. Prunel.
W. Lecoq	10-h.p. Renault.	H. Belcher	12-h.p. Humber.
R. M. Leader	16-h.p. Century	Alfred Burgess	10-h.p. M.M.C.
J. T. Overton	24-h.p. Georges Richard.	Pro. H. S. Hele.	24-h.p. Darracq.
Frank Atherley	12-h.p. Magnet.	E. M. C. Instone	12-h.p. Belgica.
J. Lisle	10-h.p. Light Star.	H. Austin	12-h.p. Wolseley.
		A. E. Crowdy	24-h.p. Wolseley.

CLASS E.—Tourist Cars costing over £650, but not more than £1,000, to carry four people.

Name.	Car.	Name.	Car.
H. Du Cros, jun.	20-h.p. Ariel.	F. R. S. Bircham	—
J. W. Cross	20-h.p. Humber.	Williard Ewart-	15-h.p. C.G.V.
Hon. John Scott	22-h.p. Daimler.	Hall.	
Montagu.		Edward Kennard	12-h.p. Napier.
E. Manville	22-h.p. Daimler	George Iden	20-h.p. M.M.C.
E. M. C. Instone	22-h.p. Daimler	Alfred Burgess	20-h.p. M.M.C.
Hermann Gold-	15-h.p. Pipe.	Lawrence Vickers	15-h.p. C.G.V.
schmidt.			

CLASS F.—Tourist Cars costing over £1,000, to carry four people.

Name.	Car.	Name.	Car.
John Hargreaves	20-h.p. Napier.	Alfred Gold-	24-h.p. Pipe.
H. G. Burford	24-h.p. Mercedes.	schmidt.	
		A. Macdonald	22-h.p. Daimler.

CLASS G.—Steam Tourist Cars costing not more than £800, to carry full complement of passengers.

Name.	Car.
J. W. H. Dew.	6-h.p. Gardner Serpollet.

RACING SECTION—OPEN HANDICAP (Distance about two miles.).

CLASS H.—Racing Cars weighing less than 650 kilos. (12 cwt. 3 qrs. 5 lbs.)

Name.	Car.	Name.	Car.
E. Brun	20-h.p. Prunel.	R. Jackson	24-h.p. Buchet.

CLASS J.—Racing Cars weighing not more than 1,000 kilos. (19 cwt. 3 qrs. 20 lbs.).

Name.	Car.	Name.	Car.
J. E. Hutton	60-h.p. Mercedes.	E. Brun	40-h.p. Prunel.
S. F. Edge	40-h.p. Napier.	W. D. Fair	100-h.p. Gobron-
S. F. Edge	40-h.p. Napier.	Brillie.	
G. Higginbotham	60-h.p. Mercedes.	A. Turekheim	45-h.p. de Diet-
E. Campbell Muir	60-h.p. Mercedes.	rich.	
Hermann Gold-	24-h.p. Pipe.	Hon. C. S. Rolls	Madrid Type
schmidt.		Panhard.	
Charles Jarrott	40-h.p. Napier.	H. Austin	45-h.p. Wolseley.
C. Cordingley	40-h.p. Mercedes.	Lt. Mansfield	50-h.p. Wolseley.
C. Cordingley	Star Racer.	Cumming.	

A DRUNKEN DRIVER COMMITTED FOR TRIAL.

At the South-Western Police Court last week, Alfred Field, a motor-car driver, in the service of Mr. Rudolph Mayer, was brought up, on remand, charged with being drunk during his employment, and causing serious bodily harm to William Bettsworth. Mr. George Bell defended, while Mr. J. Duncan held a watching brief. The injured man attended the court for the first time since the occurrence, and he limped into the witness-box with the aid of a stick. He stated that on the evening of the 8th ult. he was training for a long-distance walk, and while proceeding along the Clapham Road with two cyclists he was knocked down from behind by the motor-car and dragged along for several yards. Evidence was given to prove that the prisoner with his car travelled at the rate of twelve miles an hour, and his approach was not signalled in any way. He was found to be in a drunken condition. Mr. Lane dealt with the prisoner summarily for the drunkenness, and imposed a nominal penalty of 1s. For causing bodily harm he committed him for trial, remarking that the injured man had had a providential escape.

THE EDINBURGH MOTOR CAR FATALITY.

At a pleading diet of Edinburgh Sheriff Criminal Court last week, Alexander Mack was charged with having on 23rd May, in Dalry Road, Edinburgh, being in charge of a motor-car, driven the car against Elizabeth Henderson, and killed her. Accused, who pleaded not guilty, was committed for trial.

CORRESPONDENCE.

PERNICIOUS TIPPING.

TO THE EDITOR OF *The Motor Car Journal*.

SIR,—“That’s a very satisfactory job,” and I was honestly grateful to the workmen who had done it. I tipped them. That was in my green days. Let gentlemen by all means pay a good price for good work, but let it be to the repairer himself who is employed. It is a most pernicious thing to tip workmen. I have known tips given, and subsequently the work was found imperfectly done, and it had to be done over again. But pay a good price to the repairer himself, and rely on him to see that work is done which may not expect further “tipping.” No doubt accidents have happened and motoring given up by some who found that for some reasons it was troublesome. But eliminate absurd interested customs, and there is no reason why cars should not go as satisfactorily as carriages. I say nothing about racing motors.—Yours faithfully,

J. C.

TREMBLER COILS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If, as your correspondent, Mr. A. J. Cary, states, a non-vibrating coil will work satisfactorily with wipe contact breaker this should be very interesting indeed to your readers, as it enables them to dispense with the troublesome trembler. Independent of dispensing with a lot of worry they would also save money. One of the principal objects of the wipe contact and vibrating trembler is to give ease in starting the engine, the result of using this contact being that one gets a series of sparks instead of one only. How does your correspondent get along with starting? Can he run his engine slowly? Presuming he is mounting a hill and has to pull his engine up for some cause or other, will it take up again?—Yours faithfully,

JOHN CHILD MEREDITH, LTD.

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—“Mr. Nixon’s” letter only shows what croneous conclusions can be drawn from racing results. Messrs. Panhard and Levassor’s cars were more or less a failure in the Paris-Madrid, it is true, but to conclude from that that “for all cars an absolutely vertical engine is a necessity” is absurd. What Messrs. Panhard doubtless have discovered is that, for the hybrid position of engine adopted by them in the race in question, they have not yet got their lubrication system right. In other words, that what will do for an engine in one position will not do for it in another, and that it is not merely sufficient to adapt the same lubrication system as before when circumstances are altered. But it should not have required the expenditure of £30,000 and participation in a holocaust to show them that. Before Mr. Nixon condemns horizontal or inclined engines, let him note the performance of the Winton cars in the Gordon Bennett race—which will be over before this appears. These have eight cylinders to deal with instead of four, and if they get through without lubrication trouble, and more especially if one of them wins, which is quite within the bounds of possibility, we should be justified, on the basis of Mr. Nixon’s argument, in saying that “for all cars horizontal engines are a necessity.” But we should not think of doing anything of the kind. We should simply say that, whereas Panhard had his lubrication wrong, Winton had got it right, and that, all other things equal, one position is as good as another. Again, what about the Wolseleys in the Paris-Madrid? Although they met with accidents, they had no lubrication troubles on their fully horizontal engines, which simply proves what we said above, that it was Panhard’s lubrication system that was wrong, and not their engine position. So much for the lesson Mr. Nixon has learned from the race.

We would like to ask Mr. Nixon for his proof, that without racing “we would still have 8-h.p. cars weighing a ton, with fifteen miles top speed, tube ignition, solid tyres, tiller steering, &c.” This is merely assertion. Does Mr. Nixon think that without racing cars, constructors would have stood still? Not a bit of it. The 40 to 100-h.p. absurdities—which are absolutely useless from the tourist’s point of view—would not, perhaps, have been seen; but as the legitimate demand for higher power and for more satisfactory ignition, &c., has from the first been strong; the natural prize of good business following improved results would have got us very much to the same position as we are in to-day, if, indeed, we should not have improved upon it, because the trade would have been freer to follow the bent of its own initiative, instead of having felt bound more or less to follow in the ruts cut out by the racing vehicle. As an example, three cylinder non-vibrating engines, direct drive on top gear, throttle control, and silent exhaust, have been features of our cars since 1895 and earlier, but they attracted no general attention, and were ignored by the trade till a few months since, when some of the leading makers of racing machines adopted one or other of them, and now everyone is following suit. These, especially the three last, are all features of value, especially to the tourist and general car user, but their wider use and more general adoption have been absolutely held back by racing, for they were undoubtedly ignored at first because they were not features of the racing machines.

Doubtless, had we cared to spend an odd £100,000 or two in building racing cars, and racing them all over the world, we could have "rubbed in the ointment" sufficiently for some of it to have stuck before now, but as we did not do this, the automobile public generally has been, until quite recently—for six or seven years, in fact—deprived of the advantages of these features. That is what racing has done for us, and the only features it has encouraged are those of power and pace, and these have been developed abnormally until they have become man's master instead of his slave.—Yours truly,

THE DURYEA MOTOR-CARRIAGE COMPANY.

MOTOR BOAT RACE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Though not a member of the Marine Motor Association, I would like, as a user of a steam launch, to protest against limiting the number of hands on each boat to two, which I understand will be the case in connection with the forthcoming International race of motor-boats. I do not know whether it is the intention of the organisers to debar steam launches from running in this race, but I should say this will be the effect of the rule, for it is always customary in fast launches to have three men on board, viz., one for stoking, one for driving, and one for steering, and I see no reason why steam launches should thus be handicapped in favour of petrol.—Yours truly,

CHAS. S. ROLLS.

MESSRS. JONES AND CO., of Lichfield, write:—"At about 9.20 a.m., on Saturday last, a motor-car, with a white or cream tonneau body, mounted the footpath and knocked down some iron railings at the house of Mr. H. M. Morgan, in Saint John Street, Lichfield. One of the party dismounted and picked up something from the wreckage, from the near side of the car, and drove on their journey north, passing through Rugeley in about 20 minutes afterwards. The car was fitted with non-skidding tyres, with hollow places moulded across every few inches. Mr. Morgan called here with reference to the matter, and is naturally much annoyed, especially as they neither apologised nor left their card."

CLUB NEWS.

NORTH-EAST LANCASHIRE.

MOST unfavourable climatic conditions prevailed on the 20th ult., when the motor-run arranged by the North-East Lancashire Automobile Club took place, but seven cars were brought to the starting-point, Blackburn, notwithstanding. Occasionally there was some good running, but the disagreeable weather and the bad state of the roads interfered largely with the enjoyment of the ride, so that several of the members fell out on the way. Three cars reached the Grand Hotel, Morecambe, the appointed destination.

EASTERN COUNTIES' AUTOMOBILE CLUB.

ON Saturday last the Eastern Counties' Automobile Club had a run to Saxmundham. The first car to arrive at Wickham Market, the starting point, was a 13-h.p. Primus, driven by Mr. J. R. Egerton, of Ipswich. After this the other cars arrived quickly, until, besides the one mentioned, there were present—Dr. and Mrs. Rowe, of Ipswich, in their 5-h.p. Peugeot; Mr. G. V. Milbank, 6-h.p. De Dion; Major R. J. Carthew, 10-h.p. Wolseley; Mr. and Mrs. A. Hackblock, Delahaye; Mr. C. D. Castell, 10-h.p. Rex; Mr. H. Blomfield, 10-h.p. Boyer; and Mr. R. Page, 7-h.p. Panhard. Two motor-bicycles—one a Rex, ridden by Dr. Longworth, and a Bat, ridden by Mr. Lionel Vulliamy, completed the turn-out. After a short stay, caused by a punctured tyre, the start was made just after four o'clock for Saxmundham. There were no adventures by the way, and arriving at Saxmundham, everything was found prepared for the party. After tea many of those present spent a short time looking around the town, and afterwards started on the homeward journey.

THE NORFOLK AUTOMOBILE CLUB.

THE Norfolk Automobile Club had another meet on Tuesday last week, the venue being Eaton Grove, at the invitation of Mr. and Mrs. J. J. Dawson Paul, who had made every arrangement for the reception of a large gathering. Fortunately the weather was delightful, the charming grounds looked their best, and everything passed off with the greatest possible success. The party included Mr. J. J. Dawson Paul, 16-h.p. Napier; Baron and Baroness de Barretto, 20-h.p. Wolseley; Mr. and Mrs. C. Pearse, Dereham, Eagle motor-tandem; Mr. J. W. Howlett, Ariel tricycle; Mr. Harold Chamberlin, Yarmouth, 10-h.p. Brooke; Mr. and Mrs. W. R. Spelman, 6½-h.p. De Dion; Mr. and Mrs. H. L. Clark, 6½-h.p. De Dion; Mr. Ray, 5-h.p. Benz; Mr. and Mrs. P. Norgate, 4½-h.p. Eagle; Mr. and Mrs. Bradley, 7-h.p. Daimler; and Mrs. Rudd, Yarmouth, 4½-h.p. De Dion; Mr. de Poix, 7-h.p. Daimler; Dr. Perry, Reepham, 5-h.p. Wolseley; Rev. J. A. L. Fellowes, Bunwell, 3½-h.p. Benz; Mr. J. A. Mills, 10-h.p. Gladiator; Mr. G. N. C. Mann, 12-h.p. Gladiator; Mr. Estcourt, 14-h.p. Brooke; Mr. Garland, 4½-h.p. De Dion-Bouton; Mr. Griffin, 6-h.p. Daimler; Mr. and

Mrs. Francis Hornor, 10-h.p. Gladiator; Mr. Hubert Egerton, 6-h.p. De Dion; Mr. Walter Crawshaw, 14-h.p. Brooke; Mr. Williams, 4½-h.p. De Dion; Mr. H. Watts, 12-h.p. Daimler; Mr. T. Inglis Goldie, 6-h.p. De Dion; Mr. and Mrs. G. Sillem, 6-h.p. De Dion; Dr. and Mrs. Burton Fanning, 8-h.p. De Dion. A meeting of the Town Council prevented the attendance of the President of the club (Mr. G. M. Chamberlin). The members passed a very enjoyable time in exchanging opinions and experiences on the merits of the cars ranged on the lawn.

KENT AUTOMOBILE CLUB.

THE Kent Automobile Club, which, although only started a month ago, now boasts of over 100 members, had their first run to Gravesend on Saturday last, to accept the invitation of their Chairman and Mrs. Firth to tea. The weather was all that could be desired, and quite fifty members and guests assembled in the beautifully-shaded garden of their host. After spending a most enjoyable afternoon they departed on their homeward journey. The following members were present:—Dr. Firth (chairman), 8-h.p. Lucas; Mr. Skudder, 9-h.p. Darracq; Mr. Gardner, 15-h.p. Panhard; Dr. Smith, 4½-h.p. Benz; Mr. Hart, Daimler; Mr. Firth, 3½-h.p. Benz; Mr. Nash, 8-h.p. De Dion; Mr. Day, 6-h.p. De Dion; Rev. Cotton, 9-h.p. Napier; Mr. Hearn, 10-h.p. Clement; Dr. Dowding (hon. sec.) 8-h.p. De Dion; Mr. Morgan, New Orleans; Mr. Hall, 24-h.p. Darracq; Mr. Kenyon, 10-h.p. Panhard; Mr. Fraser, 6-h.p. De Dion; Mr. Gooch, 6½-h.p. Gladiator; Mr. Eagleton, Locomobile; Mr. Keetley, 9-h.p. Darracq; Mr. Shrubsole, 2½-h.p. Excelsior bicycle. The next meet will be at Lamberhurst to-day (Saturday).

POLICE TRAPS.

THE police have a measured quarter-mile at Standerwick, near Bristol. A MEASURED quarter-mile is marked out at Balls Hut, near Arundel, Sussex.

THE police have a measured distance 350 yards long at Wrotham, Kent.

MOTORISTS had better be careful in the Crowborough district, as the police are assuming a "warlike attitude."

THE Blackburn police have just secured their first conviction for furious driving, by means of a measured 740 yards.

A MEASURED half-mile at Eggborough, on the Selby to Doncaster road, has resulted in two furious-driving cases at Snaith.

A BATH correspondent has sent us the following telegram:—"Measured distance between 1½ and 2 miles from Bath on Upper Bristol road."

THE five cases at the Coleshill Police Court are the result of a measured quarter mile between Meriden Village and the Archery Ground, and a measured half-mile at Bickenhill.

A POLICE trap (East Sussex police), with electrical timing apparatus, was set up on Saturday last between Crowborough Beacon and the Crow and Gate public-house (Tunbridge Wells-Lewes main road). The actual trap is between the Crow and Gate and Sweet Hawsham.

THERE is a measured quarter-mile on the Oxford road in the wood one mile the Henley side of Nettlebed. The police have also a measured quarter-mile in the dip between Nettlebed and Nuffield, on the same road as above. There is also a measured distance on the London and Oxford road, via Wycombe, at the bottom of the hill the Oxford side of Stokenchurch by the Lambert Arms Inn.

BRINGING A CAR FROM THE CONTINENT.

IN the King's Bench Division, last week, before the Lord Chief Justice, the case of *Du Cros v. J. G. Smith and Company* was heard. This was an action for damage done to a motor-car. Mr. Schiller, who appeared for the plaintiff, said that the action was brought by Mr. Du Cros for damage done to his motor-car when it was being carried from Ostend to Dover. The defendants carried on business as a parcels express company, and Smits, the plaintiff's mechanic, delivered the car to them at Ostend for carriage to Dover. Smits crossed in the same boat, and when the car was being brought ashore at Dover the chute gave way and caused the damage in question. Smits gave evidence in support of counsel's opening.

The Lord Chief Justice, in giving judgment, said that the defendants were undoubtedly common carriers, and were responsible unless they could show that the damage was caused solely by the act of the mechanic. In his opinion, the chutes were not in a fit and proper condition for the disembarkation of the motor-car. There was negligence on the part of the defendants' servants in attempting to disembark the car without proper apparatus for the purpose, and his Lordship gave judgment for the plaintiff for the agreed amount of damages, £25.

REFUSING TO STOP.

LIEUTENANT J. L. P. RADCLIFFE, of the 5th Royal (Irish) Lancers, was last week fined £10 at the Ware Police Court for not stopping a motor-car when called upon to do so by a constable. He was also summoned for driving beyond the speed limit, but no conviction was recorded on that charge. The defendant did not appear, but sent a message saying that he would be in Ireland.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Wokingham	Capt. A. Hill, M.P., Bracknell	17	£10, etc.
"	V. Kerseyner, London, W.	21	£10, etc.
"	C. M. Rose, Taplow	—	£5, etc.
Alton	E. White, Southsea	—	£2.
"	R. Foster, Netley Hospital	—	£2.
Norman Cross	Dr. Shaw, London	20	£10.
"	C. Clench, Harleston	—	£6.
"	H. E. Hughes	—	£4.
Southampton	G. Dickson, Hollybrook	—	£2, etc.
Retford	T. Carpenter, Worksop	—	£10, etc.
Blofield	F. Aldridge, Newmarket	—	£1.
"	Cuthbert Laws, Ware	18	£1, etc.
Steyning	*G. H. Spicer, Leamington	28	£2 8s.
Penzance	E. J. Lorginotto	—	£2 2s., etc.
Poole	G. H. Cox, Southsea	—	£3 3s., etc.
Altrincham	C. H. Stocks, Chorlton-cum-Hardy	—	£2, etc.
"	R. E. Lowe, Sale	20-25	£5, etc.
Harrogate	*J. Kavanagh, Harrogate	18	5s., etc.
Battle	J. H. Cooper, Chislehurst	26	£3, etc.
"	W. S. Brindale, Tunbridge Wells	23½	£3, etc.
"	*J. S. Wallis, St. Leonards	25	£2, etc.
"	C. Crutenden (driver to Earl de la Warr)	25	£3, etc.
"	E. Thomas, Brockley	25	£3, etc.
Towcester	L. G. Schwabe, Altrincham	25	£2 10s., etc.
Newbury	Miss de Montgeon, Badminton	25	£5, etc.
"	*Smith Barry, Eton	25	£2 10s., etc.
Birmingham	Frank Lanchester	15-20	£3, etc.
Newbury	F. Steagwald, London	58	£10, etc.
"	C. Pearce, Newbury	16	10s., etc.
Colleshill	A. G. Asbury, Beeton	26½	£2, etc.
"	G. Street, Coventry	25	£3, etc.
"	*F. Griffin, Earlsdon	26½	£2, etc.
"	*E. Mayo, Coventry	30	£2, etc.
"	*F. J. Harker, Coventry	—	Dismissed
Arundel	H. V. Holden	26	£5, etc.
Snaith	*E. W. Leather	23½	£3.
"	W. Newton, Newcastle-on-Tyne	18	£5.
Bromley	*H. Beadle, Gravesend	22	£1, etc.
Malling	W. Ransom	19	£3, etc.
Leek	G. Higginbotham, Macclesfield	—	£1, etc.
Bath	W. Whiting (driver to H. Stone)	20	Dismissed.
"	*Dr. E. White	—	£3.
"	*P. Grocher	30	£1.
"	*G. H. Gunstone	—	£1.
"	*R. H. Pearson	—	£1.
"	*G. Phillips	—	£1.
"	*J. Melhuish	—	£1.
Blackburn	A. Hitchon	23	£5, etc.
Alcester	*M. Type, Moseley	22½	£1, etc.
"	H. B. Graham, Moseley	20	£1, etc.
Ely	G. F. Emrys-Jones	25	£5, etc.
Bedford	*E. J. Wrigley, Bedford	20	£2 10s., etc.
"	*E. J. Wrigley, Bedford	30	£2 10s., etc.
Guildford	F. Campbell Muir	16	£2.
Winchester	R. G. Cross, Petersfield	—	£1, etc.
"	A. Morris, London, W.	27	£3, etc.
"	A. E. Carter, Fordingbridge	30	£3, etc.
"	*A. Keeping	21	Dismissed on payment of costs.
Epsom	*G. H. Smith, Wallington	19	£1, etc.
Bangor	Rt. Hon. Horace C. Plunkett	40-50	£5.

Where no alleged speed is given it is understood to be above the legal limit.
 * Motor-Cycle Cases.

COMMISSION ON SALES.

THE Court of Session action has been settled in which Thomas Richards Bradshaw, Dublin, sued the Hozier Engineering Company, Bridgeton, for three sums amounting in all to £181 18s., and alleged by the pursuer to be due him as commission on the sales of certain motor-cars effected by the defenders. The pursuer averred that in July, 1901, he entered into an agreement with the defenders to act as their agent in Ireland for the sale of Argyll cars. He stated that they sold three cars to gentlemen, not actually through his agency, but that the sales were really due to his having introduced these customers. The defenders denied that there were due to the pursuer the sums sued for, but they have now made him a payment of £120 in full settlement of his claims.

FURIOUS DRIVING CASES.

In the Bristol case against W. G. Crabbe the summons was for exceeding a speed of six miles per hour with a motor-bicycle and trailer.

In the case at Winchester against R. G. Cross, Police-constable Eales stated that the defendant's speed was forty-five miles an hour, but this, the defendant contended, was an impossibility with his 4½-h.p. car.

In the case against G. Dickson at Southampton the Chief Constable said that no one was allowed to go beyond a reasonable speed, and everyone who travelled over ten or twelve miles an hour he would bring before the magistrates.

In fining Mr. Louis G. Schwabe for driving at a speed of twenty-five miles an hour, the chairman of the Towcester Bench said the penalty was small, because defendant stopped when asked and gave his correct name and address. Impudent offenders would receive heavy punishment, which they hoped would be a warning to them.

THE Right Hon. Horace Plunkett, Minister of Agriculture for Ireland, was fined £5 by the Bangor magistrates, on Tuesday, for furiously driving a motor-car between Bethesda and Bangor. A solicitor appearing for him was instructed to admit that the rate exceeded the legal limit, but the defendant denied having driven at a furious pace.

At the Berkshire Petty Sessions at Newbury last week, Franz Steagwald, of Mount Street, Grosvenor Square, W., was fined £10 and costs for driving a motor-car along the Bath road at Midgham at the rate of fifty-eight miles an hour. The Chairman said that the Bench considered this was a bad case, as the car was travelling at the rate of an express train.

On Saturday last the Bath County Magistrates fined five motor-cyclists for furious riding. The penalty of £5 was inflicted upon Dr. Edward White, who did a quarter of a mile on the Warminster Road, which the police had measured, in thirty seconds. Defendant, after being stopped, sat down for two hours warning other cyclists as they came by that the police were there. As a result the police had to give up.

At the Retford Borough Police Court last week Thomas Carpenter was summoned for driving at a speed of more than twelve miles an hour. The Chairman said the Bench were of opinion that the cars were driven through the narrow streets of Retford at a very dangerous rate. It was very difficult to catch them, but when they did they were determined to make an example of them, and the offender in this instance would have to pay a fine of £10 and expenses, which they hoped would be a sufficient warning to him to drive his car at a reasonable rate.

THE police have now turned their attention to the more eastern parts of Sussex. At Whitsuntide five drivers were caught, their speed over a measured furlong having been timed by the electric chronometer. The defaulters were before the Battle Bench of Magistrates last week, when the explanation of the working of the new machine was not the least interesting part of the proceedings. At the request of the Bench the constable showed the Justices the timing apparatus, and explained how one man pressed a button to start the watch going as soon as the motor started the measured furlong, and how another at the other end pressed a button to stop the watch.

RED LIGHTS IN THE REAR.

At the Tonbridge Petty Sessions, Horace Otto Hall, of Tonbridge, was summoned for driving a motor-car without carrying a red lamp behind it, on May 31st.

Police-constable Groombridge deposed to seeing the defendant driving at 10.5 in the evening in question, without the lamp at the rear of his car alight.

Mr. Hall said he borrowed some matches of the landlord of the Dorset Arms, knowing the difficulty of keeping a lamp alight on the rear of the cars. He did not hear any whistling or calling, but got off at the station on his own account to see if the lamp was alight, and was actually lighting it when four policemen came up. He admitted his lamp was out at some part of the time. Defendant was fined 10s. and costs 10s. 1d., and the chairman said that he was mistaken as to the law: it was not necessary to have a lamp attached to the rear of the car. The Clerk: The lamp must show a red light to the rear.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be for the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

THE Motor-Car Journal.

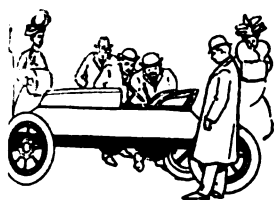
VOL. V.]

LONDON, SATURDAY, JULY 11, 1903.

[No. 227.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE great race is over, and, as would be gleaned from our telegrams of last week, it was a stern contest the weaker competitors being gradually weeded out until one German, three Frenchmen, and an Englishman remained. The absence of Americans amongst the finishing cars has been a great surprise in motoring circles. Their lack of experience in great road races was a factor against their success, while they seemed somewhat careless in their methods of preparation. There was, for instance, a great contrast between the stern measures adopted by the German team in locking up their cars with the mechanics by their side at nights, and those of our cousins from across the Atlantic, as shown in the market place at Naas on the preceding day. Although Jenatzy was the winner, the French are to be congratulated on attaining the second, third, and fourth places, with the result that they have been awarded the team prize offered by the Hon. J. Scott Montagu. Unfortunately even Mr. Edge has been thrown out of the official return, some assistance rendered in pushing the car at Athy having caused the International Commission to withdraw his name from the list of competitors who finished.

Irish Experience.

THE Irish Fortnight is demonstrating as nothing else has shown that motor-cars are not necessarily murderous weapons invading the countryside as with spear and sword. Having regard to the number of motorists in Ireland, and the high power of many of the cars, there should have been scores of deaths and hundreds of injuries. But the death rate has not increased during the tour, nor has any injury been done to pedestrians. It is really because the drivers have been qualified, and have recognised the dangers attaching to heedless driving.

The Irish Trade.

THERE is no doubt that the motor fortnight in the Emerald Isle will give a great impetus to the automobile movement in the country. Soon after the legalisation of automobiles there was a great rush, and, it must be confessed, some very poor machines were sold in Ireland at very good figures. The result was much dissatisfaction and prejudice—even from those who were favourably inclined. Motor-bicycles have, however, maintained their sale. The automobiles now available are, of course, of more reliable calibre, but the newly-created prejudice continues. Many of the Dublin agents complain of a slackness of late, and at least one leading firm is contemplating crossing the Irish Sea to this side unless things brighten considerably. Possibly the effect of the Automobile Fortnight will be in this direction—especially as there has been a marvellous freedom from accident and everything has gone well.

An Echo of the Ardennes.

DURING the Phoenix Park speed trials on Saturday we had a chat with Mr. E. Lisle, who had had a rush from the Circuit des Ardennes to the Gordon Bennett course in Ireland. Comparing the two events, he pointed out that in the former contest speed could be carried right through, but in the Gordon Bennett race the fact that there were seven controls in a course of ninety-three miles considerably reduced the chances of anything like top speed being attained or maintained. We were glad to learn from Mr. Lisle that Mr. Prew, who met with so serious an accident in the Belgian race, is likely to be removed home in about a week from now.

A Club for Bury St. Edmunds.

FOLLOWING upon a preliminary meeting recently held at Higham, when it was decided to form an automobile club for Bury St. Edmunds and district, a meeting of automobilists was held at the Angel Hotel, Bury St. Edmunds, last week, for the purpose of electing officers. Mr. T. Shillitoe (Deputy-Mayor) presided. Mr. C. K. Moseley, hon. secretary of the Eastern Counties Automobile Club (of Ipswich), brought forward a suggestion on behalf of his committee, that the club formed in Bury St. Edmunds be affiliated to the Eastern Counties Club. He stated that when the last-mentioned club was formed in January this year, it was felt that various other automobile clubs would be formed in different districts of the county. It was, however, thought that if these clubs would place themselves under the parentage of the Eastern Counties Club—the affairs of each distinct club, however, being managed by its local committee.—it would be better for all. The Deputy-Mayor thought Mr. Moseley's suggestion was deserving of consideration, and it was decided to defer it to a future meeting. In view of this circumstance, it was agreed also to defer the question of the name of the club. In regard to the presidency, it was decided to ask Lord Iveagh to accept the office. A recommendation from the previous meeting, that the Mayor of Bury St. Edmunds should be Chairman of the Council, was accepted. The following were appointed on the Committee:—Messrs. T. Shillitoe, H. B. Collis, G. S. Cousins, T. H. Nice, and A. E. Stockbridge (Bury St. Edmunds), G. H. Verrall and O. E. Griffiths (Newmarket). Mr. Owen A. Clark was elected hon. treasurer, and Mr. Leofric Hunter hon. secretary. The headquarters of the club are the Angel Hotel.

Trouble at Hythe.

THE public motor-car service between Folkestone and Hythe has met with so much success that last week the Hythe Town Council granted licenses to two additional drivers. Unlike the public, the majority of the council do not, however, approve of the motor vehicles, for at the meeting last week the Mayor expressed the opinion that the motor-cars caused considerable annoyance to the inhabitants, and said that in the future he did not intend to grant any more motor licenses without the sanction of the Town Council, as there were quite sufficient

already. If they allowed such an abominable nuisance to exist, they would not be doing their duty. Notwithstanding the efforts of Councillor White, who pointed out that what has made Hythe was the vehicular traffic, and questioned whether the Council had a right to create a monopoly, a resolution was adopted not to grant any more licenses for public motor-cars.

The Motor-Car Bill.

◆ ◆ ◆
In the House of Lords, on Tuesday, the Secretary for Scotland introduced the long-expected Bill for the regulation of motor-cars. It takes the form of an amendment of the Locomotives on Highways Act, 1896, and its provisions may be summarised as follows:—(1) Cars will be registered under the direction of the county councils and the county borough councils. (2) Each car will be numbered, and will carry a mark indicating the area within which it was registered. Responsibility for the identifying mark being visible at all times is to rest with the driver. (3) Every paid driver must be licensed. No license will be required by other than paid drivers. (4) At present the maximum weight of an unloaded car is three tons. Under the new Act it may be four, or five tons when a trailer is used. (5) As to speed, the present authorised maximum speed will be maintained in urban districts. In rural districts local authorities will be left, under the supervision of the Local Government Board, to fix and proclaim a limit of speed each for itself. (6) The penalty for a first offence will be a fine not exceeding £20, or three months'



The Scene of Jarratt's Accident.

imprisonment. For a second offence the fine may run up to £50, or six months' imprisonment. Magistrates may send offenders to prison without the option of a fine, but the sentence may be appealed against. (7) Any person in charge of a car who is accused of reckless driving and refuses to give name and address, or gives a false name or address, will be guilty of an offence under the Act. The Bill extends to Ireland and Scotland as well as to England.

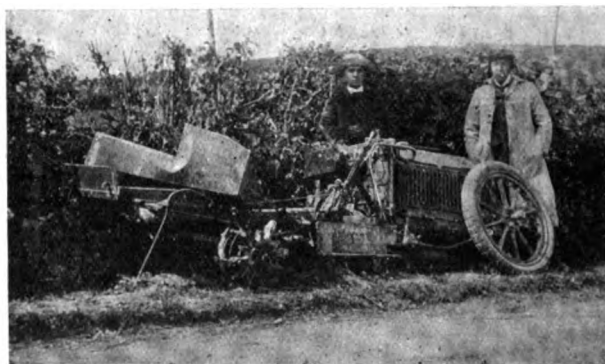
The Provisions of the Bill explained.

◆ ◆ ◆
In introducing the Bill, Lord Balfour of Burleigh said that many representations had been received as to the defectiveness of the existing law. One of the most unsatisfactory features of the present law was that it prescribed one rigid limit of speed utterly irrespective of the circumstances which might obtain in any particular place. Another cause of complaint was that at the present time there was no proper or satisfactory way of identifying the real offenders in many cases. As to the remedy which the Government proposed, the Bill provided that there should be a separate number fixed on each motor-car, as well as a mark indicating the local authority in whose district it was registered. The particular method of fixing the numbers and the details of applying other provisions would be effected by general regulations of the Local Government Board. It was not proposed that the drivers' licences

should be a test or guarantee of skill. There was no security that the most skilful man might not be the worst offender, because, relying on his skill, he took risks which a less skilful man would not venture to undertake. As to the question of speed, every one would be ready enough to admit that it was, perhaps, one of the most difficult and most controversial points which had to be faced with regard to this legislation. The real test whether the speed was too great or not was, after all, whether it caused any danger to the public or inconvenience to those who had a right to use the highway.

The Lords' Views.

◆ ◆ ◆
In the discussion which followed, Lord Granby gave expression to a general approval of the provisions of the Bill. Lord Rosebery was of opinion that all drivers of motor-cars, without distinction, should be required to obtain a licence or a certificate of skill. The Earl of Camperdown asked for information as to who was to be the judge of reckless driving. Were different regulations as to speed to be made with regard to each county, or was it intended that the Local Government Board should issue general regulations applicable to the whole kingdom? The Earl of Mayo said there was a notion abroad that motor-cars were going to run about and kill everybody. He should like to say that hundreds of cars passed through Dublin the other day and through the villages at a high rate of speed, and no damage



Jarratt's Car after the Accident.

was done whatsoever. As to the question of maximum speed, he thought it would be better to fix some limit of speed in the Bill rather than to leave it entirely to the local authorities. The result of the Irish race was to show that a foreign nation had introduced a car which was far ahead of any this country was likely to produce at the present time, and therefore he was anxious that no unnecessary obstacles should be placed in the way of the industry in this country. The Bill was then read a first time, and the second reading is fixed for Tuesday next.

Job Masters and Motor-Cars.

◆ ◆ ◆
MR. WALTER LONG, the President of the Local Government Board, was recently approached on behalf of the Jobmasters' Protection Association, and asked to receive a deputation on the subject of the Motor-Car Bill. General Laurie, M.P., was to have introduced the deputation, which claimed to represent 30,000 horse-drivers on the streets of London. Mr. Long, however, intimated that as the Bill had already been prepared it was too late to modify the first draft. He therefore asked that any suggestions the association had to make should be sent to him. Agreeably to this request the association have forwarded their proposals to Mr. Long, representing that they make them in no hostile spirit towards motor-cars and motorists, their only desire being to ensure such regulations as shall conduce to the safety of the property and

person of other users of the streets and roads. The following are the more important suggestions of the association:—(1) That all motor-cars be registered with numbers at back and front capable of being easily read, which numbers shall be illuminated at night time. (2) That all drivers of motor-cars, whether owners or not, shall possess a certificate for competent driving. (3) That penalties for offenders be increased. (4) That the clause in Article 1 of the Act of 1896 be amended with regard to the emission of steam or visible vapour, and that the police or any private individual shall equally have the power to summon offenders, and that penalties shall be imposed upon such offenders. (5) That it shall be made illegal for any person in charge of a car to keep his engine in motion whilst the car is kept stationary over three minutes. (6) That motorists using acetylene or any other high candle power lamps on their cars must provide such lamps with shades.

Motor Insurance.

A WRITER in the "Manchester Guardian" discusses at considerable length the advantages and shortcomings of motor insurance. Not the least difficult of the many perplexing problems which a motorist must face is that of choosing the best office in which to insure his car. Though drastic im-

extends the liability to make good damage sustained to the car through collision to damage caused by side-slip. At present comparatively few offices undertake liability for damage by fire, explosion, or self-ignition, and owners are compelled, if they desire such protection, to effect a separate insurance in fire offices. The rate of this class of insurance is 15s. per cent., but of late a tendency is noticeable in companies doing business of this kind to require owners to insure as far as possible up to the full value of their cars.

Some Defects.

TWO serious defects common to all motor policies may be mentioned. In the first place, no English insurance company is prepared to issue a policy which will follow the insured car wherever it may happen to be, a limitation which operates hard upon motorists in the habit of touring abroad. The chief reasons alleged for declining extension are, first, the vital difference between our own and Continental law in regard to the liability of drivers of vehicles for personal injuries, and secondly the increased expense such extension would entail in the number of agencies. Another much-needed reform in motor insurance is in the simplification of proposal forms. At present many of these are extremely complicated, and it is often a matter

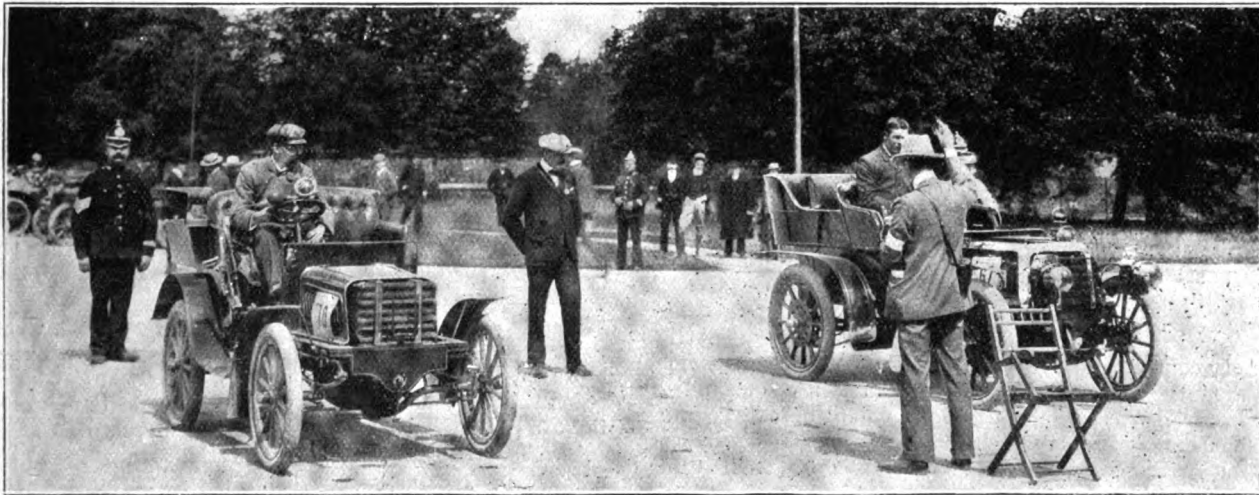


Photo by]

The Tourist Section—the 12-h.p. Prunel (E. Brun) and the 10-h.p. Star (J. Lisle) ready to start
THE SPEED TRIALS IN PHOENIX PARK.

[Argent Archer, Kensington.

provements have been introduced into the system of motor-insurance during the past year, it is still very far from being wholly satisfactory either to insurers or assured. Motor policies as a rule cover three classes of contingencies—accidents to owners, accidents to the car itself, and third party indemnity. When, however, wider protection is desired, the respective advantages offered by the various companies become complicated. For simplicity of explanation, let it be supposed that an owner is prepared to expend £10 per annum on insurance. For this annual premium he will have a choice of benefits. One office will undertake the following indemnities:—£500 in the event of death to owner through accidental, external, violent and visible means whilst driving or being driven in or whilst mounting or dismounting from car; £3 per week during temporary disablement from any accident of the above nature (limited to 26 weeks); £500 for accidental damage through collision (excluding fire, tyres, lamps, and the first £2 10s. of any damage), with a limit of £100 for any one accident; damage from fire, explosion, or self-ignition up to £200, or value of car, if of less amount, in any one year; and claims by the general public (third party indemnity) for personal injury or damage to property up to £500 in any one year, with a limit of £100 for a single accident. Another office, in substitution for the indemnity against personal accidents and damage by fire, offers to defray all law costs incidental to third party claims, includes the first 50s. damage, and

of difficulty to ascertain without correspondence the amount of premium asked under certain conditions. As in all other branches of insurance, the company whose terms are the simplest and whose obligations are met the most speedily and liberally is the most likely in the long run to win and maintain the confidence of automobilists.

Agriculturists and Motor-cars.

MOTOR traffic on the public roads was the subject of a paper read by Mr. A. S. Lawson, at a meeting of the Boroughbridge Agricultural Society, held at Boroughbridge, Yorkshire, on Saturday last. The president, Major Dent, of Ribston Hall, was in the chair. Mr. Lawson said he had endeavoured to approach the subject with an open mind, as there was much to be said on both sides. We must every year expect to see more motor traffic on our roads, and he believed we should soon find that horses would treat them, as they now treated bicycles, with the greatest contempt. The great majority of motorists, he admitted, drove safely and carefully, but there were others—though he did not believe a large number—who were a positive danger to those using the roads, and those were the people who were making motorists so unpopular in this country. At the same time he thought that motors could with safety be allowed a greater speed than twelve miles an hour.

With all respect to County Councils, he would much prefer one law for all parts of the country. "Motor traffic," said Mr. Lawson, in conclusion, "must have a great future before it, and I should be sorry to see any Act passed which would do harm to the motor industry; at the same time we must always remember that our roads are for all, and all have a right to protection."

Some Views.

A DISCUSSION ensued in which various views were expressed, one member remarking that he would insist upon a person who was summoned appearing personally in court. "After the first offence, whether it was the Prime Minister or anybody else, I would give all these men who are bereft of common sense the option for twenty-four hours of a plank bed or going to a lunatic asylum." The President (Major Dent) considered that people who ride horses would soon get accustomed to the motor-cars, adding that in nine cases out of ten it is the man that shies and not the horse. Motor-bicycles, with their "Pop, pop, pop," and the smell of petrol, were even more alarming than motor-cars. His experience in meeting motor-cars had been very fortunate. He had never yet met a driver who had disregarded any signal from him to stop, or behaved in any way to wilfully cause him annoyance. Scorching with motor-cars would right itself in time, as it had done in connection with bicycles. He had all along held that it would be the wisest thing to abolish the speed limit, and enforce the common law of the realm, which prohibited a man from driving at a speed that interfered with the comfort or safety of the public. He had always objected to the so-called "police traps," which were almost invariably on the safest parts of the road.

The Speed Question.

WE are inclined to agree with the remarks made by Mr. Arthur Duncombe at the last meeting of the East Riding of Yorkshire Quarter Sessions. He denounced the reckless driving that is going on in many places, and suggested that the county councils should have the power delegated to them of dealing with the matter. While we want to see some uniform system prevail we recognise that local conditions vary, and hence Mr. Duncombe's idea is not to be lightly put on one side. In Ireland, during the last few days, scores of cars have driven along country districts at rates ranging from fifty miles an hour onwards; while hundreds have been allowed to run at thirty and forty miles without hindrance. In fact the counties about Dublin have seen such an orgie of fleet travelling that accidents should have been numerous. But none have occurred, and save for an old goose or two nothing has been injured. The danger to the public comes not from speedy travelling but from the reckless driving often indulged in by novices—and it is against this that motorists generally as well as the public must be protected.

Motor Traffic.

MR. J. C. HAWKSHAW, M.A., the president of the recent engineering conference at the Institution of Civil Engineers made some interesting remarks on the subject of road locomotion in the course of his presidential address. As regards the best means of passenger transport, he pointed out that they had experience of how the advent of railways checked the progress of canals and also of motor-vehicles, which were far advanced nearly a century ago. "It is to be hoped that tramways will not again check the progress of motors and their use. Tram-lines render roads less suitable or serviceable for all other kinds of traffic. It is well worth considering whether it would not be advisable to make roads suitable for motor traffic of all kinds, and let motor-cars serve public as well as private purposes. Railways afford greater facilities than canals, but automobiles offer greater facilities than either railways or tramways, and though all three are necessary, nothing should be allowed to check the legitimate development of motor traffic—a suggestion which will meet with the approval of all motorists."

Railway Strikes and Motor-cars.

THE strike of the Victorian railway engine drivers and stokers was a serious matter. From our correspondents, Messrs. Phillips, Ormonde and Co., of Melbourne, we learn that for some days it was impossible to communicate with the country, with the result that the principal dailies instituted a motor-car service whereby their papers were conveyed to the interior. Some good records were made by these cars, one of which was a de Dion-Bouton and another a Decauville. Mr. Syd. Day, Mr. C. B. Kellow, and Mr. H. B. James, of the Commonwealth, all distinguished themselves in connection with the event.

A LANCHESTER car was used by the Automobile Club for laying the electric cables for the timing arrangements during the Gordon Bennett race. The cables were mounted on the rear platform of the Lanchester car, and this method of laying the cables proved to be a great saving of time to the club officials.

At all the leading hotels great crowds of motorists were seen last week, and the Shelburne presented quite a desolate appearance on Monday after the departure of the motorists for northern roads. At the Metropole, Jury's, and other well-known hotels, the buzz of motors was heard every day last week, and at the Standard, in Harcourt Street—with Dr. Lane Joynt, the motorist, as a neighbour—a score of automobile pressmen were located. There, too, have stayed M. Adrien Panhard, and M. Barbaraux, as well as several British motorists of distinction.

MR. EDGE had a great reception from the crowd outside the Shelburne Hotel on Monday as he drove off on his big racer to Newcastle for the Castlewella competition; in fact, all the competitors have been well received wherever they have appeared in Dublin, irrespective of nationality.

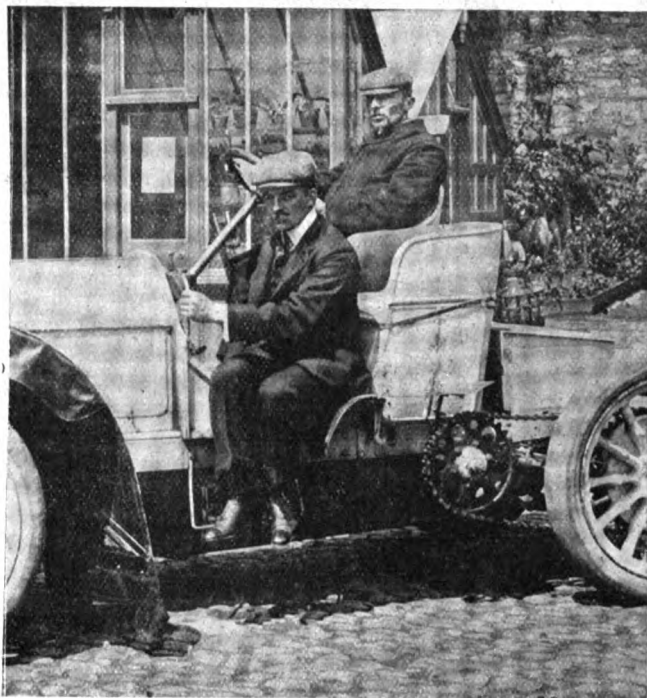
AN amusing incident occurred in connection with the trials in Phoenix Park on Saturday. All ordinary vehicles were stopped from entering by the usual gates. The viceregal party were, however, just passing our representative, who was anxious to reach the Club enclosure without walking. He mounted a jaunting car and ordered the jarvey to drive close to the Lord Lieutenant's carriage and in advance of the accompanying detective on a bicycle. The ruse succeeded, and a long walk was saved, and that was something on such a hot day.

SUPERINTENDENT EGERTON, chief of the City district of the Metropolitan Fire Brigade, met with a motor-car accident on Thursday last week. When he was returning from Clapham Common his car skidded in Kennington Park Road, and he was thrown out on the pavement and badly shaken and bruised. Immediately afterwards one of the electric trams crashed into the car, which was much damaged.

A RATHER alarming accident to a motor-car occurred at Renfrew on Thursday last week. The motor-car was proceeding down a steep road to the ferry on the Clyde, when the brake failed to act. The motor dashed at high speed through the ferry gate and into the River Clyde. The occupants—two gentlemen and driver—were pitched into the water. All three were rescued by the ferrymen, but the car sank. Fortunately no passengers were on the staging, otherwise the result might have been disastrous.

WE regret to announce the death of Mr. Paul Hardy, well known in Metropolitan cycling and motoring circles, which took place last week, at the age of 59 years. The deceased was the English representative of a number of Continental automobile papers. The fatal illness was of short duration, and after undergoing an operation, it was thought that he was progressing satisfactorily. Another operation being necessary, it was then found that little hope remained, and that the end could not be long delayed. His death ensued on Wednesday last week, he having been conscious almost to the last. To his friends and relatives we offer our deepest sympathy.

The Gordon Bennett Cup Race.



M. Jenatzy, the Winner of the Race, on his Mercedes.

LAST week we were able to give our readers a full report of the start of the race and also of the earlier incidents—up to, in fact, the afternoon. The *Journal* was on sale in Ireland by seven o'clock the following morning and eagerly scanned by motorists throughout Dublin for authentic news of the previous day's thrilling experiences. Our correspondent at Ballyshannon, who watched the progress of the contest with a view to an early publication of the probable result, telegraphed at 11.26 a.m.—as printed on page 346 last week—that "Jenatzy, De Knyff, Farman, Gabriel, and Edge are leading," and, although that was some hours before the end of the race, it ultimately proved to be the correct order of the finish, as given by the members of the International Commission.

THE RACE.

The race was a great one, and, although only five out of twelve finished the Course, it will prove a conspicuous event in the annals of British automobilism. Naturally we should have liked to have seen the Cup retained by Great Britain, but the mishaps to the English competitors and the failure of the Americans left the conclusion between France and Germany. As a team the Frenchmen did extremely well, securing second, third, and fourth positions, but the splendid driving of Jenatzy and the merits of the Mercedes well deserved the position so brilliantly won. Already the daily papers have recited the details of the contest, and the way in which the Irish journalists wrote column after column should be recorded with a tribute to their literary powers.

It was not an easy matter to follow the progress of all the competitors. Near the Grand Stand—a crude structure, with the flags of the competing nations fluttering from the topmost pillars—was a huge blackboard on which were recorded from time to time the records made by the competitors for the various circuits. But, as only one column was allowed, there was no opportunity for comparison, while the figures relating to Nos. 10, 11, and 12 could not be seen from the opposite side of the road owing to the

obstruction of a tall hedge. Such hedgerows had been cut down on other parts of the Course. Why they were not removed for a dozen feet at that point was a mystery to all—save those responsible for such an arrangement. The convenience of the Press was entirely ignored; the timekeepers' tent was on one side of the road, and the telegraph office located on the other, a tiresome walk over long grass being necessary for the despatch of telegrams. It had been decided to have Press stewards at all the controls, but even these were abandoned at the last moment, and the task of the journalists was rendered all the more difficult. Of course those gentlemen familiar with the usual methods of the Automobile Club with regard to the newspaper world were not surprised, but representatives of the daily press could not refrain from instituting comparisons between the arrangements for this international event and any local horse affair.

The police worked well. When we speeded round the Course at daybreak on Thursday—ours being the last car to complete the circuit before the pilots—the Constabulary were getting into position, and everywhere, with the single exception of the Kildare control, nothing but praise could be heard as to the way in which the police performed wearying and tiring duties. Continental competitors were loud in their enthusiasm over the complete way in which the roads were guarded, and the method in which the Course was kept was a revelation to motorists from other countries.

Motor-cyclists did stalwart work in returning the vouchers of the competitors from Killecullen to Ballyshannon, and it is regrettable that many complaints of the incivility of officials were heard. Certainly the way in which the road stewards were cleared from the Course at the start was brusque, and we would remind our Irish contemporaries who have dwelt on these points with some severity that the man "armed with a little brief authority" is somewhat apt to exaggerate his importance for the moment. To that we attribute most of the complaints that have been made,

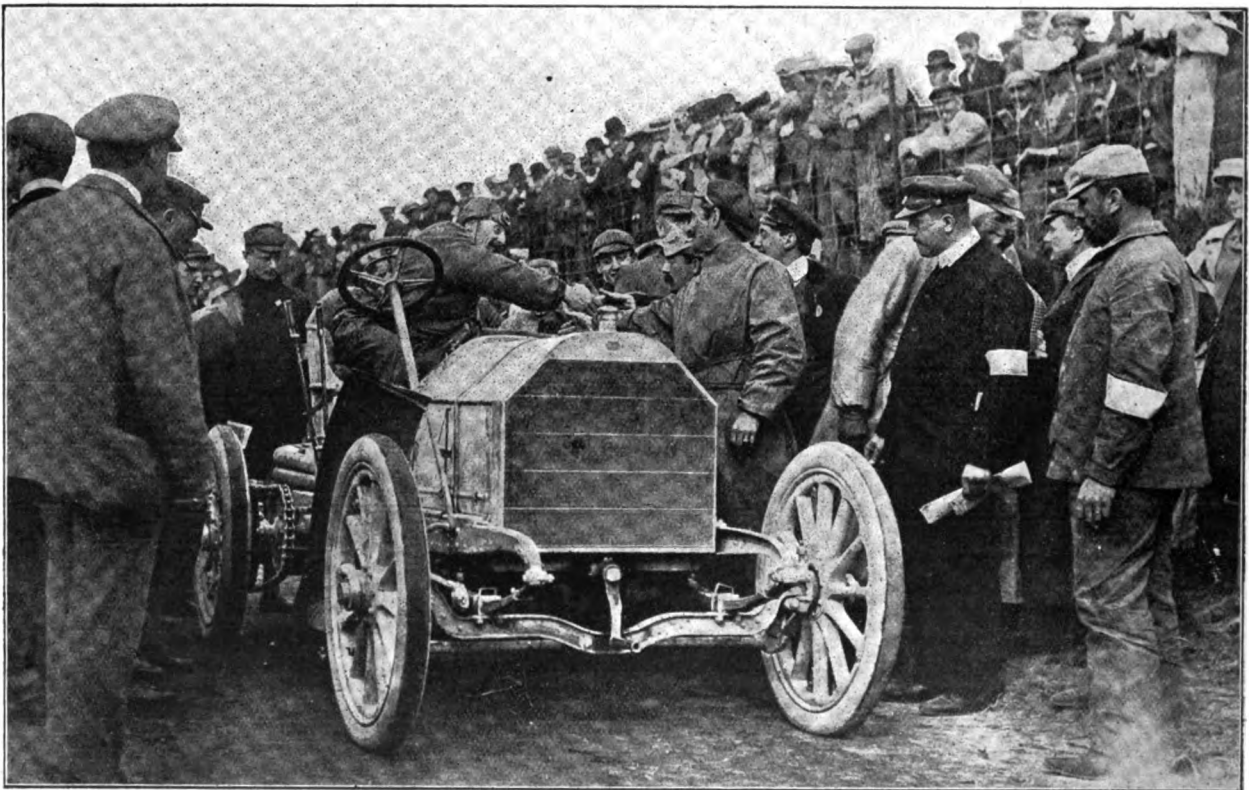
The first control was at Castledermot, where Jarrott and Gabriel both over-ran the line and had to employ their reverse. Edge drew up in the best style, his machine stopping dead.

on the Course. Jenatzy led De Knyff on the third round, and Gabriel's time showed an improvement.

At Carlow there were some exciting incidents. The Rt.



The Grand Stand—Included in the Group to the right is the Earl of Dudley, the Lord Lieutenant of Ireland (with book in hand). In the foreground (in straw hat) is Lord Plunkett.



Jenatzy, just about to start. Baron de Caters wishing him good luck. Georges Prade is immediately behind the Baron, while Hieronymus, [one of the reserve German team, is seen at the rear of the car.

(Photos by)

[La Fayette, Dublin.

One of the tyres of Stocks' machine was beginning to wear. On the second round De Knyff was first, Edge being delayed by a puncture four miles away. De Caters reported the accident to Jarrott, which was soon known at all the important places

Hon. H. Bruen had erected a grand stand for his friends, and an animated scene was presented to the competitors as they travelled round. At Ballymoon corner, not far away, De Knyff dashed into a wire fence, but pulled up in ten yards and got away.

Stocks was less fortunate at the same point, his car being completely overturned by rushing up the bank. Mr. Bruen drove him in his into Carlow, where he became a spectator of the event. De Caters also collided with the wire near the same spot.

Athy has been prominent throughout the time of preparation for the race. There the English team had their headquarters, and both the Panhards and the Germans occupied

the cars were passing through the control the third time a lad ran into the roadway to watch De Knyff's car glide away. Jenatzy came along, and although he tried to steer clear of the boy, failed, and knocked him over. The lad was taken to the infirmary.

Monasterevan gave only a limited view of the cars, and was not a control of popular resort. De Knyff complained of his steering gear at the first round, and it was seen that Foxhall



Photo by]

The View from the Mount of Ardsull. Gabriel slowing down for the turn.

[Lawrence, Dublin.

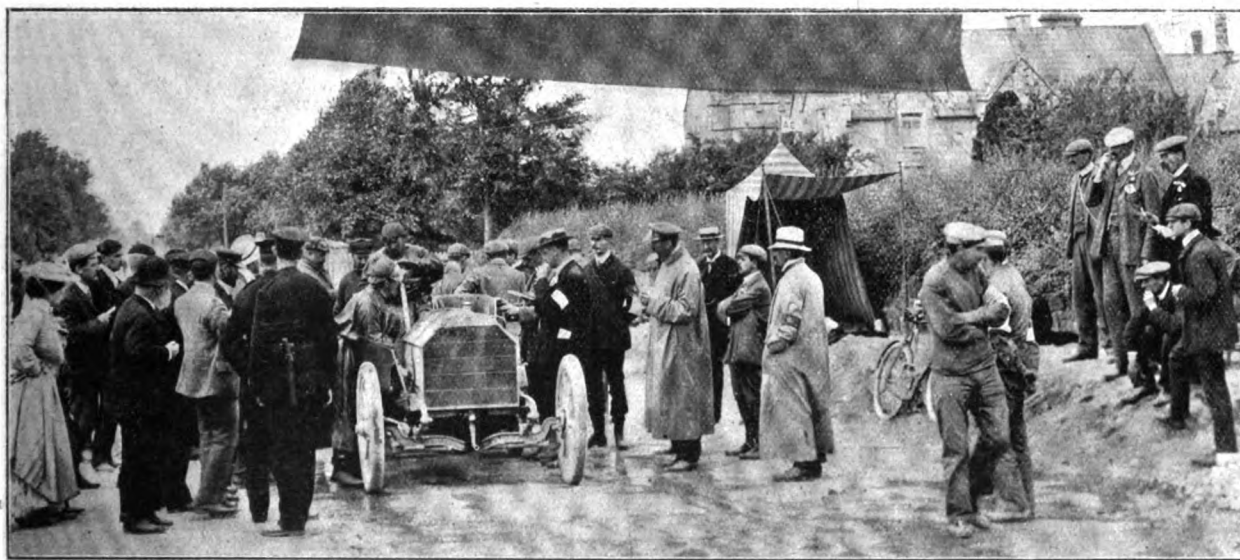


Photo by]

Jenatzy entering the Athy Control.

[Argent Archer, Kensington.

hotels there the few nights before the race. Just after leaving the control the gearing of Mooers' Peerless went wrong, and his car lay helpless on the roadside at least half an hour.

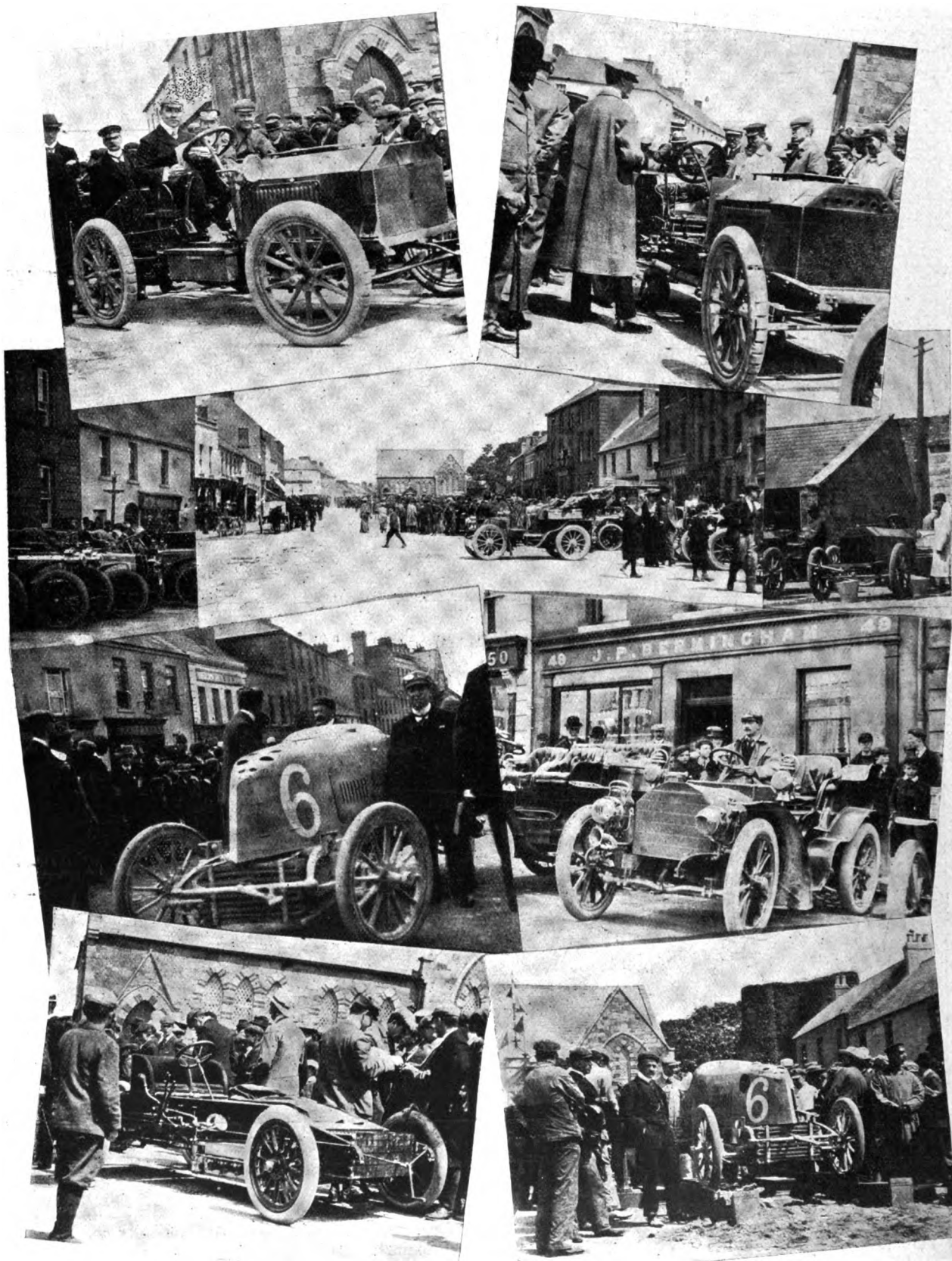
Kildare presented a very busy scene indeed. At the second round Edge reported that burst tyres had been the cause of his delay, and Winton missed his road across the Curragh. Having no reverse, he had to run round over the grass. While

Keene's axle was bent. Edge had tyre troubles two miles away

The first excitement at Stradbally was the news of the accident to Jarrott, which happened near the Rock of Dunamais, and to which we make reference elsewhere. Winton's car had been working very badly, and did not arrive till 12.35. Gabriel's cylinders, too, were not up to their usual form, and he was in trouble from that cause. De Knyff had bad luck at Stradbally.

(Continued on page 365.)

THE WEIGHING IN AT NAAS.



Jarrott on his Napier.
Gabriel on his Mors.

Owen's Car waiting to go on the Scales.

The Scene in Naas.

Edge's Car Ready for the Scales.
Mr. C. Cordingley's Mercedes.

Gabriel Watching his Car being Weighed.

The gross times recorded for each competitor in going the rounds of the various circuits were as follows:—

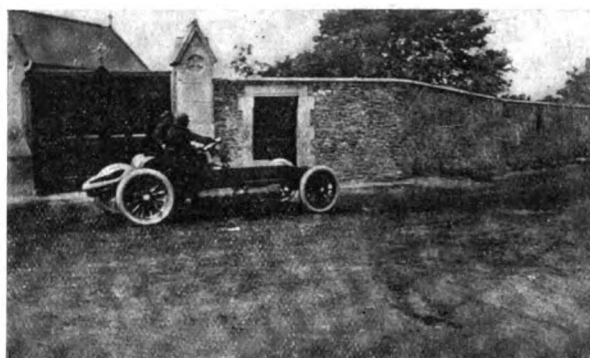
Name.	1st Round.	2nd Round.	3rd Round.	4th Round.	5th Round.	6th Round.	7th Round.
	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.
Edge	1 23 23	1 37 31	1 55 59	1 54 59	1 42 35	1 46 01	50 0
De Knyff ..	1 33 47	1 32 31	1 18 57	1 38 16	1 19 40	1 33 39	1 38 41
Owen ..	1 33 57	1 45 26	—	—	—	—	—
Jenatzy ..	1 26 58	1 31 19	1 17 45	1 31 52	1 21 16	1 31 32	1 37 19
Jarrott ..	1 25 14	—	—	—	—	—	—
Gabriel ..	2 15 10	1 30 19	1 30 31	1 34 20	1 19 41	1 43 58	1 35 5
Mosers ..	3 11 10	—	—	—	—	—	—
De Caters ..	1 27 17	1 38 42	1 19 11	1 37 19	1 19 21	1 38 16	—
Stocks ..	No return.						
Farman ..	1 24 31	1 40 27	1 17 35	1 35 55	1 18 31	1 38 17	1 31 31
Winton ..	3 23 24	3 4 26	—	—	—	—	—
Keene ..	1 23 31	1 54 8	1 39 0	—	—	—	—

It will be seen that on the first round Foxhall Keene made the best time, Edge being only 20 sec. behind. Farman made the running on the third circuit, while Gabriel gained on the fifth, Farman again doing well on the last lap—better, in fact, than Jenatzy. Gabriel lost much on the first trip, and Jenatzy and Farman deserve recognition for their consistent running throughout.

Some sensation was caused in Dublin on Monday when it became generally known that the International Committee had disqualified Mr. Edge for the fifth place which they had awarded him in the Gordon Bennett race. They found it proved that in his case the rules had been violated by the fact that his car had received assistance by pushing in the Athy control. The effect of this decision was that no English competitor was officially recognised as having finished in the race, and naturally it was



Jenatzy Rounding the U-corner at Kilcullen.



Winton at Kilcullen Corner.



De Knyff at the Athy Control. How the Tyres were Cooled.

[Argent Archer, Kensington.]

Photo by]

On Friday the International Commission met in Dublin and awarded the Gordon Bennett Cup to the German Automobile Club, at the same time announcing the times of the various competitors as follows:—

NAME.	H.	M.	S.
M. Jenatzy
M. de Knyff
M. Henri Farman
M. Gabriel
Mr. S. F. Edge

M. Jenatzy's time thus works out at 49½ miles per hour, an advance on last year's speed, and, considering the sinuous and dangerous character of the Course, a very good rate.

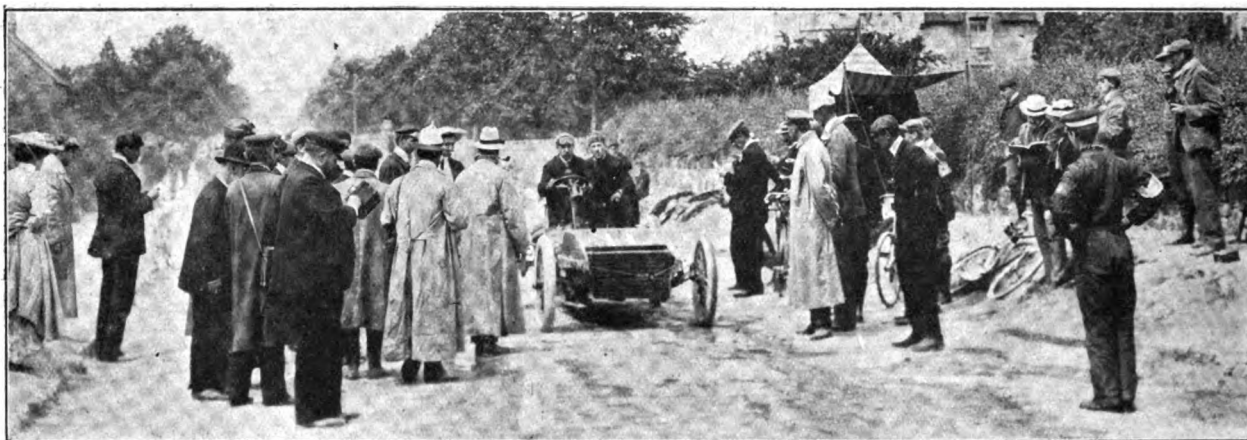
received with regret throughout Ireland, where the English team had become very popular.

MISHAPS.

Seeing that only five competitors out of twelve completed the course, it would appear that the proportion of mishaps was something considerable, and, as a matter of fact, the personal element in the contest comes out strongly. None of the Americans had had experience of such long racing—and none finished. Stocks did not show up conspicuously in his first great contest, and De Caters did not seem to be driving for the Cup. All the Frenchmen finished, and Edge and Jenatzy, so that it would appear that experience counts for much.

(Continued on page 367.)

SNAPSHOTS ON THE COURSE.



Winton at the Athy Control.

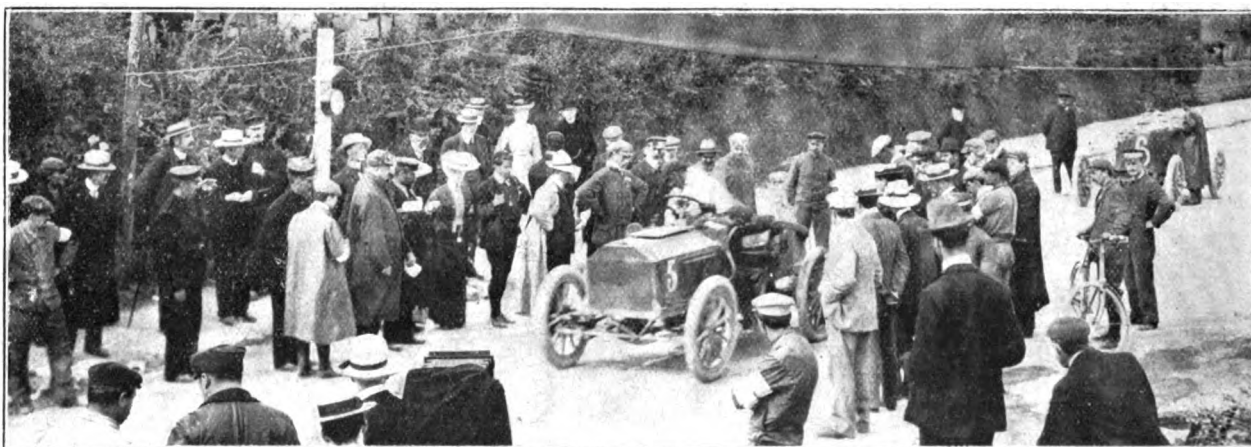


Photo by]

Jarrott at the Athy Control.

[Argent Archer, Kensington

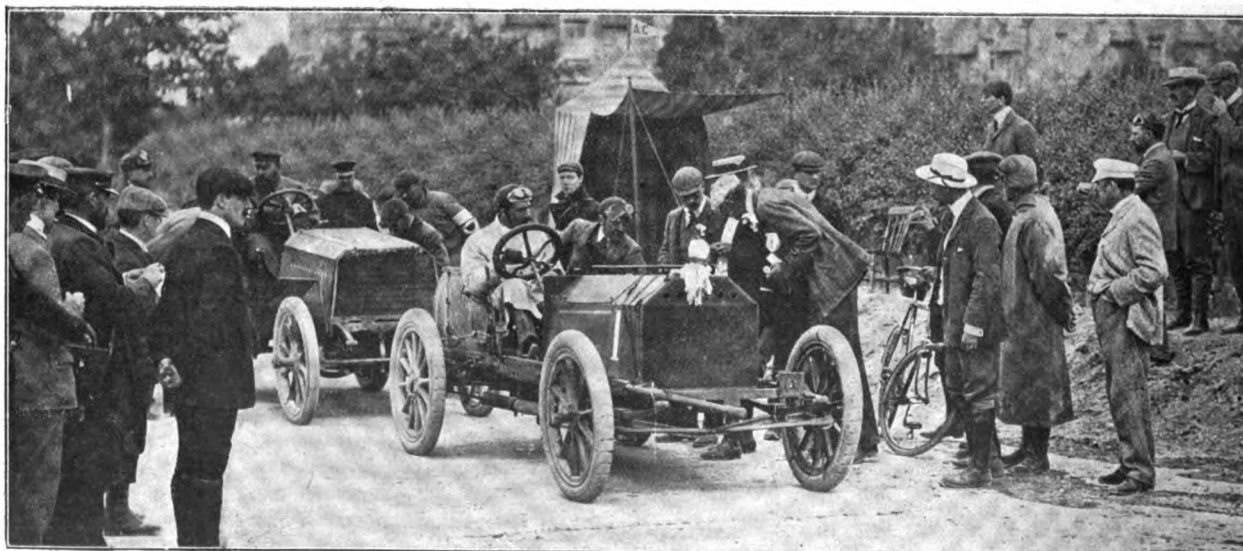


Photo by]

Edge and De Knyff waiting to start at the Athy Outward Control.

[Lawrence, Dublin.

Of the accidents, that to Jarrott's car was the most serious. Discarding the rumours that were flying about Dublin, we had a chat with the hero of the mishap himself on Friday morning, and were able to congratulate him on the fact that the mishap had been no worse than it was. The wonder really was that he was alive to tell the tale, for his car was reduced to a greater state of wreckage than was the vehicle driven by the late Mr. Loraine Barrow in the Paris-Madrid race. Near Stradbally the car became unmanageable, and dashed up a bank about ten feet high with a tall hedgerow at the top; then, descending backwards, the plucky driver was thrown, sustaining a broken collar-bone, a scalp wound, and bruises everywhere. The car then rushed madly a few feet, and overturned, crushing young Bianchi, the mechanic, underneath. Jarrott himself was lying dazed a few feet away, his head bleeding, and altogether a picture of misery. He managed to rise to try to help his mechanic, when a policeman challenged his right on the road. "I am a competitor," he replied, "and the road is my proper place," although the humour of it was not apparent to him at the time. Gaining a little strength from his determination, he was able to extricate Bianchi, and De Caters, coming along, offered help. Jarrott ordered him forward; and it speaks well for the true manly feeling of the Belgian Baron that he stopped at Ballyshannon to inform the officials of Jarrott's sad plight. Doctors were despatched, but Jarrott was almost in a state of collapse, and the first definite recollection he had was of some of his hair being cut away with a blunt penknife. The collar-bone was set, and in an hour he was puffing away at a cigarette with characteristic coolness, though with a pallor that told of his sufferings. Although looking fairly well on Saturday, he bore traces of his accident, and it will be some days before he will be himself again. Bianchi's body is a mass of bruises, although by the time these lines are in print it is hoped he will have been removed from Athy.

Near where Jarrott's accident occurred the Peerless car driven by Mooers went to pieces. Fortunately nothing beyond the shock of being precipitated into a field a few feet from the car happened to Stocks, but through running into the wire netting his car was placed out of the contest, and a bent axle compelled the retirement of Foxhall Keene.

THE FINISH.

[DELAYED IN TRANSMISSION LAST WEEK.]

It is 5.30, and we are expecting a winner. De Knyff and Jenatzy are on their last journey, and a stern shower has driven all but the most intrepid to tent and to shelter. With Hieronymus—the Mercedes reserve man—and others, we stand upon the sloping bank at Ballyshannon. Field-glasses are directed up the straight road towards Athy, and then the screeching hooter from an adjoining field announces that a car has passed the Moat of Ardsnull. All rush from tents—ladies in dainty summer raiment forget the rain in their anxiety to see the driver, and across the long grass they run with enthusiastic energy. A black speck appears upon the road. Its straight course is clear; it grows as it comes between the avenue of tall trees, and when it emerges into the less sheltered roadway it is evident that it is De Knyff, the straightest driver of the lot. Mr. Basil Joy rushes out as the bearded Frenchman comes down the hill, and frantically waves the flags that indicate the completion of the long race. Nothing slackening, De Knyff comes crashing up the hill, and disappears below the Grand Stand in a mad fury, desirous of gaining to the last. We compare watches, we glance at the clock, we calculate from scoring-sheets. Should Jenatzy come within the next fourteen minutes the Mercedes will have won. And unless some untoward happening takes place, Jenatzy will come along soon. The German contingent become anxious with an anxiety that leads to silence. Dick Farman and the Frenchmen talk with bated breath, and strain their eyes up the long hill. Then the hooter sounds forth again, and the craning of necks is almost painful. The black speck appears, and here is Jenatzy—a veritable fury let loose. He comes by the time-

keepers' tent, a picture never to be forgotten. His prominent features are silhouetted in the darkening afternoon, and with his cap blowing wildly in the breeze, his gaunt fingers clutching madly at the steering wheel, his eyes almost coursing from their sockets, he would do for one of Sir Henry Irving's impersonations of some wild courser from the nether regions. A mighty cheer ascends, Earl Dudley and his staff come forth, and Jenatzy, throwing his long arms into the air, is told he wins. The Germans become wilder and wilder in their joy; the mechanic tries to dance, but the strain of the last ten hours is upon him, and it is but a feeble and unnatural performance. There is nothing left to wait for now, but the three whose chances of premier position have been receding all the afternoon. And we wander back to Ballyshannon House to shake hands with Jenatzy before his car is weighed in.

He had hardly dared to win, and it was not till the third round that the probability of success dawned. Then he went for all he was worth. His most exciting moment in the race was when trying to pass Owen at Kilcullen. In the grounds of Ballyshannon House we met other competitors. Henri Farman was there, having ridden his last great race. De Knyff, too, is not likely to race again. Percy Owen came along, plucky and game, but outclassed by the veteran riders around. All bore evidences of the tension through which they had passed.

THE DAY AFTER THE RACE.

Friday was made tedious and wearisome by the weighing-in process—an uninteresting, necessary performance carried out at Guinness' Brewery, within the area perfumed by the sadly flowing Liffey. A long delay was occasioned by the absence of the officials, who, although the weighing-in hours were only from 11 a.m. to 3 p.m., seem to have indulged in a gently extended period of refreshment while a score of cars were waiting to be put upon the weighbridge. Even such a process, however, must have an end, and right glad were all concerned when the event was concluded. Why cannot the official in charge be provided with a printed list of entrants with columns ruled for the various notes required? Such a plan would facilitate reference, and have saved much waste of time not only on Friday but also at Naas the preceding Wednesday.

Weighing over, we decided to retrace our tracks to Kilcullen, to see what stragglers were coming towards town. The climatic conditions were a combination of fair and foul in regular alternations towards Naas, when the clouds cleared. On the way a dozen cars were noticed *en panne*, and all the Panhards and Mors relief cars were seen merrily rushing to Dublin—piled up with tins, etc., as well as with cheery workmen, who seemed more dampened by the rain than by the loss of the race. But doubtless they were hiding their feelings in this foreign land.

At Kilcullen we learned many tales of woe; how motorists had broken down and had to seek temporary refuge during the night in strange places. There was general depression at the loss of the English team—for not only does this mean the loss of the Cup, but it means no return of the abnormal prosperity that has delighted the neighbourhood these last few weeks.

It is now settled that the feature of the forthcoming visit of the King and Queen to Ireland will be the motor-car tour, which has now been extended as far west as Galway.

THE cinematograph was busy during the race, and on the evening of Thursday last animated photographs of the scene on the course were shown in the Dublin music halls.

UNFORTUNATELY the telegraphic arrangements in connection with the race were meagre in view of the importance of the event, and in common with others we were seriously handicapped in consequence. A telegram descriptive of the weighing in at Naas on the previous day occupied four hours in reaching London, and 500 words despatched from Kilcullen on the morning of the race arrived late and terribly twisted. There was evidently a blockage at Dublin, or we should have been able to have carried through our intention of giving the result in last week's issue.

Speed Trials in Phoenix Park.

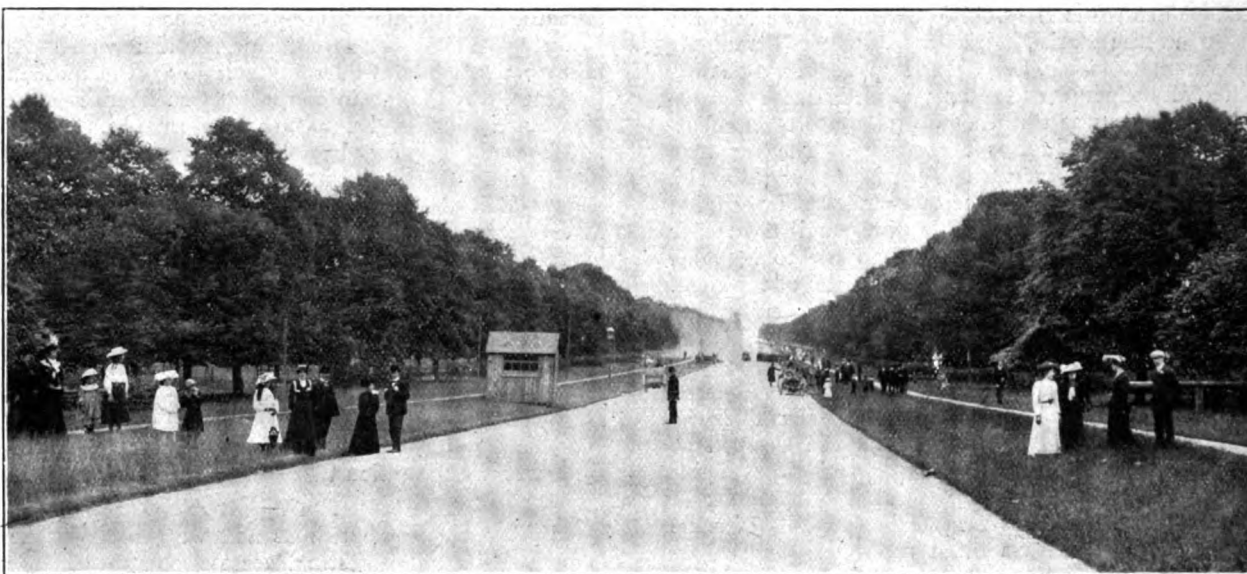


Photo by]

View of the Course in Phoenix Park.

[Argent Archer, Kensington.

"Dear dirty Dublin" looked its best on Saturday, when we forgot the murky Liffey in the brilliance of the sun glare, and all the dusty troubles of the preceding days vanished before the beauty that gathered in the Phoenix Park. We had been surfeited with views of rural poverty, struggling decency, and the miserable existence of county Kildare; and round about the scene at the Speed Trials was a revelation of bright sparkling eyes and beauteous forms that gracefully trod the greensward and smilingly greeted the motorists as they dashed along the straight course, apparently oblivious of the delightful visions all around. But the way the drivers found their way to the Club enclosure when their heats were run was significant.

The Phoenix Park is a delightful space, with a variety of aspects such as are possessed by few similar places on the other side of the Irish Sea. The curious Phoenix pillar, from the foot of which the surrounding slabs had been removed for the straightening of the course, was erected by the Earl of Chesterfield in 1747. The acreage is 1,752 acres, and although nearly two thousand trees were blown down by the storm in February last, its well-wooded aspect is still conspicuously maintained.

On Saturday the competitors entered by the Castle Knock Gate, and were started from a point which allowed the kilometre to end just before the Phoenix was reached, and the one mile one kilometre about midway along the Club enclosure. At the further end of this was a heavy barrier obstructing the public view near Lord Gough's statue. Thus sufficient length of roadway was left for the speediest racing cars to draw up. The spectators were kept fifty feet from either side of the roadway by a fence, thus reducing to the minutest minimum any risk of danger. Along the raised footpaths from which the public were excluded motor-cyclists flitted all the afternoon, carrying messages and facilitating the work of the organisers of the contests.

The results of the various events were as follows:—

MOTOR-CYCLE SECTION.

CLASS A1.—Motor-Cycles up to and including 70 lbs.

Name and Machine.		Name and Machine.	
C. G. Garrard (Clement Garrard) ..	1	Bert Yates (Humber)	0
Time—2 mins. 53 3-5 secs.			

CLASS A.—Motor-Cycles up to and including 114 lbs.

Preliminary First Heat.

Name and Machine.		Name and Machine.	
T. C. Furlong (Werner)	1	R. Samson (Quadrant)	0
Time—2 mins. 33 4-5 secs.			

Second Heat.

J. F. Crundall (Humber)	1	Alfred Summers (Triumph)	0
Henry Stones (Rex)	2	Time—2 mins. 12 1-5 secs.	

Third Heat.

Andre Gommers (Gamage)	1	C. G. Garrard (Clement Garrard) ..	3
A. Wright (Ormonde)	2	A very close contest. Won by four lengths; third a long way off. Time—2 mins. 5 secs.	

Fourth Heat.

C. W. Hacking (Ormonde)	1	Time—2 mins. 0-2-5 secs.	
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Final.

Gommers (Gamage)	1	T. C. Furlong (Werner)	3
J. F. Crundall (Humber)	2	Time—2 mins. 16 1-5 secs.	

CLASS B.—Motor-Cycles up to and including 170 lbs.

First Heat.

Name and Machine.		Name and Machine.	
B. Yates (Humber)	1	Hon. Captain Ruthven (Singer) ..	3
W. H. Yates (Hobart)	2	Time—2 mins. 15 secs.	

Second Heat.

Harry Martin (Excelsior)	1	J. F. Crundall (Humber)	2
Time—1 min. 59 1-5 secs.			

Third Heat.

S. Wright (Excelsior)	1	R. W. Ireton (Riley)	0
F. W. Chase (Chase)	2	Time—3 mins. 1 4-5 secs.	

Fourth Heat.

W. H. Burden (Riley)	w.o.	Time—2 mins. 33 1-5 secs.	
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Fifth Heat.

H. Prickett (Riley)	1	W. Weekes (Crypto)	2
Time—2 mins. 7 1-5 secs.			

Final.

Harry Martin (Excelsior)	1	H. Prickett (Riley)	3
S. Wright (Excelsior)	2	Time—2 mins. 1 sec.	

TOURIST SECTION.

CLASS C.—Tourist Cars costing £300 or under, which need not carry more than two people.

First Heat.

Name and Car.		Name and Car.	
E. T. Baker (10-h.p. Duryea)	1	G. Burnett (5-h.p. Humber)	0
Time—2 mins. 27 4-5 secs.			

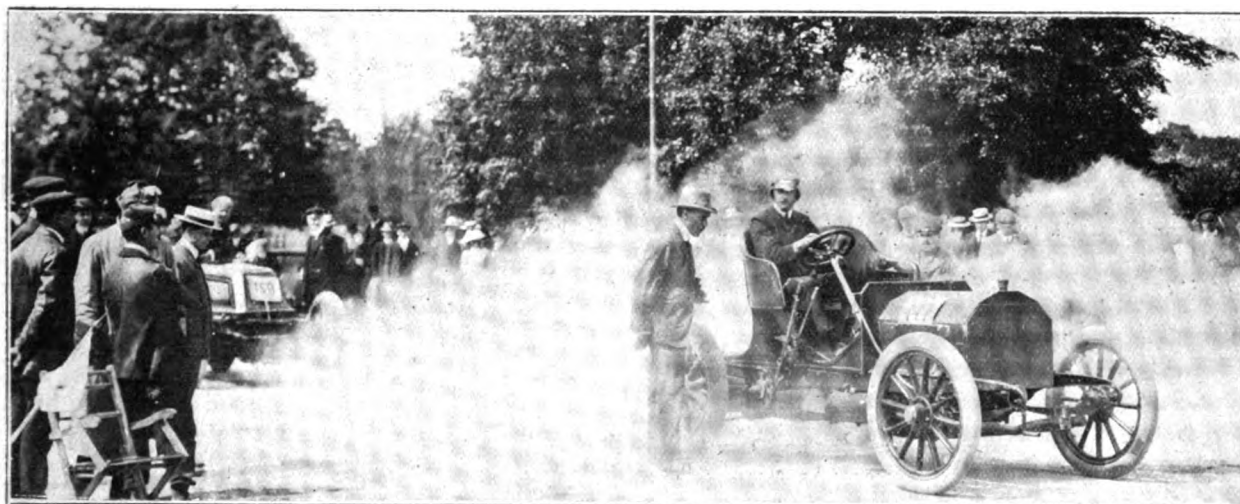
The Humber was stopped through colliding with flag post.

(Continued on page 370.)

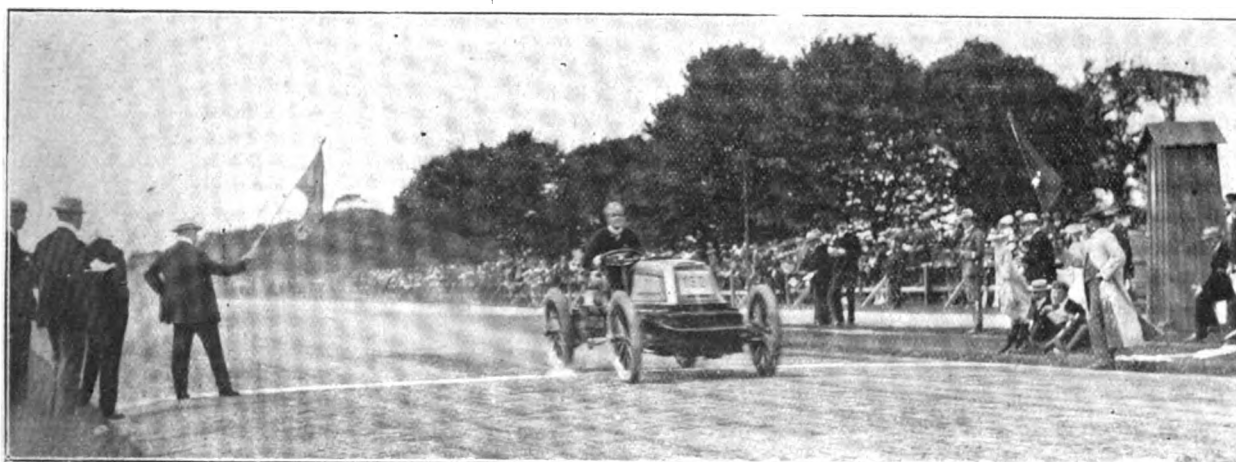
SNAPSHOTS IN PHOENIX PARK.



De Brou on his 45-h.p. De Dietrich.



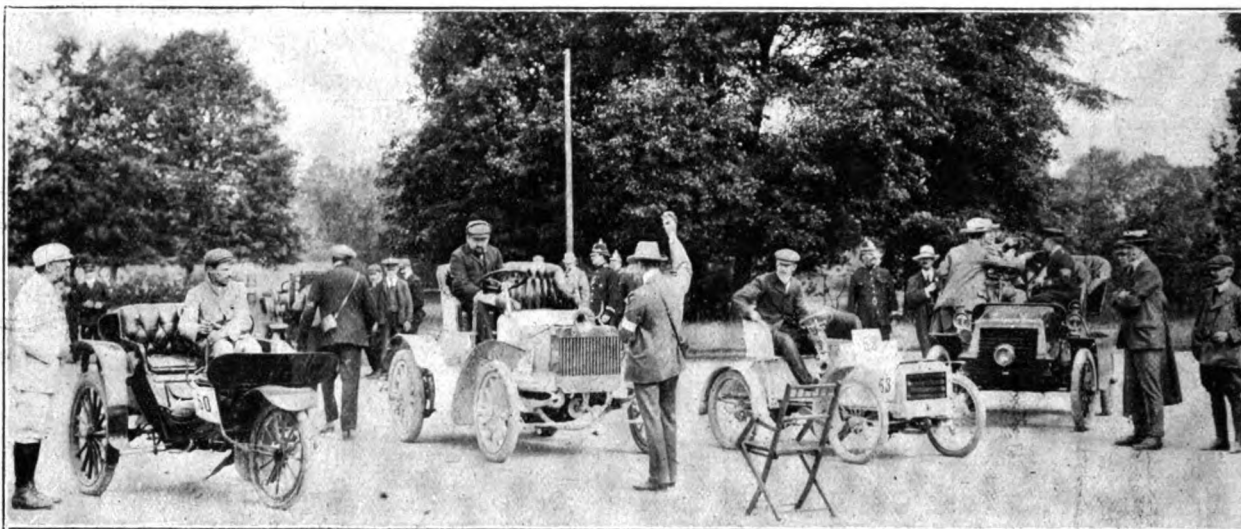
The Racing Section.—Mr. C. Cordingley's 40-h.p. Mercedes.



[Phot. by]

The Racing Section.—The Hon. C. S. Rolls on the Finishing Line.

[Argent Archer, Kensington.]



The Tourist Section, Class C.—The 10-h.p. Duryea, 10-h.p. Durkopp, and 5-h.p. Humber.—This event was won by the Duryea.

Second Heat.	
Dr. Edward Lehweß (10-h.p. Durkopp)	w.o.
Time—2 mins. 53 1-5 secs.	
Final.	
E. T. Baker (10-h.p. Duryea) 1 | E. Lehweß (10-h.p. Durkopp) .. 2	
Time—2 mins. 30 secs.	
CLASS D.—Tourist Cars costing over £300, but not more than £650, to carry four people.	
First Heat.	
Driver and Car. 1 | Driver and Car. 0	
Alec Govan (16-h.p. Argyll) 1 | J. R. Sharp (20-h.p. Thornycroft) 0	
Time—2 mins. 29 1-5 secs.	
Second Heat.	
T. B. Browne (18-h.p. James and Browne) 1 | H. du Cros, jun. (12-h.p. Ariel) .. 0	
Time—2 mins. 44 secs.	
Third Heat.	
W. Lecoq (10-h.p. Renault) 1 | F. Lanchester (10-h.p. Lanchester) 0	
Time—2 mins. 49 1-5 secs.	
Fourth Heat.	
J. T. Overton (24-h.p. Georges Richard) 1 | R. W. Leader (16-h.p. Century) .. 0	
Time—2 mins. 13 4-5 secs.	
Fifth Heat.	
A. J. Clay (16-h.p. Decauville) .. 1 | H. Lee (12-h.p. Magnet) 0	
Time—3 mins. 27 secs.	
Sixth Heat.	
J. Lisle (10-h.p. Star) 1 | R. W. Buttemer (10-h.p. Decauville) 0	
Time—2 mins. 55 secs.	
Seventh Heat.	
J. R. Dickson (18-h.p. Elswick) .. 1 | Hubert Porlier (12-h.p. Belgicia) disq.	
Time—3 mins. 14 3-5 secs.	
Eighth Heat.	
A. E. Crowdy (24-h.p. Wolseley) .. 1 | S. Girling (12-h.p. Wolseley) 0	
Time—2 mins. 53 3-5 secs.	
Ninth Heat.	
A. C. Visich (20-h.p. Wolseley) .. 1 | R. Dennis (20-h.p. Dennis) 0	
Time—2 min. 34 3-5 secs.	
Tenth Heat.	
H. Norman (12-h.p. de Dietrich) .. 1 | H. Belcher (12-h.p. Humber) 0	
Time—2 min. 47 2-5 secs.	
Eleventh Heat.	
W. L. Adams (16-h.p. Boyer) 1 | Captain A. G. Stevenson (24-h.p. Darracq) 0	
Time—2 min. 51 3-5 secs.	
Twelfth Heat.	
A. Rawlinson (24-h.p. Darracq) .. 1 | F. Perry (12-h.p. Meteor) 0	
Time—2 min. 50 2-5 secs.	
Final (between two fastest winners).	
Overton (24-h.p. Georges Richard) 1 | Govan (16-h.p. Argyll) 2	
Time—2 mins. 16 4-5 secs.	
CLASS E.—Tourist Cars costing over £650, but not more than £1,000, to carry four people.	
First Heat.	
Name and Car. 1 | Name and Car. 0	
George Cornwallis West (20-h.p. Brush) 1 | H. Du Cros, jun. (20-h.p. Ariel) .. 0	
Time—3 mins. 29 4-5 secs.	

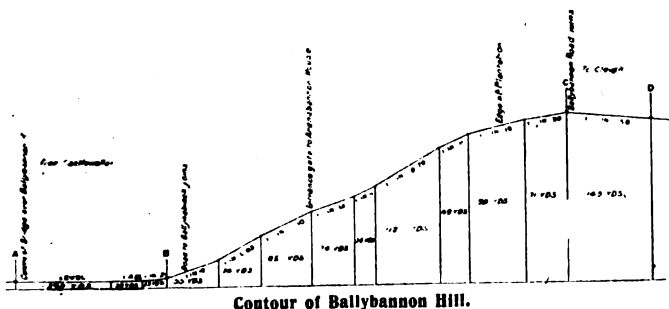
Second Heat.	
J. W. Cross (20-h.p. Humber) 1 | Hon. Scott Montagu (22-h.p. Daimler) 0	
Time—2 mins. 11 4-5 secs.	
Third Heat.	
E. Manville (22-h.p. Daimler) 1 | A. J. W. Millership (16-h.p. Lanchester) 0	
Time—2 mins. 19 2-5 secs.	
Fourth Heat.	
Ernest Pitman (18-h.p. Peugeot) .. 1 | H. Ramoisy (15-h.p. Pipe) 0	
Time—2 mins. 25 1-5 secs.	
Fifth Heat.	
C. C. Maudsley (25-h.p. Maudsley) 1 | E. M. C. Instone (22-h.p. Daimler) 0	
Time—2 mins. 36 1-5 secs.	
Sixth Heat.	
G. H. Lanchester (16-h.p. Lanchester) 1 | T. R. S. Bircham 0	
Time—2 mins. 29 2-5 secs.	
Seventh Heat.	
R. M. Ford (16-h.p. Decauville) .. 1 | E. Kennard (12-h.p. Napier) 0	
Time—3 mins. 20 secs.	
Eighth Heat.	
Geo. Iden (20-h.p. M.C.C.) 1 | F. Barbour (10-h.p. Panhard) 0	
Time—2 mins. 26 3-5 secs.	
Ninth Heat.	
A. Burgess (20-h.p. M.M.C.) 1 | W. G. Wilson (10-h.p. Wilson Pilcher) 0	
Time—2 mins. 21 1-5 secs.	
Final (between two fastest winners).	
J. W. Cross (20-h.p. Humber) 1 | E. Manville (22-h.p. Daimler) .. 2	
Time—2 mins. 6 1-5 secs.	
CLASS F.—Tourist Cars costing over £1,000, to carry four people.	
First Heat.	
Name and Car. 1 | Name and Car. 0	
J. Hargreaves (20-h.p. Napier) .. 1 | J. M. Gorham (20-h.p. Daimler) .. 0	
Time—2 mins. 24 1-5 secs.	
Second Heat.	
P. Richardson (22-h.p. Daimler) .. 1 | H. Barbour (22-h.p. Daimler) 0	
Time—2 mins. 24 secs.	
Third Heat.	
D. B. Hall (30-h.p. Wolseley) 1 | A. M. T. Fletcher (18-h.p. Mercedes) 0	
Time—2 mins. 18 1-5 secs.	
Fourth Heat.	
R. H. Fuller (16-h.p. Napier) 1	
Time—2 mins. 35 1-5 secs.	
Fifth Heat.	
C. W. Hocking (20-h.p. Panhard) .. 1 | J. F. Ochs (16-h.p. Napier) 0	
Time—2 mins. 20 secs.	
Final.	
D. B. Hall (30-h.p. Wolseley) .. 1 | C. W. Hocking (20-h.p. Panhard) 2	
Time—2 mins. 13 1-5 secs.	
CLASS G.—Steam Tourist Cars costing not more than £800, to carry full complement of passengers.	
Name and Car.	
W. J. Warren (6-h.p. Gardner-Serpollet) 1	
Only car entered.	

CLASS H.—Racing cars weighing less than 650 kilos (12 cwt. 3 qrs. 5 lbs.) First prize, the Irish Automobile 100-Guinea Challenge Cup, and purse of 20 guineas; second, silver medal.

Name and Car.	Name and Car.
A. Rawlinson (30-h.p. Darracq) 1	E. Brun (20-h.p. Prunel) 0
2 mins. 10 secs. (51 miles per hour).	M. Barbaroux (60-h.p. Parisfal) . . 0
Barbaroux was disqualified, and Brun made a false start.	

CLASS J.—Racing Cars, weighing not more than 1,000 kilos (19 cwt. 2 qrs. 20 lbs.). First prize, the Irish Automobile Club 200-Guineas Challenge Cup, and purse of 20 guineas.

Name and Car.	Name and Car.
J. E. Hutton (60-h.p. Mercedes) . . 1	G. Van der Pol (24-h.p. Pipe) 0
1 min. 28 3-5 secs. (78 miles per hour).	1 min. 52 secs. (63½ miles per hour).
Baron de Forest (70-h.p. Mors) . . 2	G. P. Burton (40-h.p. Mercedes) 0
1 min. 29 3-5 secs. (77 miles per hour).	1 min. 56 secs. (62½ miles per hour).
Hon. C. S. Rolls (80-h.p. Mors) . . 3	A. Callan (45-h.p. Wolseley) 0
1 min. 29 4-5 secs. (77 miles per hour).	1 min. 61 3-5 secs. (61½ miles per hour).
E. C. Muir, (60-h.p. Mercedes) 0	H. Austin (50-h.p. Wolseley) 0
1 min. 35 1-5 secs. (72 miles per hour).	2 mins. 27 secs. (55½ miles per hour).
De Brou (45-h.p. De Dietrich) . . 0	L. Rigolly (100-h.p. Gobron-Brillie) 0
1 min. 41 3-5 secs.	1 min. 52 secs. (69 miles per hour).
G. Higginbotham (60-h.p. Mercedes) 0	M. Gabriel (80-h.p. Mors) 0
1 min. 43 2-5 secs. (68 miles per hour).	2 mins. 2 2-5 secs. (70 miles per hour).



Contour of Ballybannon Hill.

OPEN EVENTS.

CLASS K.—Scratch race for the Daily Mail Challenge Cup for the fastest car weighing under 1,000 kilos, over the flying kilometre, provided it covers the kilometre in under 40 secs.—90 kilos, or 55·9 miles an hour. The cup to become the property of the member of a club whose car or cars may win it two years in succession.

Name and Car.	Name and Car.
Baron de Forest (70-h.p. Mors) . . 1	E. C. Muir (60-h.p. Mercedes) 0
27 1-5 secs. (83½ miles per hour).	31 2-5 secs. (72½ miles per hour).
Hon. C. S. Rolls (80-h.p. Mors) . . 2	G. Higginbotham (60-h.p. Mercedes) 0
28 secs. (80½ miles per hour).	32 4-5 secs. (70 miles per hour).
L. Rigolly (100-h.p. Gobron-Brillie) 3	H. Austin (50-h.p. Wolseley) 0
28 2-5 secs. (80 miles per hour).	33 3-5 secs. (67½ miles per hour)
J. E. Hutton (60-h.p. Mercedes) 0	A. Callan (45-h.p. Wolseley) 0
28 4-5 secs. (79½ miles per hour).	35 2-5 secs. (64 miles per hour).
De Brou (45-h.p. De Dietrich) . . 0	G. P. Burton (40 h.p. Mercedes) 0
31 2-5 secs. (72½ miles per hour).	37 3-5 secs.

CLASS L.—Scratch Race for the Autocar Challenge Cup.—Motor vehicles of any power or weight. The Cup becomes the property of the owner of the car winning it two years in succession, or three times in all. Over flying kilometre.

Name and Car.	Name and Car.
Baron de Forest (70-h.p. Mors) . . 1	J. E. Hutton (60-h.p. Mercedes) . . 0
26 3-5 secs. (86 miles per hour).	30 secs. (75 miles per hour).
M. Gabriel (80-h.p. Mors) 2	S. F. Edge (40-h.p. Napier) 0
26 4-5 secs. 85½ miles per hour).	30 4-5 secs. (74 miles per hour).
L. Rigolly (100-h.p. Gobron-Brillie) 3	E. C. Muir (60-h.p. Mercedes) 0
27 1-5 secs. (83 3-5 miles per hour).	29 2-5 secs. (77½ miles per hour).
Hon. C. S. Rolls (80-h.p. Mors) . . 0	De Brou (45-h.p. De Dietrich) . . 0
28 secs. (80½ miles per hour).	31 3-5 secs. (70 miles per hour).
	G. P. Burton (40-h.p. Mercedes) . . 0
	38 4-5 secs.

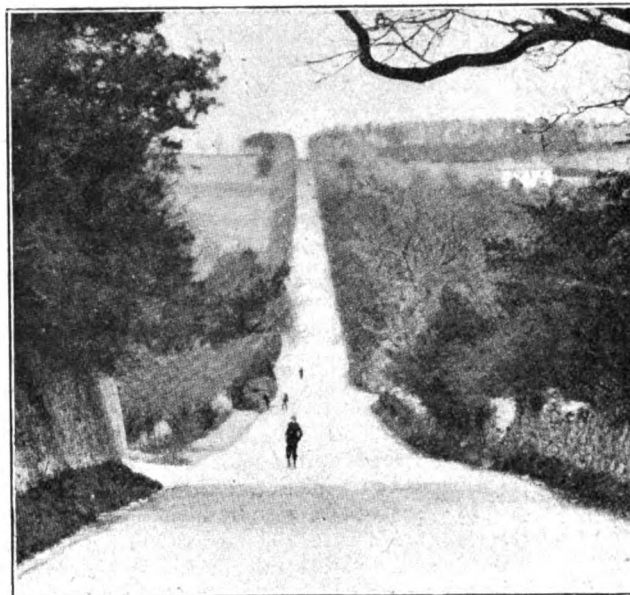
PRIVATE MATCH for £30 Cup, presented by the Club.—Flying kilometre.

Name and Car.	Name and Car.
Hon. C. S. Rolls (80-h.p. Mors) . . 1	J. E. Hutton (60-h.p. Mercedes) . . 0
28 4-5 secs.	

SECOND MATCH.—Flying kilometre.

Name and Car.	Name and Car.
J. E. Hutton (60-h.p. Mercedes) . . 1	Baron de Forest (70-h.p. Mors) . . 0
29 4-5 secs.	

Naturally greatest interest was evoked in the performances of the racing cars. Mr. J. E. Hutton attained seventy-eight miles an hour on his 60-h.p. Mercedes, and the Hon. C. S. Rolls



The Castlewellan Hill Climb, View of Ballybannon Hill.

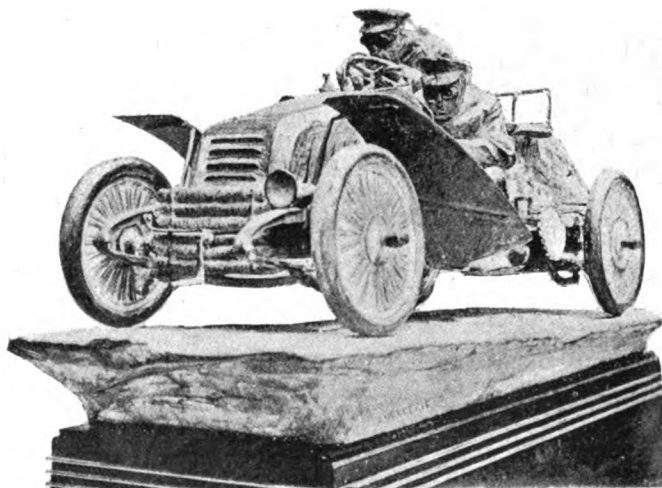
only one mile an hour less on a 80-h.p. Mors. In the Daily Mail kilometre race, Baron de Forest, the Hon. C. S. Rolls, and Louis Rigolly were first, second, and third—all over eighty miles an hour. Later, Baron de Forest attained a speed of eighty-six miles an hour, and Gabriel of 85½ miles per hour.

THE CASTLEWELLAN HILL-CLIMBING AND SPEED TRIALS.

[BY TELEGRAPH.]

NEWCASTLE, 9 A.M., Tuesday.

MOTORISTS have long been astir, and the capacity of the hotel here has been taxed to the utmost. The early trains from Belfast



The Henry Edmunds Trophy.

are bringing a goodly number of excursionists, but, as most of the enthusiastic Ulster automobilists attended the Gordon Bennett race or the speed trials in Phoenix Park, Dublin, there is not

likely to be so large a gathering as if the County Down events were the sole items of the Irish automobile fortnight. Still, the throng of people is great and the hopes of jarveys are rising.

CASTLEWELLAN, 10 A.M., Tuesday.

An early inspection of the road from the Clough to Castlewellan reveals its difficulties. At Clough begin a series of steep descents until the hill at Ballybannon is reached. It is a hill calculated to stir the nerves of a Gabriel or Jenatzy or a Jarrott. Then with a violent descent the road goes straight to Castlewellan, where stands have been erected in anticipation of the demands of visitors. At the top of Ballybannon Hill is the Automobile Club's enclosure, and there the officials are having a last consultation before the events of the day begin. By way of a change, a thought has been paid to the wants of pressmen, and desks provided for their accommodation near the telephone. Evidently recent strictures have borne fruit, and the Club is recognising that its efforts would be of little avail but for journalists, who, up to the present, have been treated with scant courtesy. Changes of plans have been as violent as changes of weather and as difficult to ascertain until too late as any attempt to interview the Clerk of the Weather Office. The road has just been closed to traffic and all side roads leading to the course have been barred. Already we appreciate the cool shade of the tall trees that gracefully overhang the road and render the Club enclosure a delightful rendezvous. Across the road a frail-looking bridge has been thrown, which promises to be useful during the day. The gradients of Ballybannon Hill, as will be seen from the contour, taken from the Club Journal, are severe, the steepest being 1 in 8.7. This extends a distance of 112 yards, while other notable stretches are 1 in 10, and the top part of the hill 1 in 11. The motor-cycle section is run first, and of twenty-four entries only thirteen appear. The six heats become increasingly monotonous, despite some close finishes. In the final two Ormondes and a Chase compete for supremacy, and the hill is climbed in 41 1-5 secs. by Wright on an Ormonde. Then we have a hill-climbing competition for the Edmunds trophy. Originally it had been intended that the course should be 1,200 yards, but this has been reduced to 600. Campbell Muir proves the winner of the trophy, his Mercedes doing grandly. Rolls guides his Mors into second place, and Werner's Mercedes is credited third. A Duryea opened the exhibition in 62 4-5 secs. Those which have travelled the distance within the minute are the Hon. Scott Montagu and E. M. C. Instone on Daimlers, Hargreaves on a Napier, Brun on Villain, Rawlinson on Darracq, Edge on Napier, Hutton and Higginbotham on Mercedes, Austin on Wolseley, and Rigolly on Gobron-Brillié.

1 P.M.

A long wait is caused by the determination of some competitors not to risk the stiff bend between the two hills, a bend that appears very dangerous. Unfortunately the people of Castlewellan know nothing of the change, and although the finish has been reduced to Ballybannon, making the distance only $2\frac{1}{2}$ miles, the cars are ordered to go ahead after finishing, so as to give the people of the little town a bit of a show. It is, however, a sorry pretence and should have been foreseen.

More motor-cycle heats are being run, interest in the proceedings being revived by the Graphic handicap race. There are several absentees; the road has become very dusty, and every car as it starts away into Castlewellan between the two rows of police leaves a cloud of dust that settles uncomfortably on everything.

3 P.M.

Undoubtedly the greatest interest is taken in the racing section for the prizes presented by the Royal Ulster Yacht Club. It is rumoured that these are being withheld until a meeting of the Committee, but the races are run meanwhile. In class J. there is keen competition. Regret is expressed at the absence of Jarrott, who has returned to England, and of Edge, who is acting as a road steward, while many would like to see the Star racer and Mr. Cordingley's 40-h.p. Mercedes on the course. Unfortunately the latter is detained at Dublin. A cry of "Clear

the course!" is raised, and with a mighty rush Hutton comes along, doing the $2\frac{1}{2}$ miles in 2 mins. 20 3-5 secs. Heralded by a cheer, Stocks finishes in 8 secs. less. Ramois, on the Pipe, covers the course in two seconds under 3 mins., and the two Wolseleys take 2 mins. 48 4-5 secs. and 3 mins. 24 4-5 secs. respectively. Rolls, on his Mors, is almost as speedy as Stocks, and then we anticipate the advance of Campbell Muir. He takes one-fifth of a second more than the Gordon Bennett representative, and is beaten by the last competitor, Rigolly, on his 100-h.p. Gobron Brillie, who only takes 2 min. 5 2-5 secs. Result—Rigolly first, Stocks second, Campbell Muir third.

5 P.M.

The brilliant weather continues, and the scene, with the Mourne Mountains in the background, presents one of the most picturesque motor meets yet held in the United Kingdom. A few tourist cars make a second run for verification of their times, and then the event is over. Save for the sudden shortening of the course, everything has been well done and in order.

BELFAST, 10 P.M.

Comparatively few cars have come in here, the majority of motorists having been allured from the official itinerary by the charms of Rostrevor, while others are lingering at Newcastle, and some have gone back to Dublin, whither all should return to-morrow. Reference to the day's events in Ireland has been almost supplanted by the news of the Government's Bill introduced this afternoon. Agreement is expressed with the intention not to require amateur drivers to be licensed, and also the increasing of the tare weight, this being a matter of importance in view of the transit scheme.

The results of the Castlewellan Motor-Cycle Hill Climb are:—Wright (Ormonde), first, 41 1-5 secs.; Hacking (Ormonde), second; Chase, on Chase machine, third.

In Motor-Cycle Speed Trials, up to 114 pounds, Hacking, first; Wright, second; and Stones, on Rex, third. In class for machines up to 170 pounds, Martin (Excelsior), first; Chase, on a Chase, second; and Wright, on Excelsior, third.

In the Graphic Cup contest, J. W. Cross, on Humber, won in 3 mins. 29 4-5 secs., and was officially declared first; Hon. Scott-Montagu, unofficially second; Instone, unofficially third.

In class for Racing Cars under 650 kilos., Rawlinson, first, on Darracq; Le Brun, second, on Prunel. Only two starters.

Mrs. Edge's car met with a mishap near the Giants' Causeway.

On the highest authority we are requested to contradict the rumour circulated in Ireland that the King of the Belgians has offered £6,000 for the car driven by Jenatzy; Mr. Gray Dinsmore has no present intention of selling the vehicle.

At Kildare much curiosity was expressed one day last week concerning a couple of cars driven by military officers and conveying a large party of nuns for a run across the Curragh.

SEVERAL excellent sets of picture postcards were issued in connection with the Gordon Bennett race, but perhaps one of the most curious was that published by Mr. Tempest, of Dundalk. These were after the style of Mr. E. T. Reed, whose "Prehistoric Peeps" have been studied by the artist. As mementos of an important event they are interesting.

In addition to the London tailor mentioned last week as making displays of motor clothing through Dublin agents, Burberry's deserve recognition. Many of the Irish tailors are adding motor departments and their windows are attracting great crowds.

EDGE drove his new car in Gordon Bennett race against express wish of Mr. Napier. His tyres fitted faultily, and we cannot help thinking he would have made a better show had he kept to the original intention of running his old car and using his new one at Phoenix Park. Mr. Alexander Winton has left for Scotland, his native land. Many motorists will ship their cars at Cork, returning to England via Plymouth and the Devonshire roads.

THE IRISH FORTNIGHT.

WE have received a number of letters from competitors with regard to the speed trials held on Saturday last. Mr. A. Goodwin writes:—"I would like to call your attention to the fact that in Class A motor-cycle section the Ormonde ridden by Mr. C. W. Hacking in heat four made fastest time, viz., 2 min. 2.5 sec. for the one mile plus one kilom. Unfortunately, through some misunderstanding with the officials as to the time of the final heat, Mr. Hacking was not present when the names were called, with the result that the Ormonde which had won the fastest heat did not compete."

MR. A. GOVAN writes:—"I send you an account of my experiences in Class D of the Tourist section. Some little while back I entered for the Tourist racing section, and the only correspondence I received from the Club up to the time of my departure from Glasgow was in the shape of a receipt. I was greatly surprised that up to the evening of the 3rd inst. I had received no communication whatever as to how or what time the races on the following day were to be run. However, I saw by the evening papers that the racing was commencing at 8 a.m., and, on arriving, as there were no programmes, rules, or verbal instructions, I came to the conclusion that after I had won my race I had finished and the race would be decided by time. Judge my surprise at finding on my return that the two fastest cars had to run in a final, and that, as I was not there, Mr. Warren Smith, although unaccustomed to the car, had driven it without any authority from me."

THE HON. C. S. ROLLS asks us to mention that the car he drove in the speed trials was one of last year's Paris-Vienna type.

THE Tourist Information Bureau, 6, Westland Row, Dublin, which was open from 5 a.m. until 11 p.m., during the past week, rendered most valuable assistance to motorists of all nationalities. They arranged for a series of wires from Ballyshannon on the day of the race, and which, on arrival, were read with intense interest by dense crowds as soon as posted in the windows.

THE number of Mercedes cars in Ireland has led to the suggestion that their owners should form a Mercedes Club, membership being restricted to such owners.

THE following are the entries for the hill-climbing handicap at Killorglin, co. Kerry, to be held on the 15th inst.:-

Distance about one mile.

CLASS C.—Tourist cars costing £300 or under, which need not carry more than two people.

Name.	Car.
Alfred Burgess	8-h.p. M.M.C.

CLASS D.—Tourist Cars costing over £300, but not more than £650, to carry four people.

Name.	Car.	Name.	Car.
Sir J. I. Thornycroft.	20-h.p. Thornycroft.	E. Brun	12-h.p. Prunel.
J. T. Overton	24-h.p. Georges Richard.	H. Belcher	12-h.p. Humber.
		Alfred Burgess	10-h.p. M.M.C.
		E. M. C. Instone	12-h.p. Belgica.

CLASS E.—Tourist Cars costing over £650, but not more than £1,000, to carry four people.

Name.	Car.	Name.	Car.
J. W. Cross	20-h.p. Humber.	Willard Evart-	15-h.p. C.G.V.
Hon. John Scott	22-h.p. Daimler	Hall	
Montagn	22-h.p. Daimler	George Iden	20-h.p. M.M.C.
E. Manville	22-h.p. Daimler	Alfred Burgess	20-h.p. M.M.C.
E. M. C. Instone	22-h.p. Daimler	Lawrence Vick-	15-h.p. C.G.V.
F. R. S. Bircham	Special design.	ers	

CLASS F.—Tourist Cars costing over £1,000, to carry four people.

Name.	Car.	Name.	Car.
J. M. Gorham	22-h.p. Daimler	J. Ochs	16-h.p. Napier.
A. MacDonald	22-h.p. Daimler		

CLASS G.—Steam Tourist Cars costing not more than £800, to carry full complement of passengers.

Name.	Car.
J. W. H. Dew.	6-h.p. Gardner-Serpollet.

ON Monday a cow came into the way of the car driven by Mr. J. F. Ochs, of London, and, as Stephenson told the Railway Commission on a famous occasion, the result was "bad for the cow"; but, if hurtful to the cow, it was also awkward for the motorists. The car swerved and began to run down an incline towards a bog. The occupants jumped out ere the vehicle had settled itself comfortably in the bog, and no injury was done, but it was a narrow escape.

OUR representative, telegraphing on Thursday morning, remarks:—Mr. Campbell Muir will drive Edge's boat in the Motor Boat Race at Cork. The luncheon by the Lord Mayor of Belfast to motorists was abandoned owing to difficulty of getting them together. Conversation is becoming animated over the decision of the London and North-Western Railway Company to charge owners 50s. for conveyance of cars from Dublin to Holyhead at owners' risk, and £3 at company's risk. A large contingent stopped at Newry on their way back to the capital, and the people of the ancient town saw more cars on Wednesday than ever before. Parties are being made up for tours in the west, but there is a general feeling that little consideration has been shown motorists by hotel keepers, and not a few have declined to join on that account. Everywhere there is praise at the tolerant attitude of the police. The Kerry Council have issued orders closing the road on the 15th inst.

THERE is great weariness among those who have motored thus far, and but few are showing real interest in the further events; in fact, scores have gone back to England, and the number of starters in the Cork and Kerry events will not be great.

ON Saturday evening a dinner was given at the Shelbourne Hotel, Dublin, in honour of the competitors in the Gordon Bennett race.

THE correspondent of the *Velo* speaks thus of the organisation of the course:—"It must be admitted at once that the organisation was both extraordinary and incomparable—such as has never been seen before. Nothing can give an idea of the precautions taken along the whole 168 kilometres of road converted into a track for one day. The competitors were able to drive the whole distance without seeing on the road—outside the controls—either a human being or an animal."

THOSE motorists who have gone northward will find Mr. T. Rigby's illustrated "Guide to Belfast and the North" valuable. The book is written in a literary style not always associated with such works and without the verbiage that lengthens volumes but wearies the reader. The chapter on "How to see Belfast" is particularly good and will be appreciated by those who wish to see a great deal in a little time. And where is the motorist who does not come within that category?

AN interesting run from Dublin is to Dundalk—a distance of just over fifty miles. The first ten miles of uneven road are rather disappointing as far as Swords, where the round tower is a conspicuous landmark. After Drogheda is passed, the road improves, and it is quite a fine run through Dunleer, where Mr. Bernard Cannon has a stock of petrol, to Dundalk.

MR. M. T. WOODS, of Newbridge, informs us that good accommodation can be obtained for motorists and cars in his town during the tour. It is the nearest large place to Ballyshannon cross-roads, and he has just received a large consignment of Carless and Capel's petrol, as well as spare parts, etc., in view of likely contingencies.

A MEETING in connection with the improvement of means of transit has been held in the Cumber Claudy district of co. Derry. The Mayor of Derry wrote hoping that a good service of motor cars would be established between his city and Cumber. Resolutions were passed approving of the scheme, and appointing a deputation to wait on the District Council to improve the roads as a preliminary step.

CONTINENTAL NOTES.

By "AUTOMAN."

THERE has been nothing else talked about in automobile circles or written about in automobile papers on the Continent except the great Irish race. Indeed, the daily papers have almost without exception had columns of news telegraphed by the special reporters from the scene of action, and every little detail of Irish life, even the comicalities of Irish expression, have found their echo, mutilated and unrecognisable by translation, in the Continental press.

ONE thing is quite certain. The A.C.G.B.I. may be very proud, and very justly proud, of the unstinted praise they have got on the subject of the organisation of the race. According to the Continental press the arrangements and the organisation

to follow more closely what has been done up to date on the Continent! How often has it been thrown back at me that these racing cars in France were freaks and had no stability; and if they were light, were so at the expense of strength. The whole absurdity of these arguments has had a telling proof on the Irish course of the Gordon Bennett race, and once more I repeat that the cars in question are not freak cars, but are ordinary touring vehicles with racing bodies. Every part and parcel of them may be copied next year by those who wish to have powerful and strong automobiles. By this I do not wish it to be understood that I advocate high speeds for touring on the common roads, nor high powers for tourist cars; but the question of what is high power and what is high speed is one which is entirely relative, and which we are not yet in a position to decide. Only four short years ago a 12-h.p. car was regarded as a high-powered vehicle, whilst to-day a 40-h.p. Mercedes is considered a reasonable car.



Rigolly on the 100-h.p. Gobron-Brillie he drove at the Phoenix Park Trials.

[La France Automobile.

have outdone anything that has ever been attempted before on the Continent, where the experience of years in road-racing has enabled organisation to be brought to a fine point. Nothing comparing with the complete and good organisation in the Irish race has ever been seen.

FRENCH automobilists see with chagrin the Cup going across the frontier to their hereditary enemies. But they console themselves very greatly with the fact that all the three French cars completed the course in excellent time, and without the slightest hitch, whilst no other nation's cars could stand the test. The length at which the French very reasonably enlarge on this point is quite excusable, when we remember that for years the cry in England has been that the French cars were only suitable for French roads and high speeds, but would not stand the racket of the English roads. How many times in these notes have I fought against this popular error, and advised English makers

WITH regard to the trade in general it is a good thing that the Gordon Bennett Cup has gone to Germany, and few people will begrudge the success of the Cannstatt firm, especially when it is taken into consideration that the cars they had built for the race have been burnt in the fire which destroyed their factory, and that they have, like plucky sportsmen, come into the field with their ordinary touring car, and won with that. In addition to the fire the difficulties of finding drivers for the Mercedes car has been very great, on account of the action of the German Automobile Club; and in spite of all this they carried the day!

ALREADY speculations are being made as to where the race can be run next year, and it has been taken for granted that the Emperor will show great interest in the race, which is quite probable. Germany is far behindhand in automobilism, and, strange to say, not 5 per cent. of the production of the Cannstatt

Works remains in its country of origin. The Cup race will, it is to be hoped, stir up the sport of motoring, and make a further increase in the trade.

SANTOS-DUMONT, the little Brazilian aeronaut, has certainly the most remarkably good luck. He seems to be able to have all sorts of mishaps in the air without any serious consequences, whilst other aeronauts are hurled to destruction without the slightest warning. Last Sunday, on his little No. 9, he went to visit the Island of Puteaux in the River Seine, close to Paris, where the Tennis Tournament was going on, and in the first place got his guide ropes entangled with the electric wires. A few minutes afterwards the carburettor of his motor got on fire, and, as his motor was behind him, he did not see it for some time. When he did, however, he walked coolly back along the keel and beat out the fire with his Panama hat. He was unable, however, to continue his promenade, and had to have the balloon hauled back to its shed. At the time of the accident he was a hundred feet up in the air, so that, if the balloon had caught fire, there would have been another disaster to record.

THE German Automobile Club, the German Acetylene Society, and the Mid-European Motor-Car Club are jointly organising a competition of acetylene lamps and headlights for motor-cars. Those entering the competition must send one head-light and two lamps, together with drawings and working instructions, to the German Automobile Club, 4A, Sommerstrasse, Berlin, before February 1st next. The lamps will be tested both in the laboratory and on the road. The entrance fee is 10s. for head-lights and 15s. for each pair of lamps. Prizes of £30 and gold and silver medals are offered.

"LA FRANCE AUTOMOBILE" announces an important competition for March, 1904. It intends organising an International Contest of Durability and Consumption, &c., between Paris and Rome, for which our contemporary offers a first sum for prizes of £800 in cash. The route will be from Paris to Rome *via* Dijon, Lyons, Avignon, Marseilles, Nice, Genoa and Florence.

THE Ostend Automobile week, which is being organised by the Automobile Clubs of Antwerp and Flanders, and which commences on Saturday, the 11th inst., promises to be very successful and should be largely attended. The first day is to be devoted to a series of speed trials over ten kilometres for all classes, the second day (Monday, 13th inst.), to the tourist cars over five kilometres, while on Tuesday, there will be a competition in intricate driving at the Wellington Hippodrome, followed by a flower fete along the sea front. On Wednesday there will be a series of mile trials from a standing start; on Thursday the competitors will be required to make the tour Ostend, Nieupoort, Furnes, Ypres, and back to Ostend by Bruges. Friday, the 17th inst., is to be devoted to kilometre trials between Snaeskerke and Ostend. The week will be closed by an exhibition of the competing motor-cycles and cars. The entries include Baron de Caters (Mercedes), Messrs. Hautvast (Pipe), Guders (Pipe), Rigolly (Gobron-Brillié), Augieres (Mors), Baron de Crawhez (Panhard), Baras (Darracq), Jarrott (Napier), Jenatzky (Mercedes), etc.

MR. G. SHRAPNELL SMITH, who has been well known in Liverpool automobile circles, is coming to London, and will locate himself at Cecil Chambers East, Strand, W.C., as a consulting and advisory engineer, paying particular attention to heavy vehicular traffic. He has also accepted a position on the board of the Lancashire Steam Motor Company of Leyland.

MESSRS. SALSURY AND SON, LIMITED, the well-known motor lamp makers have sent us an example of a fine new showcard they have just got out. It is finished in a washable process known as geloleum and depicts a motor-car, the headlights on which are brilliantly lighting up the road. Messrs Salsbury will be glad to send showcards to those motor agents who apply for the same.

MOTOR-CYCLING NEWS.

THE annual Catford Hill Climb took place at Westerham on Saturday last. The classes were divided according to weight, Class 1 being open to motor-bicycles up to and including 125 lbs.; Class 2, up to and including 170 lbs. A gold medal was given for fastest time, and certificates to all who reached the top. Of the fifty-one entrants, thirty-seven started. The course was from a point about 100 yards below the cross road at the bottom of the hill, to just beyond the danger board at the summit, a distance of about 1,200 yards. Some exceedingly fast times were accomplished over the course, which included one gradient of 1 in 6.25. A. J. Randall, on a 2½-h.p. Bat, won both classes. In Class 1 his time was 1 min. 31 sec., and in Class 2 1 min. 35 sec. J. van Hooydonk on a new pattern 3-h.p. Phoenix, was second in Class 1; his time was 1 min. 37 4-5th sec. H. A. Collier was second in Class 2, on his 2½-h.p. Matchless, his time being 1 min. 37 sec.

MR. V. LEWIS, of Adelaide, one of the motor-cycle pioneers in that part of Australia, has recently been doing good work in bringing out the utility of motor-bicycles for rapid work. On the occasion of the Adelaide Cup in May last he offered to provide machines and riders to convey the result of the races from the course, 5½ miles away, to the two newspaper offices. In all, six journeys were made each way in the average time of fifteen minutes for the 5½ miles. The fastest trip was accomplished in 12 minutes, an excellent performance, having regard to the rough and dusty road.



Photo by) The Members of the Liverpool Motor Cycle Club at Ormskirk. (Mr. J. Edge

A CARDIFF doctor, writing to the *Lancet*, remarks that the advantages of motor-cycling as a means of locomotion for professional men are not sufficiently appreciated. During the last few months he has ridden hundreds of miles on a motor-bicycle. "During last March I decided to get a motor-cycle, and, after careful consideration and consultation with some motor-cycling friends, I decided that a 1½-h.p. machine with a 22-in. frame was the most suitable for my work, and I accordingly procured one. I had no difficulty in familiarising myself with the working of this machine, for its construction is simplicity itself. Needless to say there have been some temporary troubles such as occur to all cyclists, but I have had no serious mishap or breakage. In the second week of April I was able to dispense with the services of one horse and in the first week of June with those of a second. I do not care for cycling in wet weather, and I am, therefore, not able to dispense entirely with horseflesh. The machine has given me a great deal of pleasure, and I have been able to get over my work in a much shorter time. My health is also much better, as I am now compelled to take more exercise. These facts are sufficient to indicate that motor-cycling may be not only pleasurable but also profitable to the medical practitioner. The one drawback to motor-cycling is the vibration, but this I have reduced to a minimum in my machine by not inflating tightly my front tyre and by employing a large motor saddle."

THE ARCHBISHOP OF DUBLIN'S FIRST MOTOR RIDE.

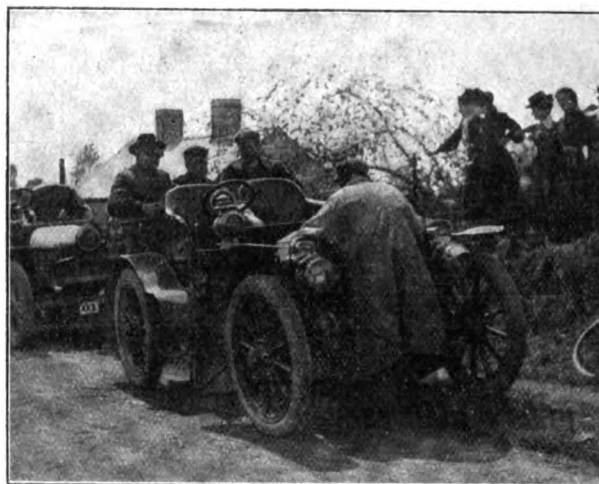
HERE was quite a stir in Ireland, and particularly in Dublin, last week, when it was announced that His Grace the Rev. Dr. Walsh, Archbishop of Dublin, had taken his first motor-car trip, and that he had been venturesome enough to go over one circuit of the Gordon Bennett course at a speed which in many places was sixty miles an hour. For a man of his age the incident was not only interesting, but also a testimony to his ability to keep abreast with modern movements.

Last week we published a telegraphic account of the trip, and His Grace was certainly most impressed. Seated in the tonneau with the Archbishop and his private secretary, we were able to observe how keenly he watched every curve of the road and every turn of the car. The ease with which the vehicle was steered, and the marvellous control, were facts which proved impressive, and although the Archbishop frankly confessed he would not have made the trip had he known the speed we intended to travel, he, as candidly, acknowledged how he had enjoyed the run, and that it was not so great an ordeal as he had anticipated it might be. Passing beyond Old Kilcullen, the view of the

we dashed over Mageney Bridge as though the race had already begun. "Quietly, quietly," echoed the chaplain, in fearing tones, as though he had visions of Dublin placards announcing the overthrow of Dr. Walsh. Our friends were so accustomed to driving behind horses that the warning usually applied to quadrupeds flew lightly from their lips on a motor-car. But when all the corners had been negotiated and we swept into the straight road from Athy to Ballyshannon both reverend gentlemen were delighted with their wonderful ride.

And then we drove to Cookstown, where the Archbishop was going, and great was the surprise of the priests awaiting his arrival as they saw him draw up in such a state of dusty dignity. Most hospitable were our hosts and most interested was the Archbishop, whose zest for motoring has thus been whetted, and we fancy that, even at his advanced age, the Rev. Dr. Walsh will become a convert to the automobile, which he rightly recognised as one means of visiting his diocese that would devour space and lengthen his time to a considerable degree.

From the Board of Agriculture comes another sectional map on the scale of two miles to the inch. It relates to the Hastings district and covers an area of country ranging from Pevensey in the south to Tunbridge Wells in the north, and from Lewes on the west to four miles east of Rye on the eastern side.



The Rev. Dr. Walsh, Archbishop of Dublin, on Mr. C. Cordingley's Mercedes Car. The Archbishop is seen on the extreme right in the first picture and on the left in the second one.

landscape was quite novel, the whole countryside being opened out to view without any of the encroachments on the vision associated with ordinary railway locomotion. Beyond Carlow, round the old courthouse of which we rushed in grand style, a great wall of dust was beheld. It surprised His Grace, who, but for the brilliant whiteness of the scene, might have imagined he was entering a London fog. Certainly it was thick and close, and, there being little breeze, the dust stood stationary awhile. Into the substance—for it was tangible and clinging—we rushed. After about a mile with the horns continuously blowing, a motor-car was descried. At first the driver put on all speed and gamely attempted to get away. But his effort failed—for a Mercedes was in pursuit, and we quickly emerged from Dustland to bright open sunshine. The wall was behind, and the lesser vehicle was suffering alone, and with passengers breathing, let us hope, all good wishes to ourselves.

Meanwhile we had become transmogrified. The black clothes of the prelate and his chaplain resembled a miller's suit, and no sombre hues remained to darken the view. Begoggled and bewhited, the Archbishop was enjoying himself.

But when the nasty turns began and the road grew as insidious as a diplomatist, its sinuous course puzzled His Grace and perplexed his chaplain. "Quietly," said the Archbishop as

THE Gateshead Town Council has decided to purchase a motor waggon, at a cost of £480, for the haulage of stones for road-making.

At the summer meeting of the Institution of Mechanical Engineers, to be held in Leeds from the 28th to the 31st inst., Professor Hele-Shaw will read a paper on "A New Form of Friction Clutch."

"GOLDEN RULES FOR MOTISTS" is the name given to a little book, compiled by Captain W. Phayre Ryall and published by Messrs. B. Thompson and Company, Limited, of Frome. The rules consist of useful hints to motorists; they are brief and terse, so that the captain gets a large amount of valuable information into a small compass.

DURING the early part of last week over a hundred motor-cars passed through Shrewsbury on the way to Holyhead. Only one accident in the neighbourhood is reported. A 16-h.p. car belonging to a Norwich gentleman was being driven up the steep gradient known as Wyle Cop, and was stopped at the top in order that inquiries might be made as to the way to an hotel. On restarting the car ran back, and, colliding with a large electric light standard on the edge of the pavement, knocked it down.

HERE AND THERE.

THE Duke of Manchester has a Brush car on order.

TO-DAY the members of the Yorkshire Automobile Club will hold a run to Harrogate.

THE Mobile Motor Engineering Company, Limited, of Birmingham, were last week fined £5 and costs, for storing 13½ lbs. of carbide of calcium without a licence.

MAJOR LANG, of the East Sussex Constabulary, has just acquired a 10-h.p. Wolseley tonneau. The Wolseley Company have also just supplied a 10-h.p. car to the London County Council Fire Committee.

WE have received a copy of No. 7 of the "University of Birmingham Engineering Journal," a well got up and interesting little publication. In the issue before us Mr. Henry Lea M. Inst. C.E., concludes his "Diary of a Motorist."

AN order has been issued by the Chief of Police of Omaha Neb., directing policemen to "stop and arrest all automobilists proceeding faster than the ordinary gait of a horse, or more rapidly than they could stop their machines at short notice."

THE Motor Cycle Trades Association, Limited, has been registered with 250 members, each liable for 5s. in the event of winding up. Object, to encourage, promote, and protect the motor cycle and kindred trades in the United Kingdom or elsewhere.

FROM the office of the New York Secretary of State at Albany it is reported that 4,400 names of automobile users have already been registered in compliance with the provision of the Bailey law. New names are being received at a rate of over 150 a day.

ON Saturday, the 27th ult., H.R.H. the Prince of Wales accompanied Mr. Leopold de Rothschild on the latter's 16-h.p. Napier car to the Agricultural Show at Park Royal. The Earl of Derby was also a passenger on the car, being delighted with the trip.

AT the last meeting of the Liverpool Chamber of Commerce it was reported by the Association of Chambers of Commerce that no satisfactory answer had yet been received from the Government with regard to the tare limit on motor vehicles, and that the matter had accordingly been put into the hands of the Commercial Committee in Parliament.

RAPID progress is being made with the new road now under construction from Songolodo, on the Congo Railway, to Popokabada, on the Kuango. The distance is about 310 miles, and the road, which is to be nine yards wide on the plain and five yards in the mountain, is built especially for traffic by the new motor wagons ordered by the Government. These vehicles will haul loads of two tons over the road at the rate of 20 miles a day.

THE latest addition to the well-known guides published by Messrs. Adam and Charles Black is one entitled "Around London, North Side." It has been edited by Mr. A. R. Hope Moncrieff, and takes in a part-circle roughly drawn from Watford to Epping. The work is divided into four main chapters—to St. Albans, The Great North Road, Enfield and beyond, and Epping Forest—while five maps are provided. The guide is one that can well be recommended to metropolitan motorists.

A SPECIAL meeting of the Norfolk County Council was held at Norwich, on Saturday last, when, during the consideration of the report of the Standing Joint Committee, Mr. Pratt raised the question of the speed of motor-cars, and said it had come to his knowledge that the Chief Constable had given instructions to the police to take the time of motor-cars on lonely and unfrequented roads. He thought the most stringent regulations should be enforced against careless drivers, but it seemed to him the action of the Chief Constable, pending legislation, was vexatious and unwise. The Clerk said in September, 1900, a resolution was passed by the Council to the effect that the Chief Constable was to exercise extreme vigilance in order to secure the conviction of offenders against the motor bye laws,

THE Hydroleum Motor Co., Limited, of Willesden Junction, have established a special department for the repair of heavy steam lorries.

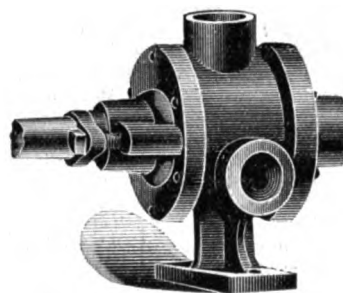
FROM the General Incandescent Arc Light Company, 115, Cannon Street, E.C., comes a handy vest-pocket address book, in which the electrical products of the company are incidentally mentioned.

MR. A. C. HILLS has resigned his position as managing director of the Goodyear Tyre and Rubber Co., and has joined Mr. E. H. Hart as manager of his automobile business. Mr. Hills will retain a seat upon the board of the Goodyear Co.

THE Countess of Jersey gave her third garden party at Osterley-park on Saturday last. There was a very large attendance, the three special trains being crowded, but a great number of the guests drove or travelled in motor-cars from town.

THE Motor-Horse Company, Limited, has been registered with a capital of £100,000 to adopt an agreement with the Centre-Steering Tractive Company, Limited, W. H. Carmont, and W. E. Carmont, and to carry on the business of manufacturers of and dealers in steam, electric, and other engines, motors, etc.

THE accompanying illustration shows the Lobee Rotary Circulating Pump for Water-cooled Motors which has been put on the market by the South British Trading Co., Limited. It gives a positive circulation of the cooling water, can be operated at a high or low rate of speed without affecting the efficiency of the pump, and can be run as high as 1,500 revolutions per



minute. At 100 revolutions it is claimed to be able to circulate one gallon of water per minute. The pump, which is made entirely of bronze, is almost noiseless in action, simple in construction, and can be operated either by sprocket and chain, pulley and belt, or friction pulley. The temperature of the water does not affect its working, as trials have shown that it will pump boiling hot water.

THE latest addition to the list of souvenir guides published under the auspices of the Health Resorts Association is one relating to Aberystwyth. It is beautifully got up, and anyone intending visiting this well-known Welsh seaside resort cannot do better than write for a copy to the town clerk, who will send one free to all applicants by letter or post-card.

A COLONIAL reader of the *Journal* writes from Geelong, Victoria:—"Motoring in this country is only in its infancy, and it is a great novelty to see a car. I regret to say that its usefulness is not appreciated as much as it should, as our Legislators have put a duty of 20 per cent. on all cars imported, and before charging this 20 per cent. 10 per cent. is added to the invoice, making the duty work out at 22 per cent., rather a heavy item."

THE chief constable of Hampshire issued the following notice with reference to the review by the King. "Motor cars.—It is anticipated. there will be heavy traffic on the Farnham and Farnborough road on this occasion. Motor-cars will not be permitted to travel at a greater speed than that of the ordinary vehicular traffic on this road between the following points: Farnborough Railway Bridge and Royal Pavilion Gates, Aldershot. Motorists are requested to assist the police by observing this request."

CORRESPONDENCE.

THE ANTI-MOTOR CRUSADE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The balderdash which has been published recently has, no doubt, emanated from three classes of the community, namely, (1) the antiquated progress haters who recall with envy "the good old times" of the stage coach, when it took two days to accomplish a distance which can now be covered in three or four hours; (2) meddling busybodies, who like to see their names in print; (3) contemptible individuals of a jealous disposition, who would perhaps like to have a motor-car themselves, but, as they see no prospect of ever possessing one, would, if they could, render it illegal for anyone else to enjoy one. Now, Sir, in all probability, not one of these anti-motorists has ever been on a motor-car, and it would be interesting to know the extent of their joint knowledge as to its construction. This is, no doubt, the reason why motorists have treated them with a kind of indulgent pity, and refrained from entering the arena of printed warfare. At the same time, it is as well not to allow these cranks to have matters all their own way, and perhaps, as one who has constantly used a motor-car for four years without having once collided either with a pedestrian or a vehicle, they will forgive me for offering them a little advice by recommending them first to study the object of their invectives; then seek an opportunity of riding in a car, then to reflect what silly asses they have been for braying without a cause! I confidently assert that there is as much (if not more) safety in a motor-car driven by one who thoroughly understands it, as there is in a hansom cab, and recent tests have proved that a motor-car can be stopped in infinitely less time than is required to pull up a horse going at much less speed. The industry is sufficiently hampered without these shrieking ignoramuses trying to still further fetter it. I would remind them of the outcry which was raised against the cycle some fifteen years ago, and would ask them whether any of the surviving writers of indignant letters against that invention—which has done, perhaps, more than any other to circulate money and open up hitherto inaccessible or neglected beauty spots of our country, to say nothing of the employment it has afforded to many thousands—would now like to own the authorship of such twaddle?

It is agreed by all parties that the present law is ridiculously inadequate, and if the law is an ass, some of its minor administrators deserve the appellation with an expressive adjective. It is, indeed, an outrage, and nothing else, that magistrates should be so flagrantly prejudiced. There was a case reported in the papers only last week where a magistrate actually commended a constable for the part the latter had taken in the prosecution of a motor-car owner, before hearing any evidence to show that the prosecution was justified! Needless to say that, whatever the merits or demerits of the case, the poor defendant was heavily fined. No one appreciates more than I do the necessity for caution in busy thoroughfares, but from my office windows I have seen motor-cars which have been travelling down one of the busiest streets of Birmingham at the rate of about twenty miles an hour pass unchallenged, whereas if one keeps within, or slightly exceeds legal limits in a trafficless open stretch of country, many miles from the city, where there can be positively no danger, one is almost sure to be summoned by one of the loafing constables who must, at all hazards, secure "cases" in order to justify their selection for the particular duty of watching motors. This is a fact which needs no comment. Surely there should be a distinction made between city and country, and if it is considered safe for a motor-car to travel through busy city streets at twenty miles an hour, I think you will agree with me that some latitude should be allowed in isolated country districts where traffic is practically unknown. By all means let every precaution be taken in the interests of public safety, either by licence of efficiency or otherwise, and let there be an efficient means of identification. Of one thing I am convinced; in spite of the hysterical shrieks of nincompoops, and in spite of the glaring injustice of antiquated magistrates suffering from old age and nerves, the motor-car has come to stay, and the sooner the law is modified on more common-sense lines, and its administration entrusted only to men of common sense with unbiased minds, the better will it be for the entire community.—Yours truly,

FAIR PLAY.

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With further reference to the Duryea Motor-Carriage Company's letter in your last issue, can they tell me why such firms as Benz, Léon Bollée, Delahaye, Peugeot, who, from the beginning of the motor-car industry, fitted horizontal engines, have now abandoned them in place of vertical ones? I have noted the performance of the Winton cars in the Gordon Bennett Cup race, and although they, perhaps, did not have trouble from engine lubrication, the fact remains—vertical engines won. What continental race has been won by a car fitted with horizontal engines in the last three years?

With reference to motor racing. Through winning the Paris-Vienna race, Renault sold 200 cars! (I have heard this on what I consider good authority.) The actual result of the Paris-Berlin race was the placing of orders with France for motor-cars to the value of £4,320,000. I must certainly agree that to race at eighty miles an hour for a kilometre proves nothing. But a race like the Paris-Vienna, where awful roads were met,

any faulty part in the construction of a car would by all means give trouble under these conditions. Look at the money that has gone into Cannstatt for Mercedes cars. But when did the Mercedes show its superiority? At last year's Nice races. I should like to know how much money will be left in Ireland when the Irish Fortnight is finished?

I quite agree with one part of the Duryea Company's letter, where they say that a silent exhaust was ignored by manufacturers some short time ago. But it is thanks to racing that we have discovered that it is not necessary for a car to "bellow like a bull" to be fast. Take the 60-h.p. Mercedes. This car can be made to resemble a sewing machine when necessary. But the Gordon Bennett Cup has proved (again thanks to racing) that neither America, France, nor, I am sorry to say, England can produce such a reliable, fast, silent, racing car as Germany. And what is the result? All those who failed will try and make better cars for next year, for they have found out the weak points that require careful attention. This is one instance of what the Gordon Bennett Cup has done for the motor industry. Apologising for the length of this letter,—Yours truly,

S. J. C. NIXON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think that far too much importance is placed on making racing motor-cars, and the only thing that it has done is to make builders lay down machinery that is only fit for building this class of car, and will be a dead loss unless a demand can be maintained for racers. The motor makers have fallen over themselves in their frantic efforts to outdo each other in producing speedy motor-cars, the total result being that they have wasted thousands of pounds, neglected the main point of putting a car on the market to suit the general user, and done their very best to get all kinds of restrictive laws passed to crush the pastime. I maintain that persons like myself, who are waiting for a good two-seated car, derive but little satisfaction from the statement that makers are building 100-h.p. ostensibly in order to give us a reliable car. I can hardly think that the makers are working so hard on our behalf.—Yours truly,

W. T. W.

REPAIRERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As the motor-car industry is being ruined by people who make a practice of overcharging automobilists for slight repairs, I think it only fair that your readers should have the benefit of my experience at a seaside resort on the South Coast.

A short time ago I was stranded one Sunday with a 8-h.p. car, owing to a slight stoppage between the petrol tank and the carburettor. I garaged it at one of the local cycle repairers, with written instructions that nothing was to be done to the car without an estimate being first submitted to me; but, in spite of this, he sent me in a large claim for all kinds of imaginary repairs. Fortunately I was fairly conversant with the mechanism of the car, and therefore refused to pay his extortionate charges.

Should any of your readers have occasion to leave their cars at the local plumbers, who suddenly develop into "Motor-car Engineers," they should see that they are recommended by the Automobile Club, or, at any rate, be sure that they leave written instructions before an independent witness that no alterations are to be made without a written estimate being first submitted. I enclose herewith my name and address, and should be pleased to give any of your readers more particulars of this experience should they desire it.—Yours truly,

"WEE BIT."

A PLEA FOR THE LIGHT RACING CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As one who has had considerable practical experience with motors for some years, and has followed with great keenness the evolution of the racing car and the performances of various makes, the fact that makers are still striving to build bigger cars with more powerful engines fills me with surprise. People are continually saying to me, "Well, what is the use of building these enormous cars when the light and small cars are nearly as fast?" The triumphs of the 30-h.p. Renault in the Paris-Madrid race and the Darracqs in the Circuit des Ardennes justify this statement, and, with other performances, prove that the 30 or 40 h.p. light cars were nearly as fast, more reliable, and certainly less dangerous. A driver has greater control over a light car than a large one. This is proved by the fact that the fatal accidents which have occurred from time to time both to tourist and racing cars have, in the great majority of cases, been confined to cars of the heavy type. The late Paris-Madrid race is a good example of this.

Again, the heavy car costs the maker £2,000 or more to build, whereas the light car costs probably less than half. It is interesting to note, taking the average pace of all the teams running in the Paris-Madrid race, that although the Mercedes, with twelve heavy cars running, comes first, with an average time to Bordeaux of 7 hrs. 28 min. 58 sec., the Darracq, with eight light cars, comes a good second, the time being 7 hrs. 44 min. 25 sec. Only one Renault ran to Bordeaux, this car accomplishing the second fastest individual time, and although of only 30-h.p. was but 15 min. slower than Gabriel's 80-h.p. Mors, probably the fastest car ever turned out by any firm.—Yours truly,

H. H. BOWDEN.

CLUB NEWS.

THE LEICESTERSHIRE AUTOMOBILE CLUB.

This Club, which has now a strong following both in town and county, had a most successful run from Leicester to Belvoir Castle on Saturday, the 27th ult. The weather was almost as perfect as could be wished for motoring, and nearly a dozen cars took part in the trip. About 2.30 the automobilists began to assemble outside the Bell Hotel, and by three o'clock some half-dozen vehicles were ready to take part in the run. Mr. E. G. Mawbey, the president of the Club, with his wife and family, had taken his car to Belvoir earlier in the afternoon, he having arranged to undertake a much longer journey to Skegness later in the evening. The party from Leicester numbered about 25, and included Colonel Powell, Mr. R. E. Parker, Mr. and Miss Bennett, Mr. and Mrs. Waite, Messrs. S. W. and T. C. Clarke, Mr. W. Dalrymple, Mr. R. Canning, and Mr. A. McAlpin (hon. secretary). About three o'clock the secretary gave the order to start, and a few minutes later all the cars were under way. The route selected for the run afforded a glimpse of some of the prettiest scenery in the Midlands. Mr. H. R. Harding, the treasurer of the Club, and an enthusiastic motorist, joined the party near Syston. The roads here are among the best in the district for motoring, and taking advantage of this fact, the cars sped along at an increased speed, and the passengers were able to enjoy the delight of motoring to the full. A capital view was obtained of the Wreake Valley and the surrounding scenery, the country appearing at its best after the freshening influence of the recent rains. After passing Melton the scenery changed somewhat, and became more picturesque, as the wooded vale of Belvoir, with its stately castle towering above the trees, was approached. After a splendid run of about two and a half hours, the party reached Belvoir, and by this time everyone was ready for a substantial tea, served in a marquee adjoining the Peacock Hotel.

The return journey was begun about seven o'clock, and in the cool of the day proved even more enjoyable than the outward trip. A halt was made at Melton about 8.30, where the hospitality of Colonel Powell, a vice-president of the Club, proved not unwelcome. Leicester was reached about 10 o'clock, the total distance covered being nearly 60 miles. The run was considered the most successful of the season.

REFUSING TO STOP.

At Winsford (Cheshire) last week, Thomas J. Stubbs, salt proprietor, was sued for £5 damages to a horse. Evidence was given that plaintiff's horse was in charge of a trainer, who put up his hand for defendant to stop his motor. Defendant neglected to do this, and the animal reared, plunged, and fell to the ground, injuring itself severely. Judgment was entered for the plaintiff for £5 and costs.

DAVID ALLAN, motor-car driver, Glasgow, was convicted at Jedburgh Sheriff Court last week, of having refused to stop a motor-car when the driver of a horse and trap held up his hand. Sheriff Baillie fined him £10, the alternative punishment being fourteen days' imprisonment. Sheriff Baillie said this was the first case of the kind in the town. One of the most important sections of the Act was that which required drivers of motor-cars to stop when a hand was held up, and whenever any case came before him in which the driver of a motor-car refused to stop, he intended to impose the highest penalty.

In Forfar Sheriff Court last week Alexander French again appeared before Sheriff Lee, in response to a summons for refusing to stop. David Fenton, farmer, stated that on June 9th he was driving in a gig along from Forfar to Kirriemuir. When going up Redford Brae he saw a motor-car coming down the hill from the opposite direction. When about sixty or 100 yards away the horse, which appeared to notice the car first, became restive. There was a dog in the car yelping furiously. He signalled with his hand and also shouted to the driver to stop. His horse went straight across the road, and it was fortunate there was a bank for the vehicle to back into, otherwise something serious would probably have happened. The Sheriff said that it might be a question regarding the circumstances which would justify the driver of a horse holding up his hand by way of signalling. Under the regulations of the road he was apparently not required to put up his hand and demand the driver to stop unless his horse was restive. In the present case it had been proved that Mr. Fenton held up his hand and shouted to stop, and when a person was compelled to back into a bank, that surely proved that the animal was restive. He did not think this was a very serious case, seeing no harm or injury was done. Regarding the noise created by the dog, his Lordship said this was undoubtedly an impediment, and it certainly added to the alarm. He believed the car would often pass sheep, men, and horses in safety if the dog was removed, and accused, he thought, should take the matter into consideration, as it was evident this animal was very unpopular. In conclusion, his Lordship said that he would modify the penalty to a fine of £1, with the alternative of three days in prison, but warned the accused that if in future road regulations were broken he would impose a penalty which would be felt.

MOTOR-BICYCLE FATALITY.

At Monkwearmouth on Wednesday last week Mr. Deputy Coroner A. T. Shepherd held an inquest on the body of J. J. Whickham, twenty-three, who died from the result of a motor-bicycle accident. Harry Welding, manager for the Rudge Whitworth Company, at Vine Place, Sunderland,

said the deceased was employed at their depot, and left at eleven o'clock on Monday, the 29th ult., to go to Washington. He went on his own motor-bicycle. Witness saw him at three o'clock at the hospital, but he was then unconscious, and he died at a quarter to five. He had since seen the motor-bicycle. The front forks were broken at the crown, just where the brazing ceased. The machine was not built by the Rudge Whitworth Company. The deceased, who got the machine himself, was an experienced man with motors, and an expert rider. William Watson deposed that he was near Hylton Castle when he saw the deceased coming along on a motor-bicycle in the opposite direction. The machine broke down, turned right over, and the deceased fell on his head. Witness went to his assistance. A trap was procured, and the man was taken to the Monkwearmouth Hospital. The jury returned a verdict of "Accidental death."

A MECHANICIAN SENT TO PRISON.

At the Clerkenwell Sessions last week Emile Soland, a French mechanic, pleaded "Guilty" to having caused bodily harm to Hugh Richard Evans by wilful neglect and furious driving of a motor-car in Foubert's Place, Regent Street, on May 3rd. It was urged in extenuation that the affair was more of an accident than misconduct, owing to the condition of the traffic, and that the accused's employer had compensated the injured man with £100. His lordship said the case was far different to others he had tried, but he felt bound to order Soland a week's imprisonment in the second division.

THE EDINBURGH MOTOR-CAR FATALITY.

In Edinburgh Sheriff Criminal Court last week, before Sheriff Rutherford and a jury, Alexander Mack was tried on a charge of having, on May 23rd, in Dalry Road, Edinburgh, driven a motor-car against Elizabeth Henderson, and killed her. Accused adhered to his plea of not guilty. After hearing all the evidence his Lordship summed up. The jury, after an absence of eight minutes, returned with a unanimous verdict of not guilty, and wished at the same time to convey their sympathy to the bereaved husband. The accused was accordingly discharged.

POLICE TRAPS.

THE cases at West Hartlepool are a result of a police trap at Greatham Bank.

THERE is a measured quarter mile on the Oxford and London road at Aston Rowant.

A POLICE trap—a measured quarter-mile on the Nettlebed road—has resulted in a batch of furious-driving cases at Henley.

MOTORISTS visiting Ruabon must beware of a police trap, telephonic communication having been established between the police station and Johnstown.

A CORRESPONDENT informs us that there is a police trap on the road between Brockenhurst and Lymington, about two miles from the latter. A measured 440 yards on a straight length of road between the New Inn and Batransley Cross Roads is the spot.

A MEASURED quarter mile has been marked out between Utley and Hawcliffe Wood, one mile north of Keighley on the Skipton road, several motorists being caught on Saturday last. A correspondent informs us that it is advisable to drive slowly both before and after the measured distance, as there is a likelihood of it being moved nearer or further away from Keighley.

FURIOUS DRIVING CASES.

THE case against S. Holmes, Derby, was dismissed owing to contradictory evidence on the part of two policemen. One swore the speed was between twelve and fifteen miles an hour, and the other was equally sure it was not more than four!

A BIG batch of cases was heard at Grantham on Saturday last as a result of a police trap. Those defendants who put in an appearance in answer to the summons were fined £3 and costs, while those who did not appear had to pay £10.

THE Spelthorne justices on Monday dealt with a number of summonses against motorists for driving at excessive speed—at the rate of from twenty-five to thirty-two miles an hour. The penalty imposed in every case, except one, was £7 and costs. The exception was a defendant who did not appear, and who was accordingly fined £10 and costs.

MR. CECIL DREW was fined for furious driving along Kensington Road, at the West London Police Court, last week. A police-constable said that he timed the defendant for one-fifth of a mile, which he covered in 27 secs., making a rate of twenty-five miles an hour. He (witness) waited for a signal given by a constable at the beginning of the course mapped out.—Mr. Plowden: What was the signal?—The Constable: The waving of a handkerchief.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Derby	S. Holmes, Bradford	12-15	Dismissed.
West Hartlepool	Dr. W. Ross, West Hartlepool	22½	£1, etc.
"	T. E. Atterby, Stockton	20	£1, etc.
"	*J. Kirby	20	£1, etc.
"	*Mrs. J. Kirby	20	10s., etc.
Lambeth	W. Parsons, Paddington	20	£2, etc.
London, W.	C. Drew	25	£2.
Southport	W. T. Haig	22	£2, etc.
St. Neots	F. J. O. Montagu, London, W.	26	£6.
Maidenhead	J. Wolf, London, W.	—	£5, etc.
"	H. Outram, London, W.	—	£5, etc.
"	A. Winter, Notting Hill	—	£5, etc.
"	W. Stokes, Taplow	—	£5, etc.
"	E. Davis	—	£10, etc.
"	*W. H. Tucker	—	£2, etc.
Corwen	G. E. Evans, Wolverhampton	—	£5, etc.
Chichester	W. Rampling, Brighton	—	Dismissed
Otley	C. W. Bell, Harrogate	20	£1, etc.
Dudley	*W. Jones, Dudley	20	Dismissed on payment of costs.
Kingsclere	G. Errington, London	29	£1.
Pickering	A. H. Taylor, Walton	15	£2, etc.
Croydon	P. Hickman, Regent's Park	—	Dismissed.
Kingston	T. Grant Fletcher	—	£3.
"	Wm. Glass, Croydon	21	£3.
Watlington	E. Francis	22	£5, etc.
"	H. Merritt	17½	£4, etc.
"	E. Harris, Bexhill	39	£10, etc.
Leicester	R. E. Parker, Leicester	20	£2, etc.
Bath	H. C. Stone	—	Dismissed.
Stratford	T. Smith, Leytonstone	20-30	£1, etc.
Ruabon	J. W. Williamson, Cheade Hulme	19	£2, etc.
"	J. Hall, Oldham	—	£2, etc.
Knarsboro'	J. W. Adamson, Sunderland	18	£2, etc.
"	Capt. Laycock, Bawtry	36	£5, etc.
"	W. C. P. Snowden, Ripon	—	£2, etc.
Cheltenham	C. Jenkins, Cheltenham	15-19	£3, etc.
"	L. F. Craven, Moreton	25	£2, etc.
"	T. Whittaker, Horsforth	21	£3, etc.
Sherbourn	*R. Baskerville	17-20	10s., etc.
Manchester	*G. Shepherd, Ballsall Heath	14-16	10s., etc.
Birmingham	W. Warren, Kingsland	21	£5, etc.
Leominster	Dr. Hollins, Glasgow	20	£5, etc.
Bakewell	W. Baker, Cresswell	29	£2, etc.
Bullington	Dr. W. Stevenson, Nettlebed	24	£2, etc.
Henley	A. Jones, Nettlebed	—	£10, etc.
"	S. Stevens	35½	£2, etc.
"	S. Filchett	39	£10, etc.
"	C. Andreae	33	£10, etc.
"	R. Hinton, driver to Harvey Du Cros	20½	£10, etc.
York	*T. Wood, York	17	£1, etc.
"	*A. R. Greenwood, York	32	£2, etc.
Steyning	*H. Frankel	—	£1, etc.
Stony Stratford	E. L. Lakin, Warwick	30	£4.
"	J. Adams, London	37½	£4.
Aylesbury	Sir James Millar	—	£4, etc.
King's Heath	Albert Eadie, Redditch	25	£2, etc.
Spelthorne	Hon. R. Ward, Westminster	—	£7, etc.
"	A. Morris, London, W.	—	£7, etc.
"	G. Oakley, London, W.	—	£7, etc.
"	C. Marshall, Hampton Wick	—	£7, etc.
"	A. Seeney, London, W.	—	£10, etc.
"	G. W. Rice, Surbiton	—	£7, etc.
Windsor	J. V. Taylor	—	£5.
"	W. Preston	—	£5.
"	A. Clifford, Maidenhead	—	£5.
Grantham	R. Billings, Edinburgh	25	£3, etc.
"	F. Ellingham, London	—	£10, etc.
"	H. Bird, Newcastle	—	£10, etc.
"	E. Clapham, London	—	£10, etc.
"	F. Bradbury, Sheffield	—	£3, etc.
"	*A. H. Pease, Darlington	—	£10, etc.
"	*F. Rendel, Newcastle	—	£10, etc.

Where no alleged speed is given it is understood to be above the legal limit.

* Motor-Cycle Cases.

ON THE WRONG SIDE.

At the Carlisle police court Michael Walton, a youth, was summoned for neglecting to keep to the proper side of the road when riding a motor-cycle and passing a horse and trap at Kingsmoor at seven o'clock on the night of June 5th. He was also summoned for neglecting to give warning of approach at the same time and place. The Chairman cautioned the defendant, and fined him 10s. and costs for passing the wrong side of the road, and he was ordered to pay the costs in the other case.

PERCY CHAPLIN, undergraduate of Caius College, Cambridge, was summoned at the local police court for driving a motor-car on the wrong side of the road on June 11th. Defendant pleaded not guilty. Police-constable Merry stated that on the afternoon of June 11th he heard a collision at the corner of Jesus Lane and Sidney Street, and on proceeding to the spot found that the defendant's car had driven into a milk cart driven by David Johnson. The milk cart was on the right side of the road, and there should have been plenty of room for the car to pass safely. The defendant was fined £1 and costs.

MESSRS. SAUNDERS, LIMITED, of Cowes, have just completed a 30ft. petrol racing launch, built to the rules of the Marine Motor Association, for Mr. Frank E. Beadle, of London, from the designs of Messrs. Wort and Beadle, of Cowes. The motor, which was supplied by the Motor Manufacturing Company, comprises eight cylinders, capable of developing fifty brake horse power. The vessel has already had a trial spin, when a speed of nineteen knots was attained.

AN interesting function took place on Saturday last, when a very handsome cigar case, silver match box, and illuminated address were presented to Mr. W. M. Letts on his retirement from the Locomobile Company of Great Britain, Limited, in order to enter into partnership with Mr. Charles Jarrott. In the presence of the whole staff and men, the presentation was made on their behalf by Mr. A. W. Robinson, managing director, who in a few well-chosen words expressed the regret that all the employees felt at his severing his connection with the company.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion [communications and contributions] must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, JULY 18, 1903.

[No. 228.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

ON June 30th Mr. Oliver Stanton drove the officer commanding Royal Engineers, 4th Army Corps, on duty to Caterham and back. On July 4th, 5th, 6th, 7th, and 9th he was also employed, doing duty in connection with the visit of President Loubet, driving Lord Grenfell, the General Officer commanding 4th Army Corps, Brigadier General Eyre

Crabbe, Chief Staff Officer 4th Army Corps; and Major General Sir W. F. Gatacre, commanding the Eastern District. Lieut-Colonel Mayhew, Captains Crampton and Midgley, and Mr. G. A. Miller were also employed upon the same duty, and in addition, Mr. Miller drove the officer commanding Royal Engineers 4th Army Corps to Caterham on July 7th for inspection duty. It has been stated in several papers that July 6th was the first public appearance of the Motor Volunteer Corps. This is entirely a mistake, as the corps has been doing a large amount of good work during the last three months. It was, however, the first appearance of the corps uniform, which has only just been approved by the War Office. The uniform is both smart and serviceable, consisting of tunic and knickerbocker breeches of field service colour serge, with dark green collar and cuffs, and red piping down the seams of the breeches and round the cuffs of the tunic. The cap is of the staff pattern and of the same colour as the tunic. The badge of the corps consists of a road-wheel intersected by an arrow, and with the motto "Subito" underneath. The buttons are white metal and bear the impress of a crown with M.V.C. over it and the motto underneath.

Municipal Motor-wagons.

At the annual meeting of the Incorporated Association of Municipal and County Engineers, held at Kensington the other week, Mr. T. W. E. Higgins, Borough Surveyor of Chelsea, read an interesting paper on the subject of municipal motor wagons. The author was strongly of opinion that even should the cost of working motor vehicles approximate to that of horse-drawn ones, every local authority responsible for cleansing the streets should encourage their use, both on sanitary and economical grounds. In street cleansing alone a vast army of scavengers are employed merely to gather up the excreta of the horse, and all this expense would be saved if motor-vans and carts were substituted for the horse-drawn vehicles now used for the purposes of the City and Borough Councils within the metropolitan area. In the summer of 1900 Mr. Higgins had two motor vans built, and these have been working satisfactorily ever since. He has also had at work a steam motor-van, which has a frame built to take either a tipping body or water tank (700 gallons). This machine is one which has also proved very useful and economical. The chief advantage of motor vehicles is no doubt the speed at which they can work, and this, Mr. Higgins pointed out, is the reason why they must appear costly when used for street cleansing or dust removal in a small district.

The various municipalities are evidently beginning to realise their advantages, for not only in London, but in the provinces, motor vehicles of various types are now in use. That their number will increase as time goes on there is not the slightest doubt, for, as Mr. Higgins pertinently remarked, "mechanical traction has come to stay. It is completely altering the social habits of the so-called upper classes; all the large business firms are advantageously adopting this means of transport, and municipalities have no cause to lag behind.

Curious Police Action at Holyhead.

UPON his return from Ireland, Mr. R. Moffatt Ford has afforded us some interesting information concerning the police. In driving his Decauville from London to Holyhead he was agreeably surprised to find that no traps had then been laid for motorists. When he re-crossed from Dublin, however, the police had evidently repented of losing so golden an opportunity, and were waiting upon the quay at Holyhead where the cars were unshipped. As each car was landed they took down a written description of its appearance, together with the name and address of the owner, obtaining this information from the travelling label attached to the car. Mr. Ford asked by what right this was done and was informed that it was by direction of the superintendent. He then sought out the station master and lodged a complaint against motorists being annoyed and harassed upon the North Western Co.'s premises, whereupon the police were immediately ordered off by the station-master. In the meantime he had also telegraphed to the secretary of the Automobile Club in Ireland, and since then there has apparently been no further trouble in that direction. But, as Mr. Ford points out, it is by such unnecessary actions as these that the constant friction between motorists and the police is perpetuated. Whilst it is only right that all reckless and inconsiderate drivers should be adequately punished, it is absurd that a few scattered local authorities should assume that all motorists are grossly incompetent and should therefore employ every means to harass and annoy them.

Essex Roads.

MR. P. J. SHELDON, the Chief Surveyor of main roads, states in his annual report to the Essex County Council that of the roads under contracts with urban authorities, the least satisfactory during the year are those maintained by the boroughs of Chelmsford and Maldon. Speaking of the rural roads generally, Mr. Sheldon says they are in good condition, and wherever a district has warranted the substitution of granite for local materials the change has been made so far as financial considerations have permitted. Mr. Sheldon adds that the motor-car provided by the Council in December, 1901, has proved of the greatest possible service and convenience. During the fifteen months ending 31st March last it covered 12,150 miles at a cost for petrol (450 gallons) of £35 0s. 7d.; driver's wages, £65; lubricating oils, etc., £1 7s. 6d.; repairs, etc., £26 16s. 1d.; total for working expenses, £128 4s. 2d.; or at a rate per mile of 2½d.

lation delayed the progress of the electrical trades; legislators should be careful lest they similarly hinder automobilism in this country. That this will develop to great proportions may be safely imagined when the success of the British cars in the recent tour in Ireland is considered. As touring cars these attained remarkable distinction, the way in which they travelled over rough roads and maintained a character for general excellence being really noteworthy. In comparison with the best cars of the world, they did wonderfully well, and one result of that event has been to demonstrate the rapid advance that British makers are making in the manufacture of really reliable cars. It only now requires that the movement should be unhampered by restrictive legislation to reap a profitable reward.

The Question of Appeal.

WITH regard to the Bill itself suggestions are already being made that will secure its condemnation by reasonable people. Already the Government has conceded that all drivers of cars should be required to take out licences, and an amendment to that effect is to be moved by Lord Balfour of Burleigh, while the inclusion of motor-cycles within the purview of the measure will secure the interest of a very large number of people. According to the Bill any constable may apprehend a driver who commits an offence under section 1. of the Act—an arbitrary clause that will require full consideration before securing the endorsement of the Legislature. The Bill provides that where imprisonment is the penalty an appeal may be made; but apparently not otherwise. This seems very unfair. Surely an appeal should be allowable whether the sentence is a fine or imprisonment. The penalties suggested, £20 or £50, are sufficiently drastic to warrant an appeal, for all must recognise that the administrators of the law are not wholly impartial in country districts, and that there is just as much likelihood of men being fined wrongly as imprisoned wrongly. Hence our contention that the right of appeal should be as freely given to the motorist threatened with being fined as with the man who is sentenced to imprisonment.

Administration.

WHERE a summons fails, the expenses allowed to defendant and witnesses should be on the same liberal scale as when fines are made. There should be more equity practised in the matter, and not so much animus shown. On this depends the whole matter, for even bad laws need not be so intolerable if administered by men of sense, intelligence, and fairplay. Unfortunately prejudice, bigotry, and a wrong conception of self-interest have too long been allowed to prevail, and the sensational views of agriculturists and journalists who have given little study to the matter have too freely coloured public opinion. We want impartiality in administration as well as equity in law.

Notification Necessary.

WE would also suggest that Councils which make special provisions with regard to speed in certain areas should be required to give full publicity to such regulations, not merely by local advertisement, but by boldly-displayed announcements at the entrances and exits to such areas. This is important, otherwise motorists passing through strange places may be unwittingly dragged before the courts and unjustly punished.

Equity Wanted.

IN fact, if it could be secured that equity and impartiality were possible to motorists many would abandon their antipathy to numbering. Withdrawing the speed limit and recognising that only driving to the public danger, "having regard to all the circumstances of the case," is to be made the basis of offence, is a wise conclusion to which the Government have come. We hope the administrators will carry out the spirit of the law and consider all the circumstances, not paying undue heed to

the unsupported testimony of the police, or the partial views of interested witnesses.

A Watchful Attitude.

SOME of the details of the proposed measure require amendment, and it will be extremely necessary for motorists in Parliament to watch the new amendments put down by opponents of the automobile movement. These will determine the character of the Bill very materially, and the various provincial clubs should give their views to local M.P.'s without delay. Now is the time for action before the whole scheme of the Bill is really settled.

The Irish Fortnight.

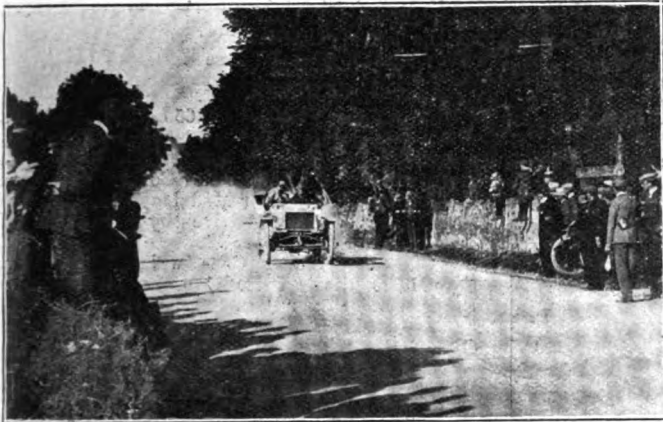
NEXT week we shall conclude our reference to the automobile events that have taken place in the Emerald Isle. These have been very successful in demonstrating the safety and reliability of the modern motor-car. The one or two mishaps that have occurred have been of a very slight nature, and our foreign visitors were delighted with the reception everywhere accorded. Amongst the latest letters received by the A.C.G.B.I. on this point is one from Prince Ratibor, the president of the German Club, who gladly pays tribute to the excellent arrangements and organisation made by the Club, and expressed the hope that it may often be the pleasure of his society to co-operate with the British Club in furthering the automobile sport and the automobile industry. On Wednesday the Hon. C. S. Rolls won the Kerry Cup.

Applications of Electricity to Driving Carriages in Town.

A PAPER on this subject was read by Lieut-Colonel R. E. Crompton, at the recent Engineering Conference at the Institution of Civil Engineers. Dealing first with transmission gear, the author remarked during the very trying winter we have passed through, in which the greasy and hence dangerous condition of the streets was singularly unfavourable for automobile traffic, it was noticeable how few accidents occurred with electrical vehicles from side slip. This is partly due to the fact that it is a comparatively easy matter to apply the driving power to the front wheels, which are also the steering wheels. Electrical vehicles also possess an important advantage over petrol or steam-driven cars, in that it is so easy to apply separate power to each driving wheel, there being no necessity for the complication introduced by the use of differential gear. Up to the present, apparently the majority of electrical vehicles use tooth-gearing, in spite of the fact that chains are undoubtedly easier to lubricate and to maintain in good silent-running condition.

VARIOUS accounts of his accident in the Gordon Bennett race having found their way into the press, Mr. J. W. Stocks has asked us to place the true facts before our readers. From the Castledermot outward control is a two mile stretch of road perfectly straight but with a rough surface, then a rather sharp sweep to the left. He was travelling between seventy and eighty miles an hour, and struck a projection in the road at the time when he should have applied the brakes on his car. This displaced him in his seat, and momentarily delayed the application of the brakes, thus preventing the car slowing down sufficiently for him to take the corner. Seeing an absolutely straight road in front of him, apparently quite clear, he decided to go along it and reverse. When about three yards from the entrance to this road (and too late to even chance the correct one), he saw some wire stretched right across, and as his car struck this, the wire first stretched and then the post to which it was attached at the right hand side of the road came out of the ground. His near side front wheel was held by the wire, the car turned round, the off side front wheel broke with the strain, the off side back wheel caught the grass on the left of the road, and he was dropped lightly into the hedge. Fortunately he did not sustain a bruise of any description, neither did his mechanician.

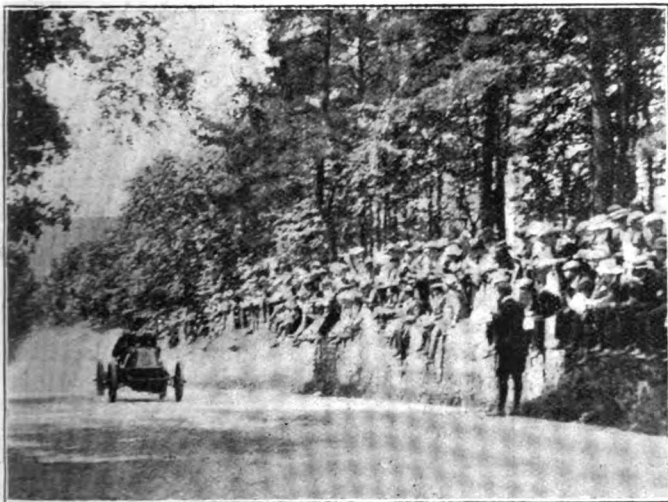
The Irish Fortnight.



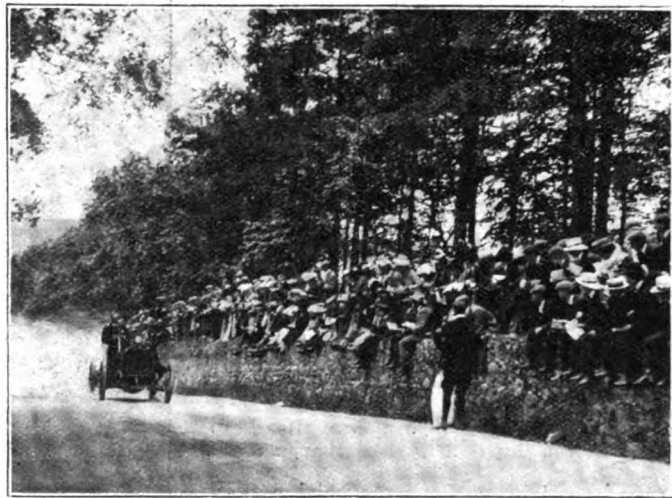
Mr. J. W. Cross on the 20-h.p. Humber—The winner of the Graphic Trophy.
(Lafayette.)



Werner on 60-h.p. Mercedes.



The Hon. C. S. Rolls on Mors Car.



Mr. J. E. Hutton on 60-h.p. Mercedes.

THE CASTLEWELLAN HILL-CLIMBING TRIALS.

ON Thursday, the 9th inst., the invasion of the South began, the routes suggested by the Club being by way of Carlow and other places familiar to those who had gone over the Gordon Bennett course. A few went by way of Wicklow dikes—a route that presented ever varied and beautiful scenery. This way might well have been suggested as an alternative to the somewhat barren beginning of the routes recommended by the organisers of the trials. But at Enniscorthy we learned that the prejudice shown a few years ago by the local authorities against motor-cars still rankled in the breasts of some of the Dublin automobilists, who were credited with having been responsible for the cool reception bestowed to this magnificent road.

The roads of county Cork are abominable. No other word adequately expresses their condition, and it was currently reported that six cars turned back at Fermoy rather than run the risks entailed by the continuance of the journey to the southern town. One car that travelled on Friday morning from Dungarvan to Cork had four punctures, and although the heat of the day may have had something to do with the difficulties, the roads must be held mainly responsible for such a dilatory condition of things. In the city of Cork the welcome

of the citizens was hearty and spontaneous, although in private conversation regrets were expressed that so few of the motorists had travelled down south. Even as it was, all seemed anxious to get to the end of the Fortnight, and on Saturday there was a general exodus, the officials doing all they could to persuade owners of tourist as well as racing cars to go to Kerry in completion of the arrangements. Only a few motorists waited to see the motor beat races, which, as will be seen from the report further on, proved a very tame proceeding.

THE SPEED TRIALS AT CORK.

Friday, when the speed trials were held at Cork, was an ideal day for such an exhibition, and, although the weather was scorching at times, no inconvenience was felt by the spectators on that account, for the Carrigrohane road, where the trials were held, is delightfully situated, with tall trees casting their shadows over the course. It is outside the western boundary of Cork, a portion of the route selected running by the side of the Cork and Muskerry Light Railway, the telephone wires of which were tapped during a portion of the day, in order to complete the telephonic arrangements in connection with the trials.

High banks were on each side of the road, and behind these, spectators had a practically uninterrupted view of the cars over the whole of the two miles, and had the satisfaction of being far away from any danger. The road had been specially prepared, and everyone seemed perfectly satisfied with the arrangements made. So far as the people of Cork were concerned, they showed even more interest than had those of Dublin or Castlewellan, and thousands turned out to see the events. The touring section proved tedious to most, and it was not till the racing cars came along that the spectators showed an enthusiasm greater than any witnessed during the whole of the tour.

In the tourist section, twelve out of the thirty-five entrants started, and the silver cup, presented by the Lord Mayor of Cork and the Executive of the Exhibition, was won by the 6-h.p. Gardner-Serpollet, which accomplished the distance in 2 mins. 7 4-5 secs. The 20-h.p. M.M.C., driven by Mr. G. Iden, accomplished the journey in 2 mins. 35 1-2 secs., and gained the silver medal offered as second prize. A sporting match was decided between the Hon. J. Scott Montagu, driving a 22-h.p. light Daimler, and the Hon. C. S. Rolls, who drove a 20 h.p. Panhard; the former covering the course in 2 mins 55 2-5 secs. There were two classes in the racing section, cups being given by the Exhibition authorities and the "Cork Constitution." In the class for cars weighing less than 650 kilos, E. Brun, on a Prunel, went over alone. In the class for cars weighing not more than 1,000 kilos, there were four starters, who developed a high rate of speed, the cup going to the Hon. C. S. Rolls, who drove his 80-h.p. Mors over two miles in 1 mins. 49 3-5 secs.

TOURIST SECTION.

H. Du Cros's (jun.) 12-h.p. Light Ariel. Handicap, 45 secs., driven by owner. Net time, 2 mins. 58 2-5 secs.

R. W. Leader's 16-h.p. Century. Handicap, 50 secs. Driven by owner. Net time, 2 mins. 53 2-5 secs.

J. Lisle's 10-h.p. Light Star. Handicap, 66 secs. Driven by owner. Net time, 2 mins. 57 secs.

J. W. Cross's 20-h.p. Humber. Handicap, 5 secs. Driven by owner. Net time, 2 mins. 48 3-5 secs.

The Hon. J. Scott Montagu's 22-h.p. Light Daimler. Handicap, 8 secs. Driven by owner. Net time, 2 mins. 51 2-5 secs.

E. M. C. Instone's 22-h.p. Light Daimler. Handicap, 15 secs. Driven by owner. Net time, 3 mins. 19 1-5 secs.

F. R. S. Bircham's "Dennis," special design. Handicap, 5 secs. Driven by owner. Net time, 4 mins. 7 secs.

George Iden's 20-h.p. M.M.C. Handicap, 25 secs. Driven by owner. Net time, 2 mins. 48 1-5 secs.

Alfred Burgess's 20-h.p. M.M.C. Handicap, 25 secs. Driven by owner. Net time, 2 mins. 54 1-5 secs.

A. J. Macdonald's 22-h.p. Daimler. Handicap, 9 secs. Driven by P. G. Garrard. Net time, 3 mins. 4 secs.

The Hon. C. S. Rolls' 20-h.p. Panhard. Handicap, 2 secs. Driven by C. W. Hacking. Net time, 3 mins. 20 2-5 secs.

J. W. H. Dew's 6-h.p. Gardner-Serpollet. Handicap, 50 secs. Driven by W. J. Warren. Net time, 2 mins. 2 3-5 secs.

J. H. Gorham's 22-h.p. Daimler. Driven by owner. Net time, 3 mins. 15 secs.

FINALS.

The following qualified for the finals in the different sections :—
Class D—Tourist Cars costing over £300, but not more than £650, and carrying four people—R. W. Leader's 16-h.p. Century; handicap, 50 secs.; driven by owner. Net time, 2 mins. 53 2-5 secs.

Class E—Tourist Cars costing £650, but not more than £1,000—George Iden's 26-h.p. M.M.C.; handicap, 25 secs.; driven by owner. Net time, 2 mins. 48 1-5 secs.

Class F—Tourist Cars costing over £1,000, to carry four people—A. J. Macdonald's 22-h.p. Daimler; handicap, 8 secs.; driven by P. G. Garrard. Net time, 3 mins. 4 secs.

Section G—Steam tourist cars costing not more than £800, to carry full complement of passengers—J. W. H. Dew's 6-h.p. Gardner-Serpollet; handicap, 60 secs.; driven by W. J. Warren. Net time, 2 mins. 2 2-5 secs.

RESULT.

J. W. H. Dew's car; time, 2 mins. 7 4-5 secs., 1.

George Iden's car; time, 2 mins. 35 1-5 secs.

R. W. Leader's car; time, 2 mins. 59 2-5 secs.

A. J. Macdonald's car; time, 3 mins. 1 1-5 secs.

RACING SECTION.

Class H.—Racing cars weighing less than 650 kilos. Distance about two miles. Prizes—1st, Silver Cup presented by the Lord Mayor of Cork and the Executive Committee of the Greater Cork International Exhibition; 2nd, Silver Medal.

E. Brun's Prunel—driven by owner. Raced over in 2 mins. 49 2-5 secs.

Class J.—Racing Cars weighing not more than 1,000 kilos. Prize Cup, presented by the Proprietors of the "Cork Constitution."

80-h.p. Mors. Driver and entrant, the Hon. C. S. Rolls. 1 min. 49 3-5 secs. ... 1

60-h.p. Mercedes. Driver and entrant, J. E. Hutton. 1 min. 52 4-5 secs. ... 2

50-h.p. Wol-eley. Driver, H. Austin; entrant, Lieut. Mansfield Cumming. 2 mins. 0 4-5 secs. 3

60-h.p. Mercedes. Driver and entrant, G. Higginbotham. 2 mins. 6 2-5 secs.

With reference to Mr. Instone's time we may mention that although his car had been going extremely well in the tour, only three cylinders were working in the race, short-circuiting taking place in the fourth.

Later in the Exhibition the prizes were distributed by the Lord Mayor of Cork, who extended a hearty welcome to the motorists. The Hon. J. Scott Montagu, the Hon. C. S. Rolls, and others, also spoke, the latter being greeted with cheers for Wales.

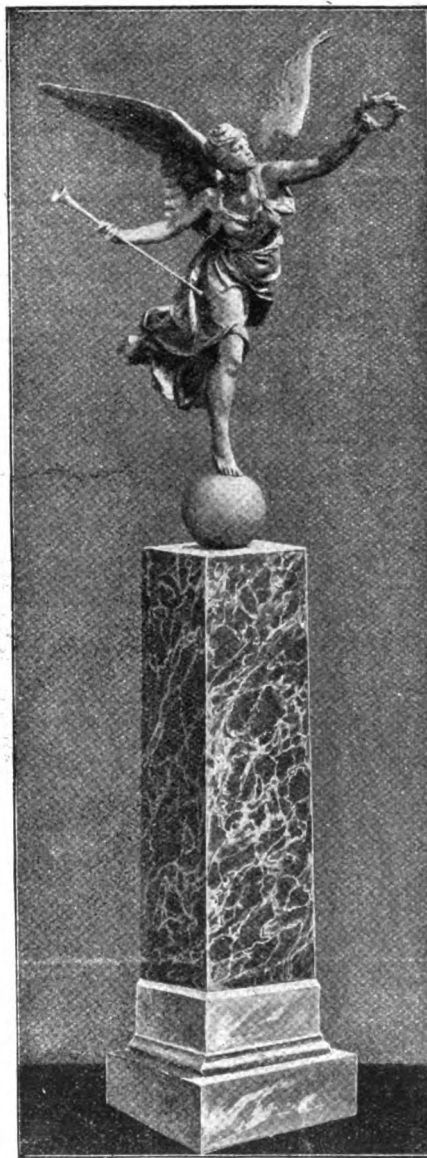
MOTOR-BOAT RACES.

The starting-point of the motor boat-race was from the Clubhouse of the Royal Cork Yacht Club at Queenstown to the bandhouse on the Marina at Cork. At all the points of vantage on the way crowds of spectators gathered, and their patience was really remarkable. Not only was the weather dull, but the sport was tedious, although some of the manoeuvring at the start and finish of the various events revived interest in the affair to those in the neighbourhood of those points.

The distance of the course was eight and a half miles. Its beauties have often been described in connection with yachting matters.

The ineligibility of the boat with the Mercedes motor for the race, owing to the hull being of French manufacture, robbed the event of its international character. For the Harmsworth Cup there was a heat, a bye, and a final. In the first heat Mr. Edge's 40ft. launch, fitted with a 75-h.p. Napier

engine, covered the course in 24 minutes 44 seconds. This was on a flood tide, but on the ebb tide in the final it took 26 minutes 6 seconds, and beat Mr. J. E. Thornycroft's 30-foot launch with a 20-h.p. engine by 5 minutes 8 3-5 seconds, so that when, in the subsequent race over the same course for the "Yachtsman's" Cup, a handicap, the Napier had to allow the Thornycroft 11 minutes 50 seconds, it seemed, bar accident, a certainty that the last named would be victorious, and this the result proved, Mr. Campbell Muir, who piloted Mr. Edge's boat, only being able to reduce the handicap by 5 minutes 8 seconds, or almost exactly what he won the Harmsworth Cup by.



The Graphic Trophy for the Tourist Car Competition at Castlewellan. Won by Mr. J. W. Cross on a 20-h.p. Humber.

The details were as follows:—

FIRST HEAT.

Mr. S. F. Edge's launch, time 24 minutes 44 seconds, beat
Mr. F. Beadle's launch, length 30 feet, 50-h.p., 8 cylinder M.M.C.
engine. Time, 27 minutes 44 2-5 seconds.
Won by 3 minutes 0 2-5 seconds.

THE BYE.

Mr. J. E. Thornycroft's launch, length 30 feet, 20-h.p. engine, went
over the course for the bye in 30 minutes 28 4-5 seconds.

FINAL HEAT.

Mr. S. F. Edge's launch, time 26 minutes 6 seconds, beat
Mr. J. E. Thornycroft's launch, time 31 minutes 14 3-5 seconds.
Won by 5 minutes 8 3-5 seconds.
"Yachtsman's" Cup, handicap, same course and distance as for
Harmaworth Cup.
Mr. J. E. Thornycroft's launch, length 30 feet, 20-h.p., allowed 11
minutes 50 seconds. Time, 33 minutes 51 1-5 seconds ... 1
Mr. F. Beadle's launch, length 30 feet, 50-h.p., 3 cylinders, M.M.C.
engine, allowed 6 minutes 55 seconds. Time, 33 minutes 12 3-5
seconds ... 2
Mr. S. F. Edge's launch, length 40 feet, 75-h.p. Napier engine,
scratch. Time, 27 minutes 9 1-5 seconds ... 3
First beat second by 3 minutes 16 2-5 seconds, and first beat third
by 5 minutes 8 seconds.

Participants in the tour reached Killarney, the final
stage of the expedition, on Tuesday, a large number passing
through the famous Gap of Dunloe, where there was only one

IRISH GOSSIP.

SOME idea of the demoralisation of the country people that
has resulted from the reports of exorbitant charges at hotels
was given us at Ballyshannon by the representative of a leading
Dublin photographer. He wanted to have a dark room in a small
cottage opposite the start of the race. It was only desired to
change a few plates therein, a fact duly explained to the occu-
pant. She, however, wanted the firm to "make an offer," and
when they declined thought she would be satisfied with three
pounds for the accommodation. When it was pointed out that the
room would only be required for a few minutes, a quarter of an
hour at the outside, she remarked that "that would not matter.
Whether ye were there half an hour or all th' day I should have
to be out of the room meanwhile"—a rendering which made it
clear the payment was intended as compensation for "moral
and intellectual damage" rather than for services rendered.

In their eagerness to secure a relic of Jarrott's wrecked
car, some of the motoring enthusiasts who visited the scene of
the accident are reported to have appropriated, unwittingly, no
doubt, some of the parts more valuable than a broken wheel-
spoke or a splinter of the dashboard.

MESSRS. A. W. GAMAGE, LIMITED, write:—"We notice in



—Lining up for the Trials at Cork.—At the Head of the Procession is Mr. J. W. Cross on the 20-h.p. Humber on which he won the Touring Class Events at Phoenix Park and Castlewella.

Photo by)

(Lafayette, Dublin.

breakdown, the axle of a car giving way, and rendering it neces-
sary to draw the vehicle into Killarney by means of a pony. Stray
cows and donkeys caused some inconvenience along the country
roads of Kerry, as they have done elsewhere in the south.

THE KERRY TRIALS.

On Wednesday the concluding trials of the tour were held
on the old direct road from Killarney to Tralee, starting from
Molaliffe. The hill was a perfectly straight one, and therefore
regarded as safe. The gradient was very severe and tested to the
utmost the hill-climbing capabilities of the cars. The events
comprised five classes—for cars costing under £300, cars between
£300 and £650, cars between £650 and £1,000, cars over £1,000,
and lastly, for steam cars costing under £800. The Kerry
County Council gave a thirty guinea silver cup, which attracted
considerable attention when on view last week in Messrs.
Switzer's windows in Grafton Street, Dublin.

FOLLOWING the speed trials and hill-climbing trials at
Castlewella was a kind of "go-as-you-please" return to Dublin,
where the horns of the motor-cars made merry music on Wednes-
day week. By way of Rostrevor, Newry, and Dundalk went the
bulk of the cars, while a few of the higher-powered vehicles
journeyed northward to the Giants' Causeway.

your issue of the 11th inst. a letter from Mr. Goodwin re the
speed trials for motor-cycles in Phoenix Park, in which he
endeavours to explain away his failure to win the cup. We beg
to say that as far as we are concerned, having won this cup, we
are quite willing to give Mr. Goodwin any satisfaction which he
may desire in the shape of a sporting match. We ourselves do
not like to complain, and should not have done so if other people
had not started, but we now feel that we must mention that at
Castlewella on the 7th inst. our rider was prevented from
starting owing to his machine not being fitted with a brake."

WITH reference to the Napiers in the Gordon Bennett race
Mr. S. F. Edge writes:—"We ran two cars of 35-h.p. with Jarrott
and Stocks driving, and one of 45-h.p. which I drove myself,
because we considered this was the best way of trying to keep
the Cup in this country. Unfortunately, accidents knocked out
Messrs. Jarrott and Stocks, and so far as my own car was con-
cerned, two minutes was the outside time I lost through
mechanical troubles, and the whole of the time I lost was
through tyres. The car, although a new one, gave absolutely
no trouble, and Mr. Napier would not have handed it over to
me saying it was in a fit state to drive unless he was absolutely
satisfied that it was."

D

THE CONTINENTAL TYRE COMPANY are naturally well pleased at the success of Jenatzky in the Gordon Bennett race, seeing that his car was fitted with their tyres. Great preparations were made on the course by the Continental Company to look after tyres on the racing cars. Fifteen experts were brought over and located in four different depots at various parts of the course. Each depot was supplied with spare tyres, tubes, repairing outfits, and bottles of compressed air, the latter to expedite the operation of inflation.

COLONEL NEVILLE CHAMBERLAIN, C.B., Inspector-General of the Royal Irish Constabulary, has issued a circular thanking the members of the force for their intelligence and good conduct on the occasion of the Gordon Bennett motor race. Colonel Chamberlain has received the following message from the Lord Lieutenant:—"Sir, I am directed by the Lord Lieutenant to convey to you the expression of his Excellency's complete satisfaction with the police arrangements in connexion with the late motor-car race. His Excellency was much impressed with the admirable conduct of both officers and men throughout a very trying day, and he desires to congratulate you on the successful result of your labours.—I am, Sir, your obedient servant, A. P. MACDONNELL." The Inspector-General has also received the following message from the Chief Secretary for Ireland:—"Please accept for yourself and convey to the force my warm

the officials of the concern. In the evening, the film, which had not been developed, was securely packed in a tin light-tight box and parcelled in strong wrappers and despatched to London by post. A few days afterwards the twine and labels were delivered at the works in London, and two days subsequently the box of film was delivered at Dublin. On examination it was found that the box had been tampered with in such a manner that the entire spool of film was completely destroyed by the action of light. Thus the only cinematograph record of the speed trials has been completely destroyed. A regrettable circumstance indeed.

QUITE five hundred cars must have been taken to Ireland for participation in the recent tour. We had official intimation of four hundred and twenty being landed at Dublin, while a few were also received at various other ports. At Messrs. Hutton's and the Earlsfort garage nearly one half of the automobiles visiting the country were accommodated and the rest of the number disposed of in the various livery stables and garages throughout the capital.

THE clocks used in connection with the Gordon Bennett race have become interesting mementoes of a historical occasion, and many motorists have inquired as to whether they are obtainable for private use. We understand a few still remain with the makers, Messrs. S. Smith and Sons, of the Strand, W.C., who

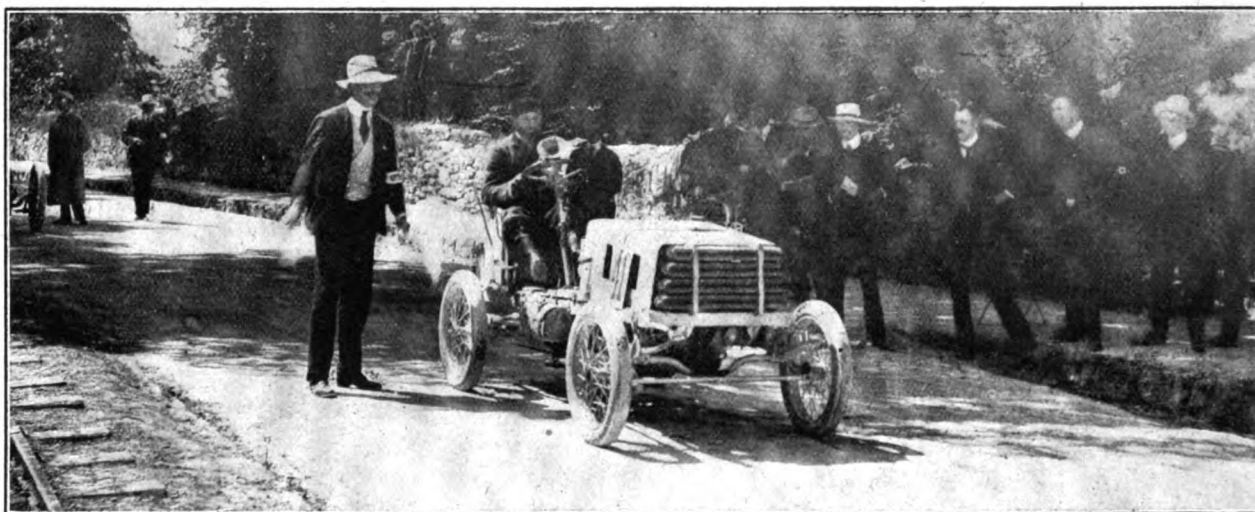


Photo by

The Speed Trials at Cork.—E. Brun on the 20-h.p. Prunel, the winner of the Light Racing Car Section.

[Lafayette, Dublin.

congratulations on the splendid way in which the R.I.C. discharged the difficult task of protecting the public during the motor race."

THE Wolseley Company write us pointing out that the Wolseley car driven in class "D," by Mr. A. E. Crowdy, in the Phoenix Park Trials in 2 min. 53 3-5 sec., was a standard 10-h.p. Tonneau, which took the place of the 24-h.p. at the last minute.

THE directors of the Tourist Development (Ireland) Limited, have established a petrol station and also a repairing pit for motorists at the Lakeside Hotel, Killaloe. This is one of the results of the Automobile Fortnight.

ON Saturday morning the steamer arriving at Derry landed at the jetty three motor-vehicles for the Earl of Leitrim. Two of these are omnibuses, and the third a long van or wagonette. In the afternoon they were manoeuvred in the presence of a large number of citizens, to the admiration of the onlookers. Later they proceeded to Strabane, and have now entered upon their work as public-service vehicles in county Donegal.

THE sole right to take a series of cinematograph pictures of the automobile speed trials in the Phoenix Park, Dublin, was secured by the directorate of the Empire Theatre, with the result that three series of pictures were taken during the day by

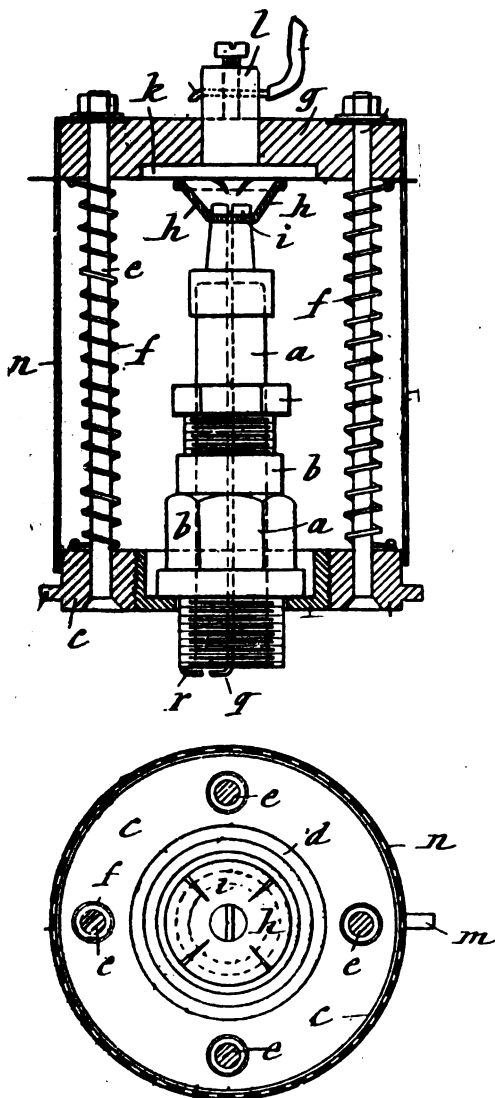
will be pleased to hear from readers desirous of possessing such a souvenir of the great event.

ON Friday evening, after the races, great crowds collected on St. Patrick's Bridge, and at the bottom of King Street, Cork, it having been rumoured that some of the cars would attempt the ascent of Patrick's Hill. This is really a continuation of the road from St. Patrick's Bridge, and extends nearly a quarter of a mile, the gradient averaging 1 in 6. A short distance from the top, however, the gradient is 1 in 4, and there people were massed in considerable force, in the hopes of seeing a really unique performance. They were not disappointed, for the 50-h.p. Wolseley, with Mr. Austin aboard, went up on second speed in really good style. Those cars of lesser power, and consequently lesser venturesomeness, received rather a scoffing welcome from the people as they turned from King Street over the Bridge, instead of following the Wolseley up the hill, which is the stiffest we have yet encountered in the Emerald Isle.

It was unfortunate that the tour was so long prolonged after the great race. The people had expected to see Jenatzky, Gabriel, and others of the leading competitors, and their absence robbed the tour of much of its interest for the Irishmen of the south.

THE SCHIELE SPARKING PLUG PROTECTOR.

WITH the view of preserving sparking plugs from injury due to jolting of the car over rough roads, or from short-circuiting by reason of wet or mud, a lady inventor—Miss J. Schiele—has lately devised the protector illustrated herewith. Early in 1901 she patented a device which comprised a protective metal casing rigidly connected with the metal body of the plug and carrying an insulating portion, to which a clamp was fixed, the conducting wire being fastened on the latter. In this arrangement no attention was paid to the effects resulting from the expansion of the materials, which is a very important point, the more so as, in consequence of the presence of the protective casing, the body of the plug is no longer in im-

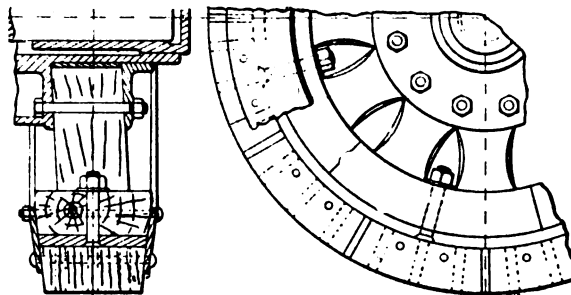


mediate contact with the outer air. In order to remove these inconveniences, and also to give the protection device a more convenient construction, and at the same time assure a perfect contact between the intermediate clamp and that of the plug, the device has been improved. As now made neither the effects resulting from the expansion of the plug and protector or those from the vibrations of the motor or vehicle can exercise an injurious influence on the insulating piece or its connection with the apparatus, or break the electric contact between the intermediate clamp and the plug. Referring to the illustrations, *b* is the metal mounting of the ordinary plug, and *a* the porcelain. By means of the binding screw *i* a spring metal cap *h* provided with a slot is fixed on the plug. An insulating piece *g*, made of porcelain or fibre, having the form of a plate or ring, is adapted

to slide up and down on four uprights *e* screwed into a ring or plate *c* provided with projections *m*. Spiral springs *f* surrounding the four uprights and acting by tension are fixed at one end to the plate *g* and at the other to the ring *c* as shown. The insulating piece carries in the centre the intermediate clamp *l*, on which the wire from the coil is fastened, the clamp terminating below in a plate *k* on which the spring cap *h* bears. On the plug is fixed a protective casing of wire gauze *n* reaching downwards to the ring *c*. The movable insulating plate *g* held between the springs, which act in opposite directions, is completely protected against the effects of vibration of the motor and vehicle, and maintains a continual and perfect contact between the plate *k* and cap *h*; while by reason of its mobility it does not undergo any injurious effect through the variation and expansion of the plug and supports. The device is marketed by M. Leopold Laheyne, of 2, Rue Ernest Allard, Brussels.

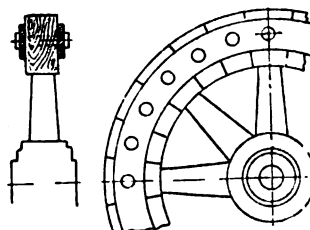
WOOD TYRES FOR HEAVY MOTOR VEHICLES.

IT appears that a number of heavy motor-vehicle manufacturers on the Continent are experimenting with wood tyres. Below are given some particulars of a wheel, with a tyre shod with wood blocks, employed on the Scotte steam tractors. The wheel itself (Figs. 1 and 2) is of ordinary construction, with wood



Figs. 1 and 2.

spokes, wood felloes, and steel tyres. To these steel tyres on the outside are applied hard-wood blocks, held between two steel discs on the sides, being dovetailed between them as it were. In order to increase the life of these blocks they are drilled full of radial holes, into which steel studs are inserted. The blocks are entirely independent of the wheels, and can easily be renewed when worn out, i.e., every 3,000 to 4,000 miles run, according to the kind of road-pairing travelled on. The Scotte Company have used these tyres for several years on their heavy tractors, and claim to have found them entirely satisfactory, especially on account of their preventing both skidding and slipping of the wheels.

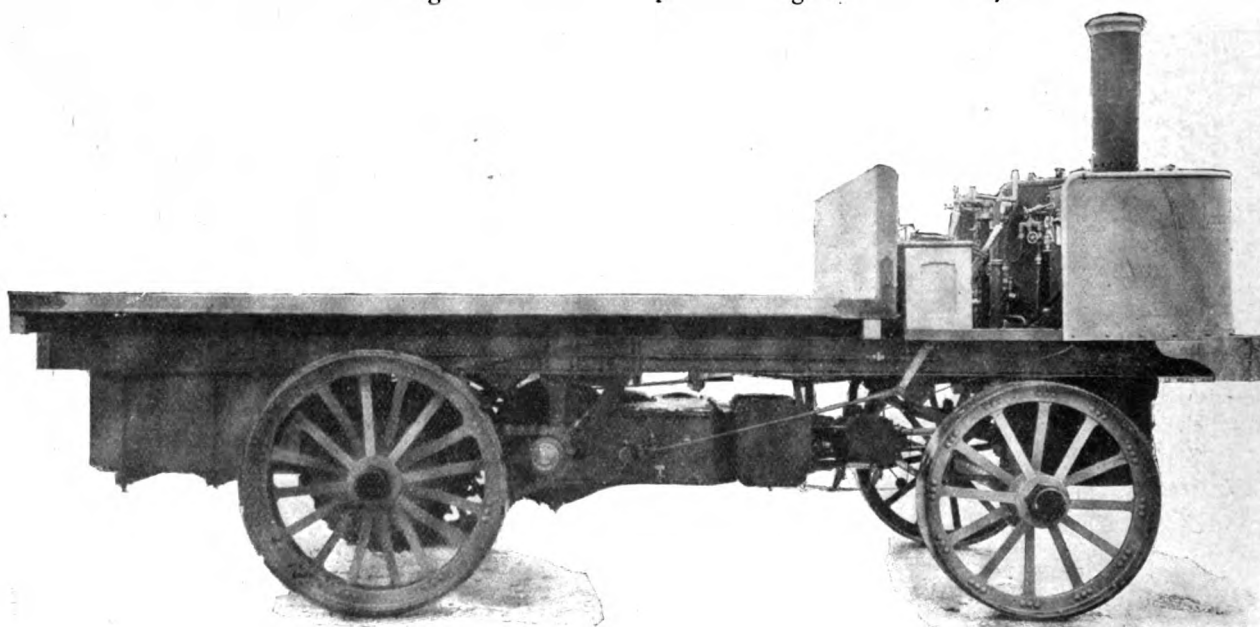


Figs. 3 and 4

Figs. 3 and 4 illustrate a construction of wood tyre employed on the wheels of a Peugeot heavy motor-wagon, recently exhibited in Copenhagen. The felloe consists of a large number of wood blocks, the grain of which runs radially. These blocks are held in place by two flat steel rings bolted to each of them. The advantages claimed for this form of tyre are the following:—Greater elasticity than iron tyres; less wear than rubber and wood with grain running in a circumferential direction; greatest adhesion to the road surface and an easy renewal of the blocks.

STEAM WAGONS FOR SOUTH AFRICA.

THE accompanying illustration shows one of six Colonial type steam wagons the Lancashire Steam Motor Company are building for South Africa. The vehicle is capable of taking a load of seven tons on English roads having gradients of not more than one in nine. The engine is of an improved link reversing type, specially designed with a view of accessibility. The boiler is of the central-fired fire-tube type, arranged for dealing with dirty water. With an engine speed of 55 revolutions per minute the speed of the wagon is two and five miles per hour. The Lancashire Company's cushion drive is fitted, which admits of the engine making almost a revolution before starting the wagon. A fly-wheel of massive proportions is fitted on the opposite side of the wagon. The compensating gear can be readily locked, and an arrangement is fitted for admitting "live" steam to both cylinders with independent exhaust. The driving wheels are 4 feet diameter with 12in. face. The steering wheels are 3ft. 6in. diameter with 8in. face. A new pattern of expanding brakes is fitted to the inside of the chain rings. The steer-



ing gear is enclosed in an oil-tight casing. The total length of the machine is 18ft. 6in.

THE Town Council of King's Lynn is considering the question of adopting a motor dust and water cart.

MOTORISTS will be glad to learn that the London County Council has just issued a regulation making it an offence to throw glass bottles, nails, or other sharp substances, on the roads.

IN driving between Ely and King's Lynn the other Sunday evening, Mr. Frank Morriss, the well-known Norfolk automobilist, was the subject of a cowardly assault from a labourer, at Southery, who, without the slightest warning, hurled a large and heavy stick at Mr. Morriss and the occupants of his car when passing, and immediately made off. The missile struck Mr. Morriss on the back and narrowly missed Mrs. Morriss, who was sitting in the rear portion of the car. Mr. Morriss at once stopped the car, turned back, and gave chase to the vagabond, and secured him after a short run; he refused to give his name and address, or offer any explanation of his conduct. Mr. Morriss, however, retained his hold until assistance arrived in the shape of someone able to identify the man. After obtaining this information, Mr. Morriss drove away and acquainted the superintendent of police in the district subsequently applying to the Downham Market magistrates for a summons against the offender, which was readily granted.

CONTINENTAL NOTES.

By "AUTOMAN."

ONE of the most stylish and exclusive clubs in Paris is the "Polo Club" at Bagatelle, where the *élite* disport themselves in the season. This year fashion has decided that the automobile gymkhana is one of the most high-class sports, and it is at the Polo Club that such an event has been held. There were several interesting and highly amusing events, including a competition for skill in driving, in which the competitors had each to go back and forwards between four posts, joined together by four wires, breaking two wires, one in the forward movement and the other in the backward movement, and not touching the other two wires. Another competition consisted of a hunt after wild animals, which were suspended to the trees, and on each animal was hung a ring. Each competitor was accompanied by a lady, who with a lance had to spear the animal and capture the ring. A third competition consisted in a race over obstacles, whilst a lady passenger carried in her left hand a glass full of water, out of which not a drop had to

be spilt. A fourth competition consisted in running on to a see-saw, and the winner was the driver who could stay the longest amount of time on the see-saw. A fifth competition, pig-sticking, where an object representing a pig was drawn behind a car, was given up on account of the difficulties and dangers that it might entrain. Amongst the competitors were viscounts and barons, princes, and even a princess, the Princess Murat. The event was most successful, and will, no doubt, be looked forward to as one of the things of the year.

I HAVE told the tale of the origin of the name of Mercedes several times in these columns; but still I think it will not be out of place to make a short mention of it again. The cars turned out of late years by the Cannstatt-Daimler works have been called Mercedes cars from the Christian name of the daughter of Mr. Jellinek, who is the author of the improved type of car. I say advisedly "author," because Mr. Jellinek does not claim to be the inventor of these cars, but he is the director of the Cannstatt works, through whose initiative this total transformation in the models was made, and it is entirely due to him that the German firm take the stand in the automobile world that they do to-day. The name of Mercedes is of Spanish origin and means "Wednesday," and now, by special consent of the Emperor of Germany, Mr. Jellinek, who is president of the board of directors of the Cannstatt-Daimler Company, has added the name of Mercedes to his own, and becomes Mr. Jellinek-Mercedes.

It is said that Jenatzy has won 200,000 frs. at least by capturing the Cup. The Continental Tyre Company gave him 25,000 frs. and the Cannstatt-Daimler Company arranged to give him three cars should he win, and now it is said they are so delighted that they have given him a fourth. The Germans had very little hopes of winning the Cup. So many difficulties had been placed in their way by the German Automobile Club; for, had it not been for the long dispute on the question of the drivers, the 90-horse cars might have been in Ireland at the time of the fire, or at any rate some of them. It is an open secret that the 60-horse cars were found to be overweight early in the year, and that great efforts had to be made to get them in the 1,000 kilo limit. It resulted in the front axle being re-made entirely of a different steel, which steel being lighter in weight, was found stronger than the original steel employed. This obligation of reducing the weight has, says Mr. Jellinek, put the Daimler firm in a position of having found a much more suitable material, and this they will employ largely in their next year's cars, to the great advantage of the customers.

THE Motor-car Bill has been much discussed in the Continental automobile press. The "Auto" devotes a whole column to Lord Balfour, whom it confuses with the Premier, Mr. Arthur Balfour, and states what a fortunate thing it is that the Bill



A Road Scene in Spain.

should have been brought into the House of Lords (sic!) by the Premier, who is himself an enthusiastic automobilist.

THE Ostend week began last Sunday under a most auspicious sky, and the first event was a 10 kilometre race on the new road which the King of the Belgians has had built. This road is quite flat, alongside a canal without locks, and has only two slight bends. It is of macadam with a perfect surface. There were nine competitors in the class for heavy cars, but Gabriel, who did the distance in the best time, namely 5 minutes and 12 seconds, was disqualified because he had not given notice that he was driving the Mors car which was put down in Mr. Amblard's name. The winner was therefore Mr. Willy Poege on a 60-horse Mercedes, who did the distance in 5 minutes 13 and 3-5 seconds. A Mors was second, a Gobron-Brillie third, a Panhard fourth and a Gardner-Serpollet fifth. In the light cars Beconnais on a Darracq was the winner in a record time for light cars, namely, 5 minutes 23 seconds. Baras on a Darracq also took the second place. A win and a record also fell to the Darracq in the voiturette category, where Villemain accomplished the distance in 6 minutes 11 and 3-5 seconds. Lamberjack on a Griffon won the light motor-bicycle section in 6 minutes 37 3-5 seconds, and Sauveniere (Clement) the heavy class in 6 minutes 16 and 3-5 seconds.

On Monday the touring cars made a series of five kilometre trials against the watch. Class I., chassis costing less than £160, was won by Comte Liedekerke on a Vivinus (6 min. 3½ sec.). Class II., chassis costing less than £240, Baras on a Darracq, (6 min. 52½ sec.). Class III., less than £400, Cailliois on a Serpollet (3 min. 35½ sec.). Class IV., under £600, Elskamp on a Gobron Brillie (4 min. 26 sec.). Class V., under £720, Huet on a Peugeot (4 min. 43½ sec.). Class VI., over £720, Poege on a Mercedes (2 min. 50½ sec.)

THE reliability trial which was to have been held by the Dutch Automobile Club from the 21st to the 24th inst. has been postponed until September.

FROM the Touring Club Italiano, whose headquarters are in Milan, I have received a copy of the "Annuario Generale, 1903." Although some idea of the completeness of the Annual may be gathered from the fact that it comprises three distinct volumes, it is only by glancing through its pages that the thoroughness of the work is appreciated. Vol. I. is devoted to general matters and information regarding Italy. Vol. II. deals mainly with information regarding touring in foreign countries, and contains details of all the leading automobile clubs throughout the world, while Vol. III. forms practically an Italian



The Castle of Simancas, where the Spanish Archives are preserved.

(Clippings Rebound.)

THE PARIS-MADRID TOUR.

Gazetteer, giving the names of hotels, doctors (a strange inclusion), etc., in all the principal towns and villages. Altogether, the Italian Touring Club is to be congratulated on its 1903 Annual.

THE Kent Automobile Club will hold a run to Herne Bay to-day (Saturday).

ON Wednesday next the Southampton County Motor Club will hold a run to Plaitford.

THE Lea and Francis Motor Syndicate, Limited, has been formed in Coventry with a capital of £10,000.

THE Sheffield and District Automobile Club will hold a run to Buxton to-day (Saturday).

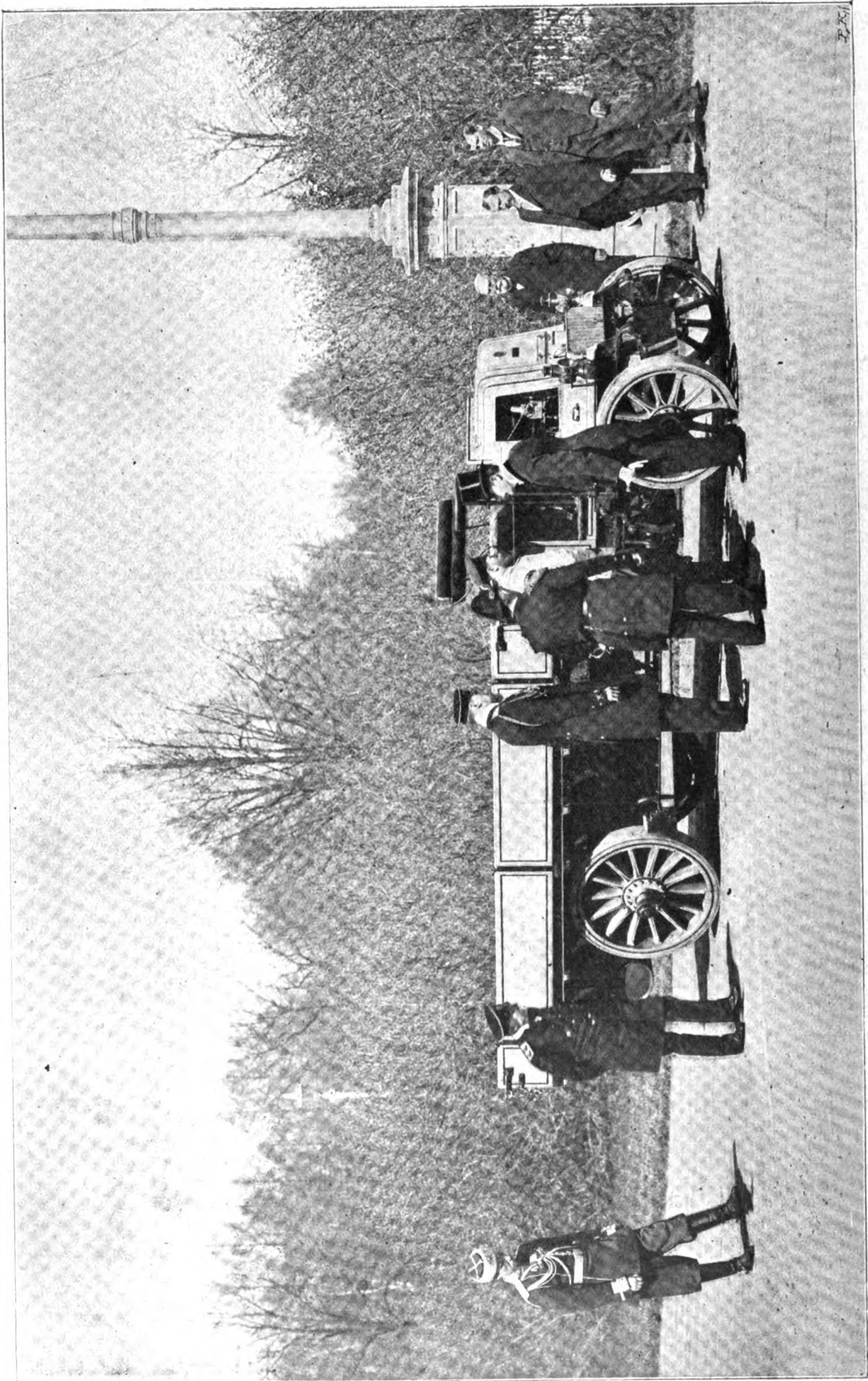
TO-DAY (Saturday) the Wolverhampton and District Automobile Club will hold a run to Albrighton, via Shifnal.

"TRUTH" remarks that there has been such an outcry against motor-cars recently that it becomes necessary to remind County Justices that it is their duty to administer justice, and not prejudice.

THE Coventry Motor Fittings Co., Coventry, have been experimenting during the past season with various kinds of honeycomb radiators, and are now making a standard type which they consider, for efficiency, will rival any of Continental manufacture. In evidence of this they are now supplying their radiators to several leading British firms.

Motor Wagons for the Russian Dockyards.

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The Czar inspecting a petrol motor wagon built for the Russian Dockyards by the Daimler Motoren Gesellschaft at their works at Marienthal, near Berlin. *LA Allgemeine Automobil Zeitung.*

SOUTH AFRICAN NEWS.

[FROM OUR OWN CORRESPONDENT.]

CAPE TOWN, June 13th.

AMERICAN-built cars are in distinct disfavour in Cape Town, being too light in build. A well-known Cape Town motorist, who knows South Africa from end to end, and who has driven his car all over Cape Colony, tells me that the principle of American cars is excellent, and that if only their manufacturers would realise the necessity of putting more substantial work into their products, a large sale for these would result.

I SEND a photo of a "Gladiator" car, taken in Pretoria. The gentleman at the helm is Mr. Russell Wallett, late leading comedian with Mr. Fred. Mouillot's Musical Comedy Co., which has just closed a most successful tour through South Africa. The



lady seated by his side is Mrs. Russell Wallett, and the gentleman seated in the tonneau is Mr. Atkey, of Nottingham. This firm have, as you already know, acquired the business of the Johannesburg Motor Car Co., and now trade under the name of the Johannesburg Motor Mart, under the supervision of Mr. Frank Whittaker.

MOTORISTS are very wary of the police in Cape Town now. All sorts of distances are marked off, and two well known motorists have had letters of warning from the Commissioner. Constables have had instructions not to take anybody's name and address, but to march them straight away to the charge office. These regulations came into force about one month ago, but, just to show you what a law-abiding crowd we are, no one has been run in yet.

MR. M. IRVING, manager of the Dunlop Motor Company, expressed the opinion to me the other day that British manufacturers had not paid sufficient attention to turning out petrol lorries and delivery vans at a reasonable figure. A man can buy a good car at a low figure now, but the prices of heavy wagons are altogether too high. A big brake, say about 16 horse power, to carry about twenty passengers, and geared so as to run over all sorts and conditions of roads, would be a regular gold mine for anyone to run on interurban service in the Colony. When Mr. Menzies was taking the Daimler 12-h.p. lorry from Cape Town to Clanwilliam, he was on several occasions offered as much as fifteen pounds (£15) by travellers who wished to go from town to town. For a man

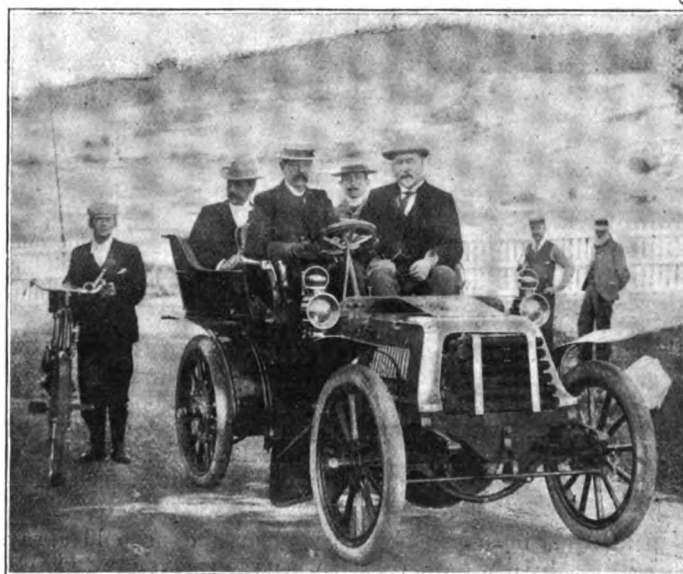
to drive a motor-vehicle up-country, he must thoroughly understand his trade. Between Ceres and Calvinia there is a stretch of a hundred miles of absolute desert over which the road between these two towns passes. Nine times out of ten, when travelling along this road, one will not meet a living thing, much less a human being. Nothing but scrub right away as far as the eye can see. The distance between Ceres and Calvinia is 150 miles, which Mr. Menzies reckons could be done in three days, regularly. Provision must, of course, be made for carrying baggage, and this must not be on the roof, as it would make the car top-heavy, and render it liable to overturn when running over the rough South African roads. I think that the question of rapid passenger and goods transport between up-country towns is going to be a big one, and that the automobile will play a big part in the opening up of the country.

THINGS are humming in Johannesburg. The Johannesburg Motor Car Co., under the supervision of Mr. Frank Whittaker, are doing a splendid trade. One of the best-known motorists in that city, a partner in the famous firm of H. Eckstein and Co., has recently headed a list of subscriptions for road improvements in and around Johannesburg with the princely donation of £1,000.

MR. DONALD MENZIES has recently returned from a trip from Cape Town to Port Elizabeth and back, which was eminently successful. The car was a 6½-h.p. "Gladiator," the same car on which Mr. Menzies made his 480 miles trip and also climbed up to the summit of Signal Hill.

MESSRS. GARLICK'S Motor and Cycle Supply, managed by Mr. Wm. M. Jenkins, are at present engaged in equipping a fine garage in this city. No expense has been spared in fitting up the garage, and a large staff of expert workmen has been engaged. Messrs. Garlick have on the water a 24-h.p. Darracq of a similar type to that recently purchased by King Edward, as well as three of the new 6½-h.p. Rambler cars.

By this mail I am sending you a photo of a "Star" car, with Dr. Fitzgerald at the helm, and the Hon. Arthur Douglass, M.L.A., Minister of Works for the Colony, on his left, two of his staff in the rear, and Mr. Marsh with one of the latest "Humber" motor-cycles at the side. The photo was taken



during the Hon. Arthur Douglass' visit to Grahamstown. I may add that the car was a special one got out by Messrs. Davies Marsh and Company, of Grahamstown, for the Dr., and is the first car that has made a success at climbing the hills in that district.

SOME USEFUL NOTES.

MANY owners of motor-cars fail to recognise the fact that their cars depreciate very rapidly in value by not being properly cleaned. The mud is allowed to dry on the paint and leave spots, instead of being washed off immediately the vehicle has returned to the garage. The motor becomes coated with grease and dust, and the entire vehicle rapidly puts on a dirty and second-hand appearance. On the other hand, there are cars which, after running thousands of miles, look almost as well as they did the day they were turned out from the factory. To remove dust from the paintwork a large common painter's brush is, remarks a writer in the "Automobile Magazine," as good as anything; but in muddy weather a soft sponge with plenty of water should be used. The sponge should be plunged frequently into the water and "dabbed" on the mud; do not attempt to wipe it off, as this will scratch the varnish. When every vestige of dust or mud has been removed the car may be wiped down with a soft chamois leather. Not even the brush, sponge, or leather should touch any greasy part, or it will spoil the gloss of the varnish. Separate cloths or leathers should be used for the motor and the gearing, these parts being finished last, and care being taken that no grit or dust be wiped into the bearings. It is needless to add that all lubricators, tanks, etc., should be closed during cleaning operations. After having removed all the dirt and water from the car, wipe the bright parts with a rag having a little vaseline on it, and give the chains a coating of tallow and blacklead, which can be kept ready mixed, and applied with a brush like that used for cleaning.

ALL dirt should be washed off the tyres, and, having dried them carefully, cuts and bad places should be cleaned out with benzine and then plugged and cemented with pieces of pure rubber and solution, so that they may be allowed as much time as possible to harden before being again used. On no account should a deflated tyre be allowed to support the weight of the car. If it is not convenient to repair the tyre at once, the weight of the car should be taken off it by a jack or other support.

TYRES should always be kept as hard as possible without exceeding the pressure that the tyre is able to stand. If the tyres are allowed to remain soft, the internal friction set up is very great and will eventually tend to perish the rubber and canvas, injuring the tube and causing much trouble later on.

THE necessity for something with which to carry water or petrol is recognised by many tourists, and to meet this need folding rubber pails have been put on the market. These, however, are not suitable for petrol, and do not meet the requirements as fully and cleanly as a little device used by Mr. C. E. Duryea. Since it is common practice to carry lubricating oil, a plain can large enough to telescope over the lubricating oil can requires no perceptible additional space, and makes a handy affair with which to dip water, carry petrol, or serve as wash basin for cleansing one's hands. It is just as valuable for one liquid as another. It stands alone, which some folding pails do not, and in many respects is superior. If of rectangular shape liquid may be poured from one corner without the use of a funnel. It can be made by any tinsmith at a small cost, and should have a stiff wire around the top on the outside, which not only preserves its shape and makes it better to handle, but forms a lip which prevents the liquid from running down the outside of the can.

IN putting in copper-asbestos washers, they should always be slightly rubbed with blacklead, when the parts screw together, as in the case of sparking plugs and some inlet valves. Where valves are held down by a bridge and nut, the latter cannot always be given sufficient pressure to make a tight joint, and it is advisable to tap the valve-seat all round with a mallet, when in place, to bed the copper washer down and ensure a good joint. The small American raw-hide mallets are most useful for this and similar purposes in the car-shed.

A CORRESPONDENT writes that experience with spark-gaps on several different types of cars with medium-speed engines shows that they distinctly slow the ignition. The advance spark lever in each case required to be two or three notches in advance of its usual positions at different speeds. We should be glad to have the experience of other motorists on this point.

IN re-packing a pump gland use plenty of graphite with the packing. The spindle is seldom sufficiently lubricated, and the graphite will go a long way towards remedying this. Glycerine in the cooling water, as a frost preventive, seems incidentally to considerably assist in lubricating the pump spindle. We have noticed it has been less frequently necessary to take up the packing during the winter in a car where it was employed.

WHERE there are facilities for accumulator charging at home, from a lamp bracket, it should be remembered that frequent charging for a short time is better for the accumulator than occasional charging for a long time, and, if anything, more economical.

FLYWHEEL WEIGHT.

THE most advantageous and the smallest practicable flywheel capacity for petrol motors are still mooted questions in automobile design. Increasing the flywheel capacity generally reduces vibration and the fluctuations in rotative speed, and increases the speed range of the motor and the ability of the vehicle to start on hills or in difficult places. The only disadvantageous feature connected with increasing the flywheel capacity is that extra weight must be carried. It may be of interest to examine the various disadvantageous results of insufficient flywheel capacity. No theorizing is required to prove that when an engine is equipped with too small a flywheel it vibrates excessively; this fact is patent to all who have had experience in engine building. The fluctuation of the motor speed when the flywheel is too small is a very serious defect. It subjects all the parts which are driven by the engine to very much greater stresses than if the engine speed were absolutely constant.

Suppose that when the motor runs at its normal speed there is a fluctuation between impulses of 5 per cent. When the vehicle runs at a fair rate of speed on level road, its speed could hardly be expected to vary that much in the short time between impulses. Yet, if the motor lost momentum quicker than the vehicle, part of the time between impulses the vehicle would impart power to the motor, and for the rest of the time the motor would drive the vehicle. The power applied by the motor to the vehicle would rise from zero to a maximum and fall to zero again in each period between impulses. For a given average power the maximum power and pressure would, therefore, be much increased by a slight fluctuation in engine speed. The pressures on the gear teeth and the stresses in the chains and tyres would be variable, and consequently much more severe than otherwise. The case here assumed is, of course, exaggerated considerably, but even under actual conditions the fluctuations in engine speed are a serious factor, and should be kept as low as possible.

It is, of course, understood, remarks the "Horseless Age," that a multi-cylinder engine requires less flywheel capacity than a single cylinder, a high speed engine less than a low speed, and a low compression engine than a high compression. No harm can result from providing a little more flywheel capacity than absolutely required. The tyres will profit more from the greater uniformity in the propelling power than they will suffer from the increased weight to be carried. With less vibration the car will be more comfortable to ride in. The motor will run at a slower speed with full throttle opening, since the heavier flywheel will overcome the compression resistance at a lower speed. A little flywheel weight above that absolutely required is not simple dead weight; it is beneficial in a number of ways.

HERE AND THERE.

THE Duke of Manchester has, we learn, just purchased a 24-h.p. Continental car.

MESSRS. EVART-HALL, LTD., have just supplied a 15-h.p. C.G.V. car to Lord Onslow.

HEREWITH we give an illustration of the motor-omnibus running between Lewisham and Eltham. It is a German Daimler vehicle, capable of carrying 27 passengers and weighing com-



plete about 5 tons. The Sirdar Co.'s 3in. high-speed Buffer tyres are used, having, we understand, given great satisfaction, both from the point of view of wear and of preventing side-slip.

MR. H. FRIEDENHAIN, of 16-20, Farringdon Avenue, London, E.C., has been appointed sole agent for the ignition specialities of L. Gianoli, of Paris, and has issued a wholesale price list of motor accessories and fittings.

MESSRS. W. GUEST AND SONS, of Sheffield, have just brought out a new compound known as "Puncture" for sealing punctures in the inner tubes, or filling up cuts in the outer covers, of pneumatic tyres without the use of patches.

THE British Motor Fittings Company have opened an office and show-room at 32, John Bright Street, Birmingham, under the management of Mr. F. W. Carpenter, where samples may be seen of their various manufactures, e.g., engines, gear cases, steering gears, and other parts of motor-cars.

THE Wigton rural councillors have doomed the motor-car to oblivion. By the spin of a coin—in lieu of the chairman's casting vote—they passed a resolution "strongly protesting" against any extension of speed of motor-cars, and suggesting the licensing of drivers, with various pains and penalties for defaulters.

THE Wolseley Company have sent us the official times of the 50-h.p. racer driven by Mr. S. Girling in the Circuit des Ardennes. This was 8 h. 48 min., which works out at the rate of 36.8 miles per hour. Except for tyre troubles, the car would have been well classed, one of the circuits having been made in the second fastest time.

THE growing importance of the automobile industry has induced the Case School of Applied Science of Cleveland, U.S.A., to pay particular attention to this new branch of engineering, and a laboratory for the study of automobile equipment is to be fitted up in time for the opening of the autumn course.

THE employees of several firms in Coventry held their annual outing on Saturday last. Those of the Motor Manufacturing Company, Limited, spent the day at Bristol and Ilfra-

combe. Between 40 and 50 employees of the Doherty Motor Accessories Company held their outing to Stratford-on-Avon. The weather was brilliantly fine and an enjoyable day was spent.

A HILL-CLIMBING test will take place on the Sun Rising Hill, Edgehill, Warwickshire, on the 25th inst., under the auspices of the Midland Automobile Club. The object of the competition is to test the powers of petrol cars in starting, stopping, and re-starting upon steep hills, without the use of the sprag or ratchets. Mr. Broughton Dugdale, president of the Midland Club, is offering a cup to the owner of the winning car.

IN addition to the electrification of the Tyneside branches and the construction of motor-cars to run on the railway between the Hartlepoons, the North-Eastern Railway Company have now decided to establish a regular motor-car service on the old Bridlington coaching highway between Beverley and several of the outlying villages as far as Beeford, a distance of thirteen miles. The cars for the service are being built by Messrs. Stirling's Motor Carriages, Limited.

SPEAKING at the annual meeting of Messrs. Greenwood and Batley, Limited, of Leeds, last week, Mr. A. Greenwood stated that in regard to the electrical department itself he had to tell the shareholders of a new departure, which was now fairly launched. It was the manufacture of electrically propelled motor-cars. A new system had been secured by the company, and arrangements had been made with the Electromobile Company, Limited, who were successfully introducing those motors in the form of landaus, coupes, etc., in London. A considerable quantity of these carriages were now running about the metropolis, and the company were turning out quite a number of them monthly.

THE Lancashire Steam Motor Company have secured an order for two of the four ton standard tip wagons for the Chelsea Vestry, a body which has had about three years' experience with two of these vehicles. The only difference in the repeat order is that interchangeable bodies are to be supplied, so that either a tip body or watering van may be used. The Lancashire Company expect to make a start in the first three bays of their new works in about a month from now. The land they have secured covers 6½ acres. This addition to the existing works will enable them to turn out three complete motor-vehicles per week.

MESSRS. MERRYWEATHER AND SONS, LTD., of Greenwich, have lately supplied a motor fire engine to the Portsmouth Fire



Brigade. The machine has a pumping capacity of 400 gallons per minute with 40-h.p., carries 40 galls. of liquid fuel and 100 of feed water, and runs on solid rubber wired-on tyres 4 in. wide. The vehicle was taken down to Portsmouth by road under its own steam, the accompanying illustration showing the passage through the town of Petersfield.

THE Automobile Club de Bretagne has just been formed at Nantes.

THE A.C.G.B.I. quarterly 100-mile trial will be held on Friday, the 24th inst.

OWING to the increase of their business, Messrs. Geipel and Lange are removing to new and more commodious premises at 72a, St. Thomas Street, S.E.

A NEW device for preventing tyre punctures, and also, at the same time reducing the chance of skidding and side-slipping, has recently been put on the market by Messrs. John Wheeldon and Co., of the Alma Rubber Works, Sheffield. The Guard, as it is called, is made of strong flexible fabric or cloth, in the shape of a thin band between which small sections of flat steel are placed, and firmly held in position by a strong elastic cement. The band is so flexible and pliable that it readily accommodates itself to any movement there may be in the tyre, thereby retaining the natural buoyancy and resiliency. The numerous small sections of thin steel are arranged side by side, and end to end (not overlapping), between the two strips of fabric, so that when the band is fixed between the inflated air tube and the outer tyre or cover, and by the pressure of the former it, in effect, practically presents a solid metal surface on the tread of the air tube. Tyres fitted with the Guard have been subjected to the test of running over a long trail of iron tacks, old and bent nails, screws, and broken glass bottles, etc., and for many months past have been used on

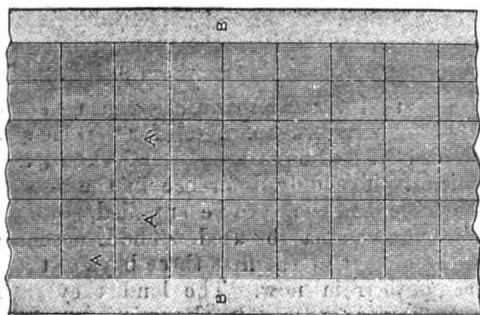


Fig. 1.—Section of Guard with upper covering removed to show metal section.

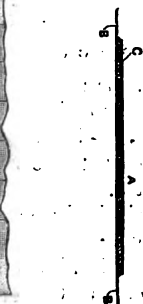


Fig. 2.—End Section with upper covering in place showing metal section between the fabric.

bicycles and motor-cars over rough country roads, in some cases over 1,000 and 2,000 miles, without being taken out, and without a single puncture, proofs being shown by the presence of nails, etc., in the outer cover, that punctures must have occurred had not the Guard been fitted. The Guard, which is very light in weight, is claimed to not only protect and preserve the air tube, but protects and prolongs the life of the outer cover. It is easily put in the tyre, it being simply laid straight and flat in the centre of the inside of the outer cover, no fastening whatever being required. It is not only as a puncture preventer that the Guard is useful. By its novel construction, and virtually forming a solid metal face under the tread of the outer cover or tyre, it is claimed that a firm hold or grip on the tread of the tyre is ensured. In fact, Messrs. Wheeldon state that, after many exhaustive tests, under all conditions on greasy inclines and bad roads, they have proved conclusively that the Guard prevents sideslips or "skidding."

REPLYING to Mr. H. Hobhouse in the House of Commons, as to whether any public authority had power to regulate the width of tyres of motor-cars between one and three tons in weight, Mr. Long has stated that in Section 6 of the Locomotives on Highways Act, 1896, the Local Government Board, under an order dated Nov. 9, 1896, had made the following regulations as regards the width of tyres: If the weight of the vehicle unladen is more than 15 cwt. and does not exceed 1 ton, the width of the tyre is to be not less 2½ in.; if such weight is more than 1 ton, and does not exceed 2 tons, the width is to be not less than 3 in.; if such weight exceeds 2 tons the width is to be not less than 4 in.

THE accompanying photograph is of a steam car built by Mr. A. G. Ainslie, Leeds. Commenced before the Light Locomotives Act, 1896, was passed, it possesses some interesting features. The engines, boiler, wheels, carriage, etc., were all made by the builder in spare time, from his own designs. The vehicle was constructed to carry four passengers, and on a trial run took that number up some stiff inclines at a fair speed. The water tanks and fuel bunkers are fixed under the seats, while starting and steering levers, foot and hand brakes, steam and water



gauges are all placed near the driver. The engine has two cylinders 2½ in. diameter, with a stroke of 4 in., fitted with ordinary D slide valves operated by Stephenson's link motion as used on locomotives. Water is supplied to the boiler by an injector and a force pump worked from the crank shaft. Mr. Ainslie is now engaged in re-modelling the car. The same engines are being used, but a more powerful boiler is being fitted, this being intended to work at a pressure of 300 lbs. per square inch.

THE London Autocar Company, Limited, have just issued a new and complete catalogue of motor-car and cycle accessories.

MESSRS. W. H. BUXTON AND Co. have been appointed agents for Liverpool and District for the "Pipe" and "Magnet" cars.

MR. C. R. BASE, the well-known motorists' tailor, has now opened a department at Friswell's, 1, Albany Street, Regent's Park, N.W.

DURING the months of May and June no less than 62 motor-cars were turned out from the works of the Hozier Engineering Co., Bridgeton.

WE have received a circular from the Snefield and District Automobile Club, from which we learn that the membership now comprises nearly a hundred names.



MR. T. H. HOLDING, the well-known motorists' tailor, has just brought out the new motor-car drivers' coat illustrated herewith. The coat is made in all shades of melton, box cloth, etc.

MESSRS. MANN, EGERTON AND Co. have sent us a photograph of the fine new garage they have recently opened in Prince of Wales Road, Norwich. The photograph was taken on the day of the annual auction, and gives a good idea of the very large size of the building, which will hold about sixty cars.

At a meeting recently held in Manchester it was unanimously resolved that it is desirable to hold an International Exhibition in Manchester in 1905, and a committee was appointed to take such steps as they consider necessary to ascertain the views of those likely to be interested in such a project.

MOTOR-CYCLING NEWS.

A COUPLE of motor-cycle events were included in the Manchester Wheelers' sports on Saturday last. The attendance was estimated at 21,000. The mile motor-cycle (scratch race) resulted as follows:—H. Martin, Croydon, first; S. Wright, Dublin, second; L. Myerscough, Great Crosby, third. Won by 30 yards; time, 1min. 36 1-5 sec. A two miles motor-bicycle scratch race was won by S. Wright, Dublin; H. Martin being second; and J. Edge, Anfield, third. Won easily by 50 yards; time, 3min. 4 4-5sec.

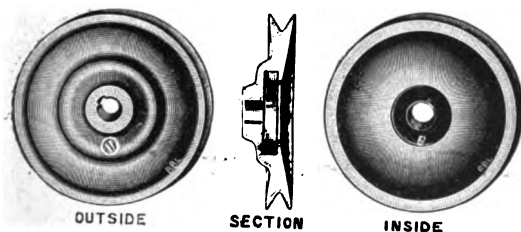
THE Motor Cycling Club is holding another 200 miles Reliability Trial on Saturday next. Any motor-cyclists who will be willing to act as observers or checkers on that day are requested to communicate with the Hon. Sec., Mr. G. E. Roberts, 17, Fieldhouse Road, Hyde Farm, Balham, S.W.

THE Rex Motor Company, who have thoroughly studied the question of forecarriages, have lately brought out a new design of two-seated vehicle, to which they have given the name "Tricar." The permanent character of the combination makes in reality a light motor carriage, without the complications necessary in a voiturette. The main stays of the carriage extend back to the rear of the machine. The ballhead column is so designed that it is strongly fitted from the engine cradle to the main frame of the carriage. The body is of a luxurious description, being a bucket seat carried on special springs. The steering is very sensitive and safe, the makers claiming that a speed of thirty miles can be obtained without the least danger. The machine is fitted with a special Rex 3½ actual h.p. engine and will take practically any hill without assistance. A distinct feature of the machine is the introduction of the wind catcher cowl, which concentrates the rush of air to the engine and diminishes the tendency of the latter to overheat.

MR. GEORGE A. WYMAN has just completed the journey from San Francisco to New York on a motor-cycle, being the first rider to accomplish the feat. He took fifty days to journey from San Francisco to New York, and for several hundred miles he had recourse to the railway track, while for long distances the roads were so bad that riding was impossible.

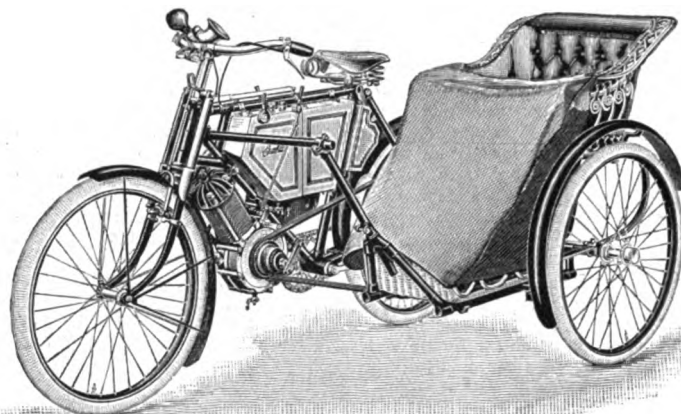
OWING to many of the principals of firms connected with the trade being in Ireland during the past week, it has been decided to accept entries for the motor-cycle reliability trials until noon, Saturday, the 18th inst., without payment of extra fee. After this date the entrance fee will be increased 25 per cent. until the 25th inst., when the entries finally close.

A SMALL but notable feature of the "Brown" motor-bicycle is the oil-retaining engine pulley. The accompanying illustration shows that the centre of this pulley is hollowed out to catch the waste oil which finds its way through the main



bearing, and by removing a screw the oil can be drained from the pulley after the day's run. This entirely prevents the oil reaching the belt, and obviates one of the greatest troubles of the motor-cyclist—the slipping of the belt.

MESSRS. MILLS AND FULFORD, of Coventry, who have for sometime made a speciality of trailers, have now brought out the sociable attachment for motor-bicycles illustrated herewith. It is known as the Duadcar, and is so arranged that it can be



quickly attached to either side of a motor-bicycle. It can also be supplied with a trailing rod and an extra wheel, allowing the attachment to be used as an ordinary trailer when desired.

A BARNESLEY motor-cyclist was last week fined 10s. and costs for not having taken out a licence for his motor-cycle. An Ebbw Vale rider has also been summoned on a similar charge. In this case the Bench were of opinion that although defendant had been negligent he had no intention to defraud, and ordered him to pay costs only.

A LETTER has been sent to the Secretary of the Auto Cycle Club by the "Singer Cycle Co., Messrs. Bayliss, Thomas and Co., Humber's, Rex Motor Manufacturing Co., Messrs. Hobart, Bird and Co., the Coventry Eagle Cycle Co., and the Quadrant Cycle Co.," with regard to the conditions of the motor-cycle reliability trials. In the letter it is stated that the conditions imposed by the committee appear to be much at variance with what might reasonably be considered to constitute reliability of motor-cycles. As regards Rule 27, exception is taken to the system of marking for the following reasons:—"We consider that for a roadster machine to be subjected to a speed trial on the track is altogether a mistake. The question of lightness is a very immaterial point in a motor-cycle. The question of price is one that should not enter into the committee's calculation. Rules 28 and 51: We consider these somewhat contradictory one with the other. Rule 37—Hill climbing: Hill climbing appears to us to be one of the important points of motor-cycling, and it is essential that marks should be given for machines that climb the hill best without pedalling; in fact, we go so far as to suggest that pedalling should not be allowed. It also appears to us strange that tricycles and tandems are, by the weight limit, debarred from entry, while we take Rule 8 to read that when the bicycle is combined with fore-carriage the weight only of the bicycle is taken into account. We recommend that the marks allotted for price, lightness and track racing should be transferred to reliability and hill climbing. Our objections to the present rules are so serious that we are afraid, unless altered, we cannot, in justice to ourselves and to the public, enter the competition, the conditions being, in our opinion, entirely against the majority of high-class machines."

BARON SPECK VON STERNBERG, the new German Ambassador at Washington, has become an enthusiastic automobilist.

AT a meeting of the Llandoverly Town Council last week, a suggestion that the Council should support Lampeter in their light railway application fell through, motor-cars being favoured.

CORRESPONDENCE.

THE INADEQUACY OF THE NEW BILL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The first sub-section runs in these words:—"If any person drives a motor-car on a public highway recklessly, or at a speed which is dangerous to the public, having regard to all the circumstances of the case, including the nature, condition, and use of the highway, and to the amount of traffic which actually is at the time, or which might be expected to be on the highway, that person shall be guilty of an offence under the Act." On Thursday last I was the victim of the Bingham Court in a fine of £10 and costs, although it was my first offence; no one was proved to be endangered, and it was stated that my car was used by me as a business vehicle as commercial traveller. This is my fourth season of motoring, and I have doubtless driven over 50,000 miles, and have never before been even cautioned by police. I have found my car a great success in my business, but I fear for some years I shall have at least to "go back" from my 12-h.p. "Progress" to something very much more unpretentious in the solid-tyre line, just for local journeys only, and so take my longer journeys in the old, miserable way per trains and "hay motors," as I see no relief in the new Bill from the clause quoted by me above. I truly hope that this particular clause may yet be amended.—Yours truly,

R. R. LATHAM.

THE SPEED TRIALS IN PHOENIX PARK.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Have the Automobile Club formulated a new system of running off contests? Why I ask is because I saw the various heats of the tourist class cars run off, altogether nine heats of two cars each, and then the final heat, in which only two cars competed. This seemed to me to be a very funny way of doing things, and absolutely at variance with the usual way of carrying out races. The coupling in the heats, too, seems to have been most extraordinary; for instance, two 20-h.p. M.M.C. cars were pitted against two 10-h.p. cars, Panhard and Brush. Of course the M.M.C.'s won their heats without the slightest difficulty and without having to hurry. This leads me to the assumption that the two M.M.C. cars, although running, did not do their best in their heats because it was not necessary, their opponents being much slower cars. Consequently, because of this erratic coupling, it is quite probable that they lost their chance of the prize. I imagine that they would have made faster times had they had cars of their own mettle to run against. It is proved by the winner's times that the fact of his being obliged to do his very utmost in the final made him get more out of his car. His first time was 2 min. 11 sec., and his final 2 min. 6 sec.

I questioned some of the drivers of cars in the contest afterwards, and elicited the information that they were quite unaware before the race was run that it would be carried out in the way it was, and Mr. Burgess said he could have got more out of his car if it was necessary, as its accelerator had several more notches to go. I advised him to protest. I most certainly should had I been in his position. I do not hold a brief for the M.M.C., but mention them specially because of the way they were matched.—Yours faithfully,

W. ETHERINGTON.

A PLEA FOR THE LIGHT RACING CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a motorist, but as one with no real practical experience, I quite agree with your correspondent's remarks in your last week's issue as to the inadvisability of building cars with such powerful engines when, on comparison, motors of lower horse-power show to much greater advantage. For instance, I recently made a motor tour through France, when my attention was drawn to the "Moto-bloc" car, which ran in the recent Paris-Madrid Race; this car, although of 12 horse-power (120 mm. cylinder by 120 mm. stroke), reached Bordeaux in 9 hours 10 mins. 47 secs. (an average speed of about 40 miles per hour). This, without doubt, I consider an exceptionally fine run for a motor of such low horse-power, and I think you will agree with me that it tends to show that it is quite unnecessary to use such enormous high-power motors.—Yours truly,

CHARLES HANSON.

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you kindly allow me a little space with reference to motor-car races or tests of same? We all cannot help but take an interest in the Gordon Bennett race, etc., but at the same time, in my opinion, it would be more useful to the classes in general if there was a race or races by cars, say, from 3-h.p. to 20-h.p. These are cars that are required every day, and I for one am looking out for a serviceable car. We all want the best procurable on the market, but what can we glean from such highly-powered cars as 50 to 90-h.p. for general use? Let us have proper tests, such as hill-climbing, etc., by smaller cars, and then the public will have that which they are continually wanting.—Yours truly,

E. BRADLEY.

SURREY POLICE TRAPS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—There is an electrically-timed police trap going down to Merstham, also one on the switchback over Redhill Common. The Epsom trap is worked in this way. Somewhere in East Street there is an electric bell which a man rings as the car passes. A sergeant—placed generally by the Spread Eagle—starts his watch, and if the car is the slightest bit over the legal limit when it arrives at his station (i.e., opposite the Spread Eagle Hotel, in the middle of High Street, Epsom) it is stopped, and a summons is sure to follow.

I found the Epsom trap out in a curious manner. On Sunday morning, coming down Church Street and proceeding along High Street at seven miles per hour, I was called upon at the Spread Eagle to stop, another car which came along East Street being on the point of passing me. The following conversation ensued.

P. C.: Your name and address?

Motorist: Whatever for? We were only going a walking pace.

P. C.: Your name and address?

Motorist: Nonsense, man! Why I live here, and have come slowly.

P. C.: Where do you live?

Motorist: In Church Street.

P. C.: I thought you had come down East Street. You may go on.

Motorist: That's all very fine, but what do you mean by stopping me? I could, however, get no satisfaction. Next day, Monday, I attended the Petty Sessions and applied to the magistrates for their protection and assistance—couldn't get either. I then applied for a summons for an assault (technical)—not granted. I then asked for a summons for a malicious endeavour to incite and provoke a breach of the peace, but had to be content with the local inspector taking down my written report, which is to be submitted to the Commissioner of Police. There was no excuse I can see for thus treating me as an outlaw, but no doubt I was taken for the driver of the car which had come down East Street. As I explained to the magistrate, I don't mind being robbed for going fast, as I have a separate P.O. Charity Savings Bank account in which I put all my former customary donations, and draw on it as fined.—Yours truly,

EPSOMITE.

COST OF UPKEEP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read the letter from Mr. Wingfield in your issue of the 27th ult. with regard to his 6-h.p. M.M.C. car, and, without wishing to be rude, must say I cannot understand what he has been doing with his car. I have a 6-h.p. M.M.C. car, which I purchased in the beginning of 1902, and I have run altogether nearly 10,000 miles. The total cost, including insurance and all repairs, but not including any police court fines which I am sorry to say I have had to suffer from on more than one occasion, works out at 1'02d. per mile. When it is taken into account that I nearly always carry four persons I am sure you will agree that I have nothing to grumble at from my car.—Yours faithfully,

W. G. SHERINGTON.

ANTAGONISTIC DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It may amuse and instruct your readers to know that a little time ago a friend asked me to get for him a capable man—able to drive pony, look after garden, or clean motor, etc. I at once advertised: "Coachman-gardener wanted; pony; boy helps, must understand cleaning motor; rooms; wages, £2 5s.," which was what my friend offered. Result was numerous applications; and now when I drive out my motor all coachmen make way for me, many touch their hats, and as to gardeners, they stand with scythe in hand ready to cut down any person who would get in the way of the motor. It has developed a new idea for them, this advertisement, and if all your readers were to try and help this class, there is no doubt but that there would be less prejudice against the motor.—Yours faithfully,

I. C.

QUERIES RE RUST AND CLUTCHES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of your readers tell me (1) How to remove rust and lime from the inside of the water jacket of my cylinder? The water here is very hard, and contains much iron, and I cannot procure soft water. (2) The right kind of leather to use for the friction clutch of a motor? (3) In removing the clutch for the purpose of renewing the leather, is it necessary to use clamps to overcome the spring? I am a man of moderate means, and do nearly all repairs myself. These are things I do not know, and should like some hints.—Yours truly,

"A MAN OF MODERATE MEANS."

SEQUEL TO THE WALK TO BRIGHTON.

In the City of London Court, before his Honour Judge Rentoul, K.C., last week, Mr. André J. Moyses, stockbrokers' authorised clerk, sued the Central Motor Company, Limited, for £20, as damages for breach of contract. The defendants counter-claimed for five guineas. The plaintiff said he hired a motor-car of the defendants in order to go to Brighton and back, as he wanted to see the walking competition. The car was

ordered for ten o'clock, but it did not arrive until one o'clock. It reached Brighton at seven o'clock after several delays. On the return journey many stoppages occurred owing to the car being defective, and at last at Handcross it broke down at half-past two in the morning. He and his friend had to walk to Three Bridges, and stay on the platform until 7.30, when they took train to London. For the defence it was stated that no real damage had been suffered. The car was an ordinary machine "with all its vices," and was not a paragon. Motor-cars were notoriously uncertain. The road was dark, and the car did not break down. The water ran short, and then the plaintiffs walked off instead of waiting. The jury found for the plaintiff for a farthing on the claim, and on the counter-claim, the plaintiff received an order for his costs.

POLICE TRAPS.

THE furious driving cases at Woking are the result of Sergeant Jarrett's watchfulness on the Ripley road.

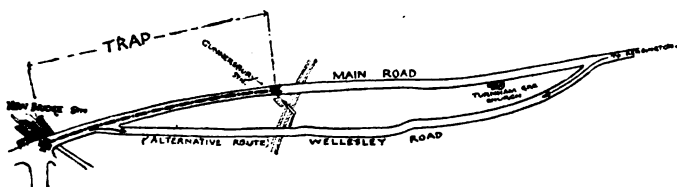
THE police have marked out a furlong in Hyde Park, and are taking the speed of all cars that pass over it.

THE furious driving cases at Garstang are the result of a measured quarter-mile on the Garstang road, at Cloughton.

THE police are timing motor-cars between the fourth and fifth milestones on the road between Ledbury and Ross, Worcestershire.

A READING correspondent writes:—"Police traps thick on Bath Road between Reading and Newbury; twelve miles strictly."

A CHISWICK reader sends us the accompanying sketch of a police trap



between Kew and Turnham Green. The diagram also shows an alternative route to avoid the trap.

A POLICE trap exists on the Great North road, about six miles north of Stamford, at a place called the "Bloody Oaks." Three or four motorists have been caught there.

APPARENTLY the style of house one lives in is to be a feature in future in fixing the amount of fine for furious driving, for in the course of a case at Croydon last week, the police-constable stated that the defendant lived in a house the rental value of which was about £50 a year.

A SLOUGH correspondent sends us the following particulars of a police trap in that town. On Saturdays, Sundays, and also in the evenings, two men stand at the beginning of the town, one having a pair of field-glasses, and the other a stop watch; by this means, every approaching car is timed over a measured distance. The two policemen accompanying them are in hiding twenty yards further on.

FURIOUS DRIVING.

THE magistrates and the police at the Reigate County Bench on Saturday were busily engaged in dealing with motorists who had been exceeding the speed limit. There were twenty-six cases for hearing, and the fines totalled up to £43 and costs. Of late the police have only devoted one day per month to catching motorists, but during June the 27th and 28th were set apart for this particular branch of constabulary work. It would seem, judging from the admission made by a police-sergeant, on being cross-examined by one of the defendants, that orders have been given that only drivers who are travelling at a speed exceeding twenty miles will in the future be summoned in the Petty Sessional division of Reigate.

An interesting case was heard before the Combe Martin county magistrates last week, in which Harry Jenner, the driver of the motor-bus between Ilfracombe and Blackmoor Station, on the Lynton and Barnstaple Railway, and in the employ of the Ilfracombe Motor Coach Company, was summoned for driving the motor-bus, "the weight of which unladen is one ton and a half and does not exceed two tons," at a greater speed than eight miles per hour, contrary to the regulations with respect to the use of light locomotives on highways made by the Local Government Board. Mr. Finch, who defended, addressed the magistrates, pointing out that ample time was allowed for the journey of eleven miles, which was scheduled and performed in one hour and a half. Defendant admitted that his bus was travelling between ten and twelve miles per hour. The magistrates announced that the defendant would be fined £3 and costs for having exceeded eight miles per hour. The chairman stated that, as this was the first case, the fine had been lower than it otherwise would have been.

STORING PETROL WITHOUT A LICENCE.

EDMUND ALEXANDER, of Lordship Lane, East Dulwich, was summoned last week by the London County Council for unlawfully keeping petroleum to which the Petroleum Acts 1871 to 1879 applied, without a licence, he having become unlicensed by reason of his having violated the conditions of the licence granted to him. Mr. Helman-Pidsley, from the solicitor's department of the Council, explained that in December last the defendant was granted a licence, which in the ordinary course would remain good for a year, to keep petroleum spirit on his premises. There were various conditions allotted to the licence, and upon any violation of them; the holder

was deemed to be an unlicensed person. On the 4th ult. one of the Council's officers found a can of petroleum spirit was being kept in the passage leading from the shop to the yard, the manager's explanation being that it was kept there for convenience. The defendant said the shop was under management. A proper store had been built in the yard, and his man had particular instructions to keep the spirit there and not to break the law in any way. What was done was not done by his authority or with his knowledge. A fine of £5 and 23s. costs was imposed.

CLUB NEWS.

YORKSHIRE AUTOMOBILE CLUB.

THE Committee of the Yorkshire A.C. decided to make special arrangements for their own members and friends to view the Gordon Bennett race, and some two or three months ago the hon. secretary, Mr. A. W. Dougill, and the hon. treasurer, Mr. L. Hey, visited the Course to find a suitable place for viewing the race. After inspecting miles of road and interviewing dozens of typical Irish people, who had plots of land to hire, a site was selected at Ardsclull. On Tuesday evening before the race the Y.A.C. party left Leeds per the L. and N.W. Railway Company, en route for Athy via Holyhead and Dublin, taking with them a tremendous pile of hampers of provisions for the camp which had been put up at Messrs. Powolny's. In due course, all were safely landed at North Wall, Dublin, in time to catch the early train, but owing to the crush of traffic the luggage could not be unloaded in time. At 12.20 all was on board, and the party enjoyed a ride as far as Kildare, and as the train was twice as long as any of the station platforms, many a laugh was enjoyed at the way the extraordinary traffic was handled. At Kildare efforts were made to send a telegram to Athy, but on presenting same at 2 p.m. the information was given that there were messages awaiting transmission since 9 a.m. As the camp was only twelve miles from Kildare, and there was a two-hours' wait for the train at Athy, some of the members suggested driving over by jaunting car, and accordingly prices were asked of several drivers, these showing a great difference, varying from 15s. to £3 for each car to carry four.

Eventually, about 6 p.m., camp was reached. This consisted of two large square sleeping tents, with wooded floors and mattresses to sleep on, one long dining-tent and a similar-sized kitchen tent. In about an hour after arrival the energetic waiters had a substantial supper laid out. The whole camp were ready for bed about 10 p.m., after having had a long day with practically no sleep on board the night before, and soon all was quiet, except for the toot toot of the horns of various belated cars travelling over the course. Early on the morning of the Gordon Bennett race day (to be precise, about 2.30 a.m.) there were sounds of rising, and there was a rush for the water tube. Promptly at 6 a.m. the constables cleared the road, and many were the attempts, mostly in vain, made by belated spectators to pass the police. Soon the English cars were in sight and received cheers as they passed. Then came a period of waiting until the first car made its appearance, and this was spent in having breakfast; then came a return to the stand to wait for the first car, and Edge was cheered on passing. Lunch at midday proved an interesting interval, as, owing to many of the cars dropping out, the race began to get rather slow. After lunch excitement was again provided by the American cars, which occasionally turned up unexpectedly. Tea was from four to five, and had been arranged to be taken outside on the stand, but, owing to the rain and thunder, was partaken of in the tents. After dinner most of the party strolled about gossiping with passing friends or walking on the Course until after dark. Then round the camp fire the tales of motoring escapes, and other camps were told, and finally bedtime came to close a never-to-be-forgotten day. Next morning, Friday, the early risers were up and about at 4 a.m., but some preferred to rest until breakfast time at 7.30. After this some of the party drove or walked down to Athy to catch the early train to Dublin, whilst others lounged about or went to the police barracks to see the Irish Constabulary going away. At 12.47 on Friday the remainder of the camp were on the train for Dublin, where some members preferred to stay for the Phoenix Park trials, whilst others made straight for home. Amongst those present were Messrs. Booth, Palmer, Harrison, J. Greenwood, Whitworth, Lynn, Braime, Beevers, Holgate, Winn, Vince, Duffield, Hill, Hales, Armitage, S. Whiteley, Owen Brooks, Borland, C. Atkinson, H. R. Kirk, R. Smith, I. Kirk, Walker, Gustwick, Habergam, and Jowett.

REFUSING TO STOP.

At the Leven Petty Sessions last week, P. Gaskell, architect, Hornsea was summoned for not stopping his motor-car on the Skirlington road when requested to do so in accordance with the provisions of the Light Locomotives Act. It was stated that complainant was driving from Aldbrough to High Skirlington about nine o'clock on the night of June 13th. On noticing the approach of a motor-car, complainant put up his hand and signalled for the driver to stop. When the car was practically under the horse's nose the driver blew a horn and the horse turned restive and backed the trap into a ditch. The damage to the trap was estimated at £2. Defendant stated that he had driven a car for two years, and that was the first complaint that had been made against him. He sounded the horn when 200 yards from the trap, and brought the car to a standstill when about twenty-five yards from the horse. The horse and trap were drawn across the road. One of the occupants of the car alighted and led the horse. The Bench found that the defendant had not exercised proper care, and fined him £2 and costs.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Downham ...	H. Johnson, Lynn	—	£1, etc.
" ...	*W. Smith, Lynn	25	10s., etc.
Croydon ...	*C. Field, Wallington	22½	£2, etc.
Birmingham	F. Lanchester	—	£3, etc.
"	Clement Richards	—	£3, etc.
Aleester ...	*W. Akers, Birmingham	—	costs.
"	*P. Frank, Aston	22½	—
Mortlake ...	Earl of Shrewsbury	28	£1.
"	A. Steele, Barnes	20½	5s.
Solihull ...	A.C. Kenrick, Edgbaston	27½	Dismissed
"	A. Lovekin, Solihull	—	—
"	*J. Truman	30	10s., etc.
"	C. Parker, Sparkbrook	36	£1, etc.
Northwich ...	F. Smith, Manchester	20	Dismissed.
Kingston ...	F. Dale, West Kensington	20	£5.
"	W. Wilson, Hampstead	25	£3.
"	P. Nelko, South Kensington	20	£4.
"	H. Mosenthal, Kensington	2½	£3.
Inverness ...	R. Hargreaves, Gaick	20	£5, etc.
"	A. Edwards, Sanquhar	—	£1, etc.
Windsor ...	Hugo de Bathe	18	£5.
Woking ...	H. R. Pope, Westminster	—	10s.
"	H. Le Bran, London, W.C.	23	£3.
"	W. G. James, Claygate	22½	£3.
"	W. Rick, Pimlico	22	£3.
Garstang ...	Dr. Wigglesworth, Kirkham	17	£3, etc.
"	J. Nelson, Nelson	16	£2, etc.
"	G. Thorpe, Newton-le-Willows	19	£5, etc.
"	F. G. Lyon	24	£7, etc.
"	W. Ross, Lancaster	18	£2, etc.
Comb Martin	H. Jennings, Ilfracombe	14	£3, etc.
Selby ...	J. W. Pitt, Liversedge	17	£2, etc.
St Austell ...	*J. W. Frost, St. Austell	24	£1 10s., etc.
York ...	F. Toy, York	14	£2, etc.
Market Rasen	Major H. Josse, Grimsby	—	£10, etc.
Oakham ...	H. Pearson, Sheffield	—	£3, etc.
"	J. Cason, driver to Sir Chas. Seeley	—	£3, etc.
"	H. Tryon, Stamford	—	£5.
Haywards	J. Hollis, Aldershot	—	£5, etc.
Heath ...	Major Donald M. Stuart	—	£3, etc.
Cupar ...	M. F. Burrows, J.P., Manchester	25½	10s., etc.
Colleshill ...	*E. Allsopp, Erdington	32	10s., etc.
"	F. J. Gardiner, Sparkhill	24	10s., etc.
Colne ...	G. H. Alham, Nelson	17	£1.
Arundel ...	Lord Nivian Crichton Stuart	32	£5, etc.
Brownhills ...	*A. Brown, Chasetown	18	10s., etc.
Croydon ...	A. Plumbridge, Anerley	18	£1, etc.
"	H. Letts, Croydon	16½	£1, etc.
Bingham ...	R. R. Lathom, West Bridgeford	30	£10, etc.
Rugby ...	*W. J. Marshall, Bilton	18	£1.
Ryde ...	E. Buck, Sea View	—	£5, etc.
Marylebone	A. Colbeck, Camden Town	26	£2, etc.
Ledbury ...	*R. Bennett, Ross	42	£1.
Leominster ...	O. H. Bayldon, Bath	24	£5, etc.
Bath ...	*J. Bevan, Bristol	23	£1.
Windsor ...	J. Herbert, Kensington	—	Warrant Issued
Halifax ...	J. H. Sorsby	19	£2 10s., etc.
Bedford ...	*J. A. Plowman, Sheffield	16	Dismissed.
"	*A. L. Walters	20	£1 10s., etc.
Edinburgh ...	A. Falconer	—	£1.
Reigate	E. J. May, Croydon	25	£1 10s. etc.
"	F. Porter, Lee	—	£2, etc.
"	H. V. Long, London, W.C.	—	£2, etc.
"	Dr. G. Field, Notting Hill	—	£2, etc.
"	C. Watney, London, W.	—	£2, etc.
"	J. D. Hill, London, W.	—	£2, etc.
"	J. H. Keep, East Ham	—	£2, etc.
"	Horace Morley, Horley	—	£2, etc.
"	H. Evans, Hackney	—	£2, etc.
"	H. Walters, Hayes	—	£2, etc.
"	F. Large, London, W.	—	£2, etc.
"	F. Wallace Ritchie, Ealing	—	£2, etc.
"	Wm. Colbert, Westminster	—	£2, etc.
"	W. Aston, Ealing	—	£2, etc.
"	R. G. Hovenden, Croydon	—	£2, etc.
"	V. Chaverot, London, E.C.	—	£2, etc.
"	R. Brewer, Westminster	—	£2, etc.
"	F. Borton, Wimbledon	—	£2, etc.

FURIOUS DRIVING CASES.—(Continued.)

Reigate	A. A. Thomas, Beckenham	—	£2, etc.
"	A. Standford, Thornton Heath	—	£1, etc.
"	C. D. Destre, South Kensington	—	£1, etc.
"	F. Williams	—	£1, etc.
"	C. J. MacMahon, Kenley	—	£1, etc.

* where no alleged speed is given it is understood to be above the legal limit.
* Motor-Cycle Cases.

A BREACH OF CONTRACT CASE.

THE case of Luard v. Karminski came on for hearing at the London Sheriffs' Court last week.

Mr. A. Houston, counsel for plaintiff, in opening the case, said that in October, 1902, an agreement was entered into between the plaintiff and defendant, the latter being a motor-car manufacturer, of Strasburg, whereby plaintiff was to be sole agent in England for the sale of the cars manufactured by the defendant, who traded as Karminski and Co. According to agreement, the plaintiff purchased six cars from the defendant for £1,042 without tyres, and after freight and fittings had brought up the cost to £1,231, the cars turned out to be "absolutely useless."

He also bought, through Karminski, two 12-h.p. cars at £760, and then found that the proper price was only £550.

Mr. Edward Sydney Luard, the plaintiff, gave evidence bearing out counsel's opening. On each occasion when the cars were taken out for trial runs they broke down, and intending purchasers had to make their way home as best they could. The work of the cars was also inferior.

Further evidence showed that the only value in the six cars was in the material. If they were broken up the material would realise about £60 per car. The jury assessed the damages at £1,200. Judgment accordingly, with costs.

A BRIGHTON ACTION.

At the Sussex Assizes last week an action was tried without a jury, in which Mr. Muhlenkamp, of Brighton, sued the Brighton and Sussex Motor-Car Company to recover damages for breach of contract. The case for the plaintiff was that he ordered from defendants a Panhard car, with a Rothschild et Fils body, and with axles dropped as low as possible; but that a car was supplied with a Clement Rothschild body and with a straight axle at the back. The defendants alleged that plaintiff agreed to a variation of the contract, with regard to the Rothschild et Fils body, and saw the specification of the body which was supplied. They also stated that the axles were as low as possible. His Worship gave judgment for the plaintiff for £110—£80 in respect of the body, and £30 in respect of the axle.

A THEATRICAL MOTOR-CAR DAMAGED.

At the Shoreditch County Court last week, before His Honour Judge Smyly, K.C., Mrs. Florence D'Orsay, professionally known as Miss Marie Dagmar, sued the London General Omnibus Company, Limited, for damages to her motor-car used by her on the stage in the play, "A Life's Revenge." Mr. Bodilly, for Miss Dagmar, said that on April 20th last her motor-car was being taken to the theatre, and whilst in Kingsland Road the traffic was stopped. The driver of one of the defendants' omnibuses failed to stop, and crashed into the back of the motor-car. He was not quite sure what Miss Dagmar did with the motor-car on the stage, but that part of the play had to be eliminated, with the result that the takings of the play fell from £170 a week to £120. The collision smashed the back of the motor-car. Mr. Charles Warner, acting manager to Miss Dagmar, also said that the motor-car scene was the attraction of the play, and it was impossible to replace the motor-car under several weeks. For the defence it was contended that in re-starting the motor-car jumped back, and so damaged itself on the pole of the stationary omnibus. His Honour gave judgment for the plaintiff for £14 15s., the actual cost of the damage done.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, JULY 25, 1903.

[No. 229.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



ELSEWHERE we record some impressions of the recent Irish tour which cannot fail to secure acknowledgment on both sides of the Irish Sea. The reliability of the motor-car has been demonstrated, and it has also been amply proved that it is not the death-dealing machine that some sensational journalists would have us believe. The A.C.G.B.I. is to be felicitated on the way the tour went through, although we cannot extend our congratulations to the way in which all the arrangements were carried out. These seemed to lack decision and definiteness. Early plans were abandoned without notice to those concerned, and new notions adopted with equal lack of publicity. Still the tour was successful in educating the public, and it now remains for the Irish people to learn the lessons set forth on another page, viz., to see to their highways, to erect signposts at cross roads, to moderate their notions of the wealth of motorists, and to seek to take advantage of the industry to foster their prosperity.

The Horse-Power of Petrol Motors.

OUR attention has frequently been called to the fact that the horse-power ratings of petrol motors, such as are used on motor-cars, are not at all times reliable; that they are often overrated, and that a standard system of rating would be desirable, which would convey a more comprehensive idea of the capacity of the motor and form a basis for comparison. It is no doubt true that the horse-powers of many of the motors in use are rated, not by how much work they are capable of doing, but by how much work it is considered they ought to do. The rated, or, rather, the advertised, power of a motor depends, therefore, to some extent on the designer, as well as on the motor, a sort of personal factor being introduced. This, however, may not be done with any intention of misrepresenting the capacity of the vehicle, but purely through ignorance of the actual or possible horse-power of the engine employed. In any case, the question is one of great importance to both builders and users of motor-cars, to whom we recommend a careful perusal of the article on the subject we publish on another page of the present issue. As is mentioned therein, it is greatly to be desired that some way should be found of reducing the present confusion and want of system with regard to the horse-power ratings of petrol motors. To this end a suggestion is made on which we shall be glad to receive the opinions of readers.

Police Traps.

THE value of the information given in our columns week by week with regard to police traps, and also to the activity of the local authorities in inciting the police to harass motorists, is recognised far and wide. Often have our intimations enabled motorists to know where to crawl along the country side or to avoid roads likely to prove expensive. The police do not appreciate the publicity thus given to their methods, but we regard our policy as of the greatest utility to our readers. At the

West London Police Court, the other day, Mr. Plowden admitted that by the traps laid by the police for unwary motorists the latter were placed in overwhelming difficulties, but the magistrate, unless he held that the police were acting in bad faith, was bound to convict. This may be the magisterial view of the matter, but we should have thought that the duty of the police was to make easy the path of the innocent user of the road and not to seek every means to encompass his downfall.

A Challenge in Court.

WEEK-END motorists should beware of the police, for Saturdays and Sundays are the days most prolific in their activity. On a recent Saturday the police of Keighley laid a trap on the Skipton Road, between Keighley and Steeton, and caught half-a-dozen motorists, who have since been required to give £4 to the county fund. One of the drivers stated that with the gear set at the fifteen miles an hour speed it would be impossible to get that speed out of the car on a level road. The magistrates said that owing to the conflict of evidence they were willing to try the car over the same course with an expert driver, and the gear set at fifteen miles an hour. If the result showed that over fifteen miles an hour could be obtained then they would have to convict. The defendant urged that the valve must be partly closed, but the presiding alderman pointed out that the driver said that it was impossible to get fifteen miles an hour out of the car on the level road with the machinery set. He said nothing about the valve. "Then I do not agree to the test," retorted the defendant, who at once submitted to the fine.

The Reliability Trials.

MOTORISTS are now looking forward to the Reliability Trials of the A.C.G.B.I., and Mr. Basil Joy, as Technical Secretary of that organisation, is busy arranging the details. In order that the event shall not clash with important military and scientific meetings in September it has been decided to postpone the trials to September 18th, and the closing dates for entries have also been advanced a fortnight. More than a hundred entries have already been received, and we hope that the good weather which followed the recent Irish tour will not forsake the Club on the occasion of its forthcoming Trials. A new class known as Class A1 will be instituted, and all machines exceeding the 170 lbs. weight limit, such as tandems and quadricycles and similar two-seated vehicles, will be eligible for this section.

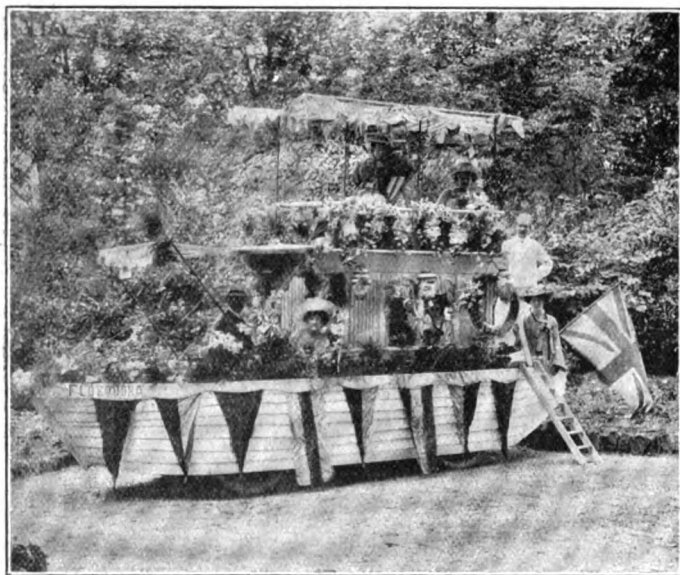
Heavy Traffic.

AT the Health Congress held at Liverpool, Mr. G. F. Deacon, President of the Engineering Section, was unable to take the chair in his department, and Professor H. S. Hele-Shaw was called upon to preside. The introduction of self-propelled vehicles had, he said, raised in an acute form the whole question of speed of traction upon the public road. The majority of people regarded the speed of the horse lorry as the natural rate of progress of merchandise on the highway, and hence the congestion, which was a standing disgrace to London and in less

degree of other cities. Take, for instance, the crawling stream of heavily laden or empty lorries along Liverpool's magnificent system of docks. Few people gave a thought to the millions in time and money which might be saved if the rate of progress of dock traffic were even doubled, and the length of space taken up by a team of horses and lorry were reduced to one half, so that the volume of trade on the roads could be accelerated, and, if necessary, quadrupled.

Decorated Motor-Cars.

At a cycle parade in aid of the Northampton General Hospital, Mr. H. W. Dover's Lanchester car attained distinction. His motor-car had been completely transformed, and it presented a good idea of a house-boat from Henley Regatta. At a little distance the illusion was complete, for the sides of the "boat" were worked out most cleverly, while at front and back there was a very fine show of flowering plants, and the "deck," covered with the generally necessary awning, was artistically decorated with natural flowers. There were passengers, five of them, including the ladies up aloft; and their progress was marked by the music of the mandoline and sweet singing. The representation was, to Northampton, novel in idea, and carried out with artistic perception and taste. Mr. W. B. Stevens, who drove the only other car in the competition, had a floral car, delightfully wreathed and festooned.



Mr. W. H. Dover's Motor-Car as a Floral House Boat.
S. H. Greenway Northampton.

Photo by]

A Hint to Motor Owners.

MAJOR LEE, M.P., who is a motorist as well as the President of the Hampshire Farmers' Club, has been addressing the members of the latter at Fareham, on the motor-car question. He rightly said that legislation should not seek to destroy a growing and useful industry, and ventured on the prediction that within the next decade the whole of the ordinary operations in agriculture now performed by heavy horses would be executed by motors. At the same time he condemned the drivers, including foreign professional drivers employed by English gentlemen, who are somewhat prone to drive motor-cars in what appears to the on-looker a somewhat reckless way. This sort of thing must be checked, and much good would be done by private owners not only instructing their drivers to have regard for other users of the road, but seeing personally that such instructions are obeyed.

Capt. Noble's View.

OUR list of furious driving cases is representative of most English counties, and again the southern roads appear to have become almost impossible for motorists. The Uckfield Bench of magistrates is a very estimable body, presided over by Captain Noble, who appears, however, to have a horror of motor-cars. In imposing an inclusive fine of £1 the other day, the gallant Captain said that had he to decide the case himself, the offending motorist would not have got off so easily. The Uckfield Bench may therefore be congratulated on the fact that all its members are not so intolerant as the gentleman who presides over them. When a quartette of cases was recently brought before him, Capt. Noble drew a graphic picture of the terrors of village life which had become ordinary and commonplace since the advent of the automobile. According to him, people have now to clamber on to the banks, and horses have to go into ditches to get out of the way of motorists. The performance of such acrobatic feats betokens a high order of intelligence in the equines as well as in the human individuals. Surely this aspect of the matter should appear to so military a person as the president of the Uckfield magistrates.

Under Canvas.

THE success of the Yorkshire Club's camping expedition in Ireland, coupled with equal popularity gained by other arrangements under canvas during the Gordon Bennett week, is probably one of the factors which have led the Yorkshire Club to arrange for a motor camp during the early days of next month. This will be located on the coast between Bridlington and Scarborough, and there, from July 31st to August 5th, will be the headquarters of the Yorkshire motorists. A large dining-room, drawing-room, kitchen, and motor-car store are to be erected, and bell tents provided for sleeping accommodation. During the week end a gymkhana will take place, and runs and tours will be arranged to various places of interest in the attractive locality. We understand that the field occupied will run quite close up to the cliffs, and should the weather be favourable—and a great deal depends on this point—the first organised motor camp in this country should be greatly enjoyed by all who participate therein.

Yorkshire Opposition.

WE would suggest to the Yorkshire Club that they should invite some members of the West Riding and Yorkshire County Council to their camp between Bridlington and Scarborough for the purpose of education in automobile matters. Inspired by the eloquence of the chairman, Alderman C. Milnes Gaskell, the Council has appointed a special committee to secure amendments to the Motor-Car Bill, and that these are likely to be hostile may be inferred from the speech of the worthy Alderman. He denounced the abolition of the speed limit and described the pains and penalties to be imposed should the Bill become law as a "perfect farce." More than that, the proposals of the Government were "the most supremely futile and ridiculous ever suggested to the country."

Motor-Car Tours.

ONE of the best features, from the tourists' point of view, in their Majesties' visit to Ireland will be the motor-car trip the King and Queen propose to make in some of the western districts, which, unfortunately, were not visited by many motorists during the recent automobile fortnight in the Emerald Isle. The King is making increasing use of his motor-car even in town work, and now very frequently drives from the London Railway termini to Buckingham Palace in one of his automobiles. The Prince and Princess of Wales, too, who are touring in Cornwall, have availed themselves of the motor-car for many drives in that county, and the fact is becoming increasingly apparent that fashionable Society will make less use of the railway in the

future than in the immediate past for holiday tours. The view of the country obtainable on the automobile is practically unlimited, and this is one of the factors which is conducive to the universal popularity of the motor-car.

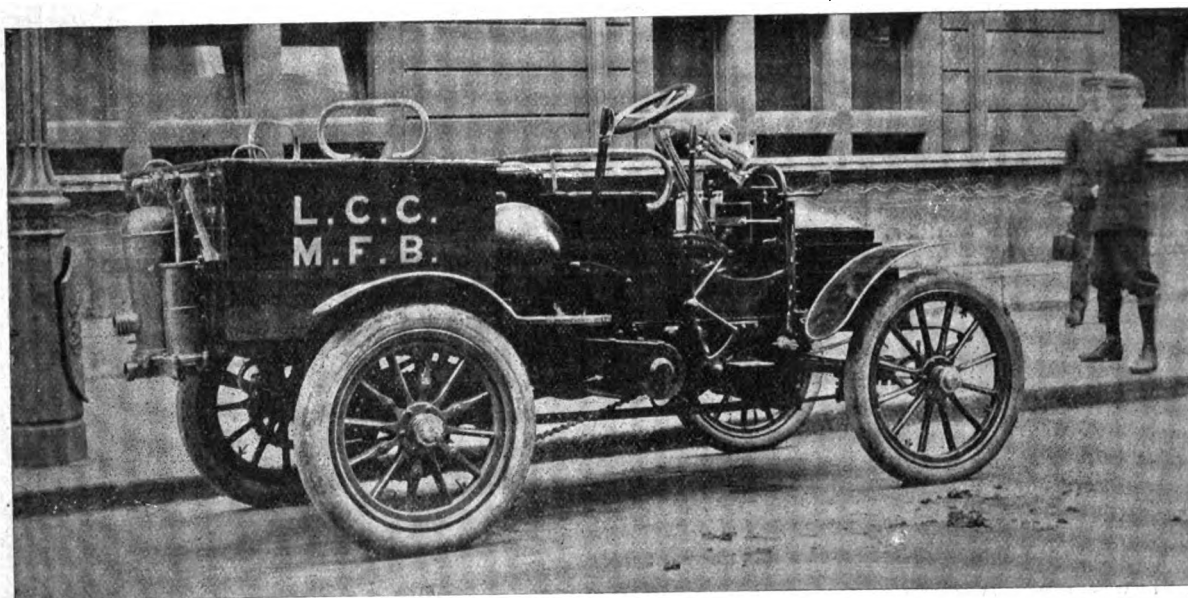
Royalty in the West.

WITH reference to the Prince of Wales and his Cornish tour, one of the most interesting trips was by motor-car, on Saturday, from Tregothnan by way of Helston and Mullion to Poldhu, and thence to the Lizard. Rains on the previous day had laid the dust, and the roads were consequently in good condition for touring. Crossing the Fal to Old Kea in a six-oared gig, the Prince and Princess were welcomed by Mr. J. Retallack, the Surveyor to the Truro District Council, who expressed the hope that the roads of the locality had been found in good condition. His Royal Highness replied that he had never driven over better roads, no loose stones being left to do damage to motor-car tyres. Lord Falmouth joined in the views of the Prince, and the surveyor was asked to convey the Royal appreciation of Cornish roads to the District Council. Two motor-cars—one belonging to the Prince, and the other to Lord

an ordinary horse-drawn carriage. The driver's seat is low, so that the occupants of the carriage have a good view through the glass panel at the front. Solid tyres have been fitted, and there is a detachable luggage basket on the roof.

Bad Conduct Condemned.

QUITE recently, half a dozen cases have occurred where drivers have not only shown a total disregard of the ordinary courtesy of the road, but have been guilty of actions likely to bring the whole of the automobile movement into disrepute. We sympathise most thoroughly with the Hon. Sidney Holland, the chairman of the Poplar Hospital, who has made public reference to a case in which a pedestrian was alleged to have been knocked down at Dagenham by a motorist who hurried along, never stopping to inquire whether the poor fellow was hurt or not. Mr. Holland is anxious to bring the driver to justice, and all reasonable motorists will agree in the hope that such an escapade shall not be allowed to go unpunished. Such incidents as these are well calculated to bring discredit on the whole body of motorists, and it is a duty which individuals



The London Fire Brigade's 10 h.p. Wolseley arranged as First-Aid Fire Engine.

Falmouth—conveyed the party to Marconi's telegraphy station at Poldhu. The Prince and Princess, Lord and Lady Falmouth and Bishop Corfe were in the first car, and the second was occupied by Lady Mary Lygon, Lord Grenfell, the Hon. Derek Keppel, and Mr. F. B. Mildmay, M.P. Sir Arthur Bigge, Lord Falmouth's two sons, and Mr. Marconi motored direct to Poldhu in the latter's car, from Tregothnan.

New Royal Car.

ON Wednesday the Royal visitors motored to Lydford, the car having been taken over the chosen route on Tuesday. The road is a winding one, and there being so many stiff hills to encounter, it was deemed advisable to test its capability. Great excitement has prevailed throughout the west, coaches lining the route taken in many places, and the popularity of the motor-car in the west of England will be greatly enhanced by the preference shown by Royalty. On Thursday an electric brougham for town use was delivered to the Prince of Wales by the City and Suburban Electric Carriage Company. This carriage is a four-seated brougham, the body of which hangs specially low, and the batteries are skilfully concealed within the lines of

owe to the movement to assist in bringing such unfeeling persons to justice.

Motor Traffic and Main Roads.

THE ever-increasing motor-car traffic through Northamptonshire, which is on the main road from the Midlands to London, has led the Northamptonshire surveyor (Mr. C. S. Morris), to make special reference to the matter in his annual report. He says that "it certainly appears that ere long some additional provision will be required in the county to protect the local public more from the dangers of motor traffic. What form this should take—whether by widening the existing carriage-ways or providing a separate track for fast motor traffic, is a matter which will require further consideration. The majority of the main roads in this county (with the exception of a few village districts) would lend themselves admirably to either scheme, there being very wide grass margins on each side. The metalled portion of the roads ought to be gradually widened, and as there is a good supply of slag to be obtained at a reasonable price, the improvement could be cheaply effected." Such is the suggestion of a practical man; whether his Council will adopt the idea remains to be seen.

The Motor-Car Bill.

ON Tuesday the Government's Motor-Car Bill was reported to the House of Lords after a long and earnest discussion. The new points introduced into the measure included the limitation of the obligation of a local authority to grant licences to persons residing within the area of their jurisdiction; the annual renewal of licences; the right of appeal to quarter sessions on the part of those whose licences are suspended, and the reduction of the speed limit in towns and villages to ten miles an hour. Lord Balfour has also promised to adopt a provision rendering it necessary for motorists to stop and give names and addresses when their cars are the cause of accidents.

Certificates of Proficiency.

DESPITE the advocacy of Lord Rosebery and the Earl of Rosslyn, the Government were firm in opposing the granting of certificates of competency, and in this they had the support of the House. As Earl Russell pointed out, owners of costly cars are not likely to risk valuable property with incompetent men, while a certificate of proficiency in driving cars would be no safeguard to the public. Such certificates would be really worthless to the average man, and we do not share Lord Rosebery's alarm that "under the settled policy of the Government there might be next year 20,000 of these powerful machines in use on our roads without any guarantee of efficiency being provided except the competency of the driver to pay a shilling." It is the spirit of recklessness or carelessness that constitutes the real danger to be provided against.

Ten Miles through Towns.

THERE is much to be said in favour of uniformity throughout the country, and the decision of the President of the Local Government Board to institute a speed limit of ten miles an hour for cars passing through towns should do much to assuage the wrath of anti-motorists in some parts of the country. But if this is to become law it will be absolutely necessary that the local authorities shall be compelled to give adequate notification on the lines previously advocated in our columns as to the area of limited speed. Lord Balfour's assurance on this point was very satisfactory. He said, "A danger to be guarded against was the undue caprice of local authorities. They could not be allowed a roving charter to impose limits wherever they liked, but must be under the controlling authority of the Local Government Board. It was absolutely necessary that notices should be posted up wherever a special speed limit was prescribed. Between the two notices posted up, the driver was not to go beyond the special limit of speed."

Agriculturists want a Speed Limit.

AT the meeting of the Council of the Central Chamber of Agriculture on Tuesday a motion was brought forward that the present speed limit for motor-cars should not be altered. The Earl of Warwick, who presided, interposed with the comment that as he and other members of that council often drove their horses at fourteen and sixteen miles an hour, it would be foolish to carry that resolution. They would be much more likely to get what they wanted if they were reasonable. The meeting divided on the motion, and it was defeated by the chairman's casting vote. The original motion, asking for a generally-defined maximum speed limit, was the only resolution carried by the meeting.

The Views of County Councils.

ON Wednesday the executive council of the County Councils' Association met at Westminster, under the presidency of Sir John Hibbert, to discuss resolutions on the Motor-Car Bill. The meeting approved of the general principles of the Bill, and made the following suggestions:—That there should

be a clear discrimination between the different classes of offences and of the penalties inflicted. That if any person who is aware that an accident has been caused by him attempts to escape without giving his name and address, this should be made a separate offence under the Act. That officers and other persons employed by the different Government Departments should not be exempted from the operations of the Act. That the licence fee should be raised from 1s. to 5s. They further suggest that furious driving should be made an offence, and that a police-constable who received intimation by telephone or telegraph should be able to apprehend the offender without having seen the offence committed.

Prompt Opposition Necessary.

SEEING the influence of the County Councils' Association in Parliament, motorists must be prompt and active in educating M.P.'s to realise the hardships that some of the suggested provisions would cause. That a policeman should be allowed to apprehend a motorist "without having seen the offence committed" is likely to lead to serious abuse. Even now the taking of names and addresses by policemen at a distance from the place of the offence leads to mistakes, and serious injustice would often follow such an innovation in the law. We look to the motorists in the Commons to oppose such objectionable amendments to the Bill.

Affiliation with the A.C.G.B.I.

At a meeting of the Sheffield and District Automobile Club on Tuesday it was decided not to affiliate with the A.C.G.B.I., and that resolution will probably strengthen the movement for independence that is growing among the leaders of automobilism in the provinces. In fact, a conference of provincial clubs to consider the terms of affiliation with the London club has been suggested by the Lincolnshire association, and this will probably take place in September or October. London, Crewe, Sheffield, and Leeds have been suggested as convenient towns in which to hold the meeting, and Leeds or London will probably find most favour. We believe the Eastern Counties and the Manchester Clubs are in sympathy with the Lincolnshire Club in the matter, and that the Norfolk and Midland Clubs will attend the conference. The decision of the Sheffield body will strengthen the movement, from which only the Scottish, Yorkshire, and Nottingham Clubs are likely, from present indications, to hold aloof.

AMONG the wedding presents to the bride of Captain Norton, M.P., was an electric landau.

THE Prince and Princess of Wales have this week motored to Princetown and over Dartmoor.

WE learn that the police are likely to be active at Crawley on Sunday, a trap being in contemplation near the Sun Inn.

MR. W. J. MILLS, of the White Hart Hotel, Margate, has two motor garages and facilities for the repair of cars.

THE War Office has just ordered two 24-h.p. petrol lorries from Stirling's Motor Carriages, Limited, to carry loads of three tons.

THE motor 'bus service at Eastbourne has been so successful that its early extension has been decided upon by the local authorities.

THE handbook issued by the Wolseley Tool and Motor-Car Co., Ltd., is a most useful *vade mecum* to users of Wolseley cars. A useful section is that devoted to the cleaning of motor cars, some extracts from which were given in our "Useful Notes" last week.

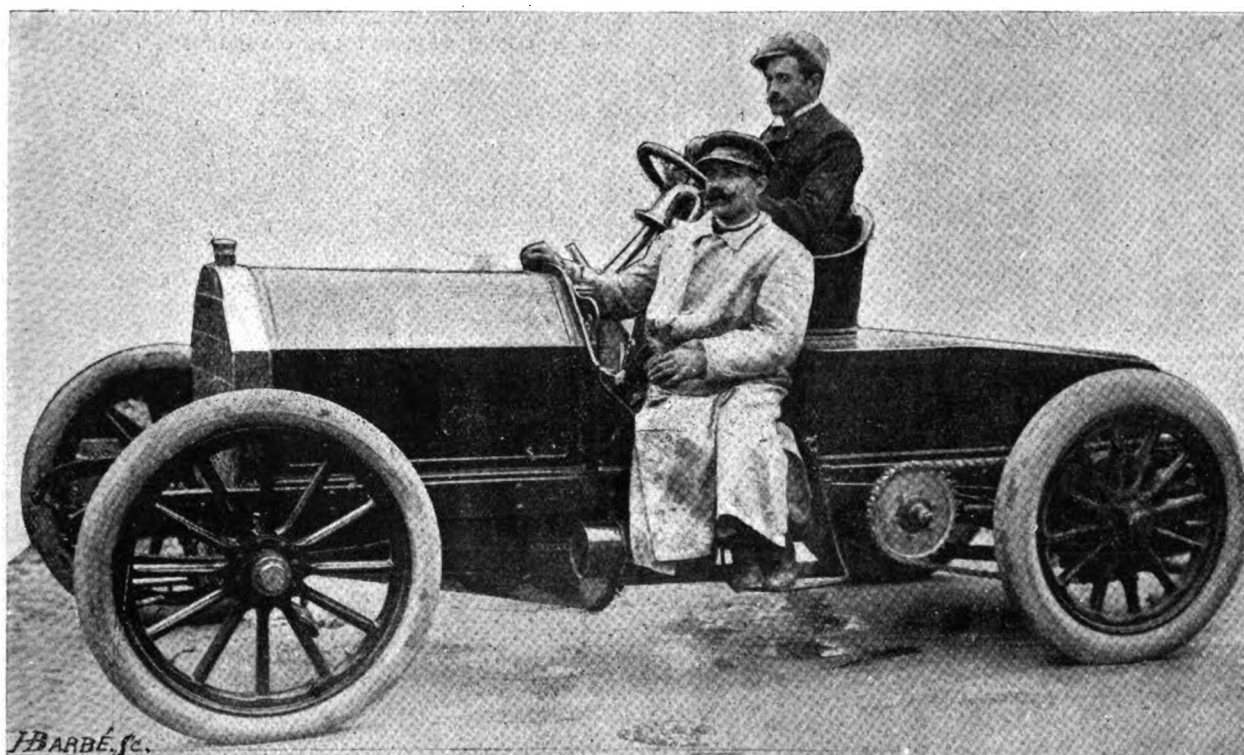
CORRESPONDENCE has been passing between the Dunlop and the Collier tyre companies with reference to the tyres used by the English competitors in the Gordon Bennett race. Owing to pressure on our space and the time the letters were received we are unable to publish them in the present issue.

REFLECTIONS ON THE IRISH AUTOMOBILE TOUR.

NOW that the last of the motorists who in gallant numbers invaded Ireland a month ago has returned from the Emerald Isle, some reflections on the event which so greatly stirred the country are opportune and necessary. On this side of the Irish Sea we shall shortly be concerned with the annual trials associated with automobilism, so that this early opportunity must be taken of recording some general impressions. The great race has already been fully discussed; our comments on the present occasion will be limited to the tour and trials which followed the race. In some respects these invite comparison with the 1,000 miles trial of 1900. Firstly, the distance traversed, according to the official programme, together with the runs from Dublin to the Gordon Bennett course and from Belfast or Newcastle to Castlewellan, and including a jaunt along the Prince of Wales' route at Killarney, was about the same. In 1900 the participat-

go—a dreary unevenness characterises the roads that is decidedly irksome in connection with travel. One result of the tour should be to arouse the local authorities to a sense of their duty in providing decent highways as well as tolerable bye-ways for the encouragement of motor travel in a land where the peasantry welcome strangers and recognise in motorists' substantial gains to the revenue of the country. Away in the south east of Ireland we learned how the jealousies of two local bodies had led to a length of road being neglected to such an extent that it is positively dangerous to passing traffic. Such a state of things would not be tolerated in England, and should be impossible in Ireland. Kerry, Kilkenny, Cork, have earned undesirable notoriety, and a contingent of motorists going from Dungarvan to Cork experienced more punctures in the course of that journey than anywhere else in Ireland. Now that the beauty spots of the island have obtained new publicity among the touring public it is a good time for the authorities of the counties we have named to put their roads in order.

A word must be said as to the culverts that rise almost imperceptibly on the road surfaces, and, should the car happen to



Baron de Caters on his 60-h.p. Mercedes.

[L'Automobile Illustrée.]

ing cars were mostly entered by manufacturers who naturally included their best vehicles in the trial; the Irish tour contained comparatively few "makers' vehicles, the large majority being privately-owned cars whose passengers were on pleasure bent. The way in which they behaved was a tribute to the advance made by the industry since the first organised trial in this country, and must have been a revelation to the public as to the reliability of the modern automobile. There were few break-downs, the minor mishaps were unimportant, and the small proportion of stoppages to miles travelled must have surprised the natives.

Of the purely Irish aspects of the tour the spoliation of tourists by some of the hotel-proprietors and the abominable character of the roads in county Cork are impressions that will not lightly fade from the minds of the motorists who suffered from the first and who had the misfortune to travel over the latter. In the neighbourhood of Dublin and along some of the stretches further north the surface of the roads was really good; but outside a radius of twenty miles from the port on the Liffey—the dullard stream that never enters into any scheme of spring cleaning that city may under-

be going at a fair pace, cause the passengers to be elevated from their seats and deposited again in an unceremonious manner. Such antiquated excrescences should be made the subject of study by the road authorities, and, just as their acuteness was minimised along the Gordon Bennett course, so it should be lessened elsewhere throughout Ireland.

Great are the difficulties of tourists in Ireland as to finding the way. In county Wicklow the main roads are well-defined, although we remember how the want of signposts led us into the grey town of Wicklow instead of the grander region of Glendalough. Again, after leaving Waterford, a run to Lismore was ended, for the day at least, at Dungarvan, no cheery signposts directing the attention of wayfarers to the correct road. And then, too, between Lismore and Cork, the road is little more than a widened pathway, a deceptive looking highway that causes tourists to wonder as to whether they are on the right track or not. The provision of signboards would not be an expensive matter for the localities concerned; it would greatly conduce to the convenience of the Irish people and add to the enjoyment of tour-

ing by strangers. According to one artist the motorist's only guide in travelling by road is by following the trail of mangled poultry as depicted on the next page.

Hotel keepers in some places have given motorists a very poor opinion of the hospitality of Ireland. Great improvement has undoubtedly been made during recent years in the character of the accommodation provided for visitors; but on occasions such as the recent automobile tour the proprietors of not a few were prone to regard motorists as geese to be plucked. Miles from anywhere and with no possibility of reaching a large town the same evening, several drivers have had occasion to denounce the exorbitant charges made by hotel people these



The Scene at the Shelbourne Hotel, Dublin.

last few weeks. We would reassure readers, however, on this point in normal times. Ordinarily motorists are welcomed with moderately-priced hospitality, and for the sake of Ireland it is to be hoped that the wanton way in which bills have been made out of late is not to be regarded as any indication of the usual condition of things. Still, the imposition has been of such a character that it could hardly be expected to go without a protest—and a warning to the Irish people never again to wreck their hopes of return guests by such extravagant notions of the pocket capacity of other people.



Ballyshannon House on the Day of the Race.

There is another matter in connection with automobilism that we are glad to see is exercising the minds of some Irish members. Several months ago we suggested to the Irish Department of Agriculture and Technical Instruction that it should consider the manufacture of alcohol from Irish grown products, and a reply was received which showed that the Department was sympathetic. Mr. Boland, M.P. for South Kerry, has revived the idea in a question to the Chief Secretary for Ireland, who has just informed the honourable member that the matter is still exercising the minds of the heads of the Department concerned. We would like to see the matter further advanced and

to hear that the Department was carrying out some practical experiments. In France alcohol is being employed in increasing volume in connection with motor-cars, and there is no doubt that if Ireland could produce alcohol for this purpose the makers of motor-cars in this country would quickly adapt their carburettors to meet the requirements of the spirit. This is an aspect of the subject that has not been greatly considered in Ireland during the tour, but now that prominent attention has been given it, we hope that the leading journalists and public men of the Emerald Isle will not allow it to be forgotten.

And now there is one other point with which we would conclude our impressions. The tour demonstrated—or rather reiterated—a lesson that has been frequently given of late, viz., that motor-cars can be driven at a high rate of speed along our highways without endangering the lives of the public. For three weeks motorists in Ireland enjoyed a practical abolition of the speed limit, and, with nearly a thousand cars rushing about on roads unfamiliar to most of their drivers, no accidents of anything more than the mildest character occurred. This must be regarded as a justification of the motor-car.

HILL-CLIMBING AT KERRY.

From the Phoenix Park, at Dublin, to the Killorglin Hills was a long way, and the close of the competition in connec-



View of the Hill between Killarney and Tralee, on which the Hill-climbing Contest took place.

tion with the Irish Automobile Fortnight, which took place on Wednesday of last week, was tame indeed. The course was on the Killarney-Tralee road, starting from Ballyfinane and finishing half-way up a steep ascent in the direction of the town of Tralee. Originally it had been intended to have allowed the cars a journey of 3,200 yards, as shown by the contour on another page taken from the "Club Journal," but, as at Castlewella, the distance was shortened, and the portion of road selected only measured 1,200 yards. There was a fair attendance of visitors, whose pleasure was marred by rain ere the event was concluded. Of the twenty-eight entrants for the contest for the cup given by the Kerry County Council only eight appeared at the start, and, as announced in last week's *Journal*, the cup was won by the Hon. C. S. Rolls, the times of the various competitors being as follows:—

Mr. J. W. Cross, 20-h.p. Humber; handicap, 25 secs.; time, 1 min. 33.5 secs.

Mr. George Iden, 20-h.p. M.C.C.; handicap, 32 secs.; time, 1 min. 42 secs.

Mr. J. M. Gorham, 22-h.p. Daimler; handicap, 35 secs.; time 2 mins. 8.5 secs.

P. G. Garrard Sir A. J. Macdonald's 22-h.p. Daimler; handicap, 45 secs.; time, 1 min. 40 secs.

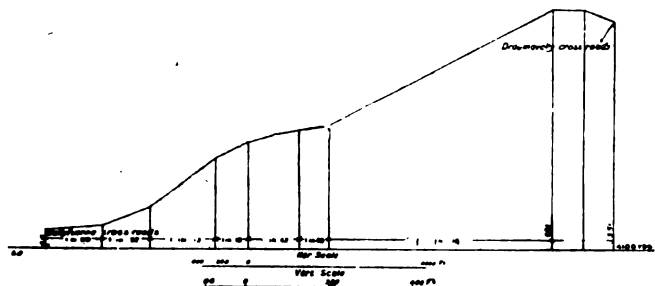
Mr. Wilson, Elswick ; handicap, 28 secs. ; time, 2 mins. 7 secs.
Mr. W. J. Warren, 6-h.p. Gardner-Serpollet ; handicap, 5 secs. ; time, 2 mins. 10 3-5 secs.
Mr. R. W. Leader, 16-h.p. Century ; handicap, 40 secs. ; time, 2 mins. 11 1-5 secs.
Mr. C. W. Hacking, 20 h.p. Panhard ; handicap, 30 secs. ; time, 2 mins. 29 1-5 secs.

The Hon. C. S. Rolls, 80-h.p. Mors ; scratch ; time, 1 min. 5 secs.

The first and second in the handicap, the Hon. C. S. Rolls and Mr. J. W. Cross, were to contest the final, but in the meantime Mr. Cross's machine was disabled, and he did not go over the course again. Therefore, Mr. Rolls and the third man in the handicap, P. G. Garrard (driving Sir A. J. Macdonald's

Rolls, Phillips, Sturmev, and Siddeley, but the attendance of motorists was not large.

RIGHT through the tour the behaviour of drivers of horses was noticeable ; the majority appeared to be nervous on the approach of a car. In almost every instance drivers jumped from their carts and held their horses' heads in a very hearty fashion. The danger of such proceedings was illustrated near Cashel on Saturday. Mr. H. Grubb, J.P., was going towards Cashel in his motor-car, and two boys named Dwyer were driving towards him with a young horse. On the car getting near, the horse became restive, and the driver got down and caught the horse by the head. Mr. Grubb at once stopped his car, and kept it stationary until the cart had gone some twelve yards. Then he set the machinery working, but immediately the horse became furious—so furious that he broke away, knocking down both lads, the cart going over one and injuring him internally. The other was also severely injured by his fall against the road. Mr. Grubb took one of the boys in his car to the County Infirmary at Cashel, the other, who was lying on the road, not being in a fit state for removal. On arriving in Cashel, Mr. Grubb called at the police barracks and reported the occurrence, and then brought out Acting-Sergeant Cawley and Dr. Russell. Both of the injured boys are progressing favourably.

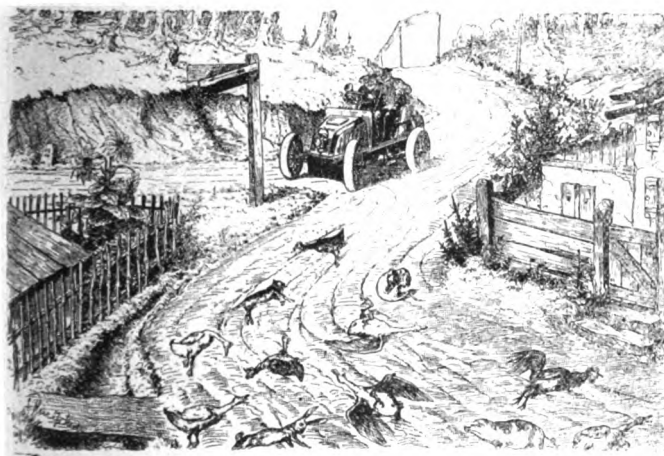


Profile Hill between Killarney and Tralee.

Daimler), were pitted against each other. The result was that Mr. Rolls carried off the Kerry Cup in fine style, covering the course on his Mors in 1 min. 1 4-5 secs., Garrard's time being 1 min. 28 secs.

IRISH GOSSIP.

It will be remembered that the nasty corners on the Gordon Bennett course were oiled to keep down the dust. From a continental contemporary, we learn that the work was done by a German company known as the Deutsche Oelbesprengungswerke, of Berlin, which received a telegram from Count Sierstorpff congratulating them on the success of their system.



What Might Have Been—but Wasn't.

(Das Schnauferl, Munich.)

MR. R. J. MECREDY and Mr. J. C. Percy must be congratulated on their work, not only in connection with the recent contests, but also in giving valuable local assistance to the Club officials before the event, notably in the selection of the course.

THERE is no doubt that the tour was too lengthy for the average man, and the way in which several who had braved the roads to Cork rushed to Killarney instead of waiting for the motor-boat races at Queenstown was significant. Among the officials in connection with the local races we noticed Messrs.



Mr. L. P. Mooers on his Peerless Car.

LAST week we announced the inauguration of the motor-car service by the Earl of Leitrim in the north-west of Ireland. The vehicles, which are built by Stirling's Motor Carriages, Ltd., are fitted with 24-h.p. motors and have a maximum speed of 12 miles an hour. They provide comfortable accommodation for fifteen passengers and luggage. The route served is thirty-eight miles in length. Starting from Strabane, the road is taken to Letterkenny, thence via Milford, Mulroy, and Carrygart to Rosapenna with its well appointed hotel. The first run was made by the Earl and Countess of Leitrim, the time occupied, including stoppages, being just over four hours. Two coaches are already in service, and a third is nearing completion at the works.

PERCY OWEN, one of the American team in the Gordon Bennett race, is at present paying his first visit to France. He, like Alexander Winton, puts down the poor showing of the Winton cars in the Cup race to the inferior petroleum spirit available. In the course of an interview Owen made some strong comments on the subject, remarking that "either the English do not know how to refine American petrol or my compatriots sell them inferior products."

THE gradient of the hill at Castlewella was 1 in 9, and in the trial the 10-h.p. Duryea car went over the course without changing gear.

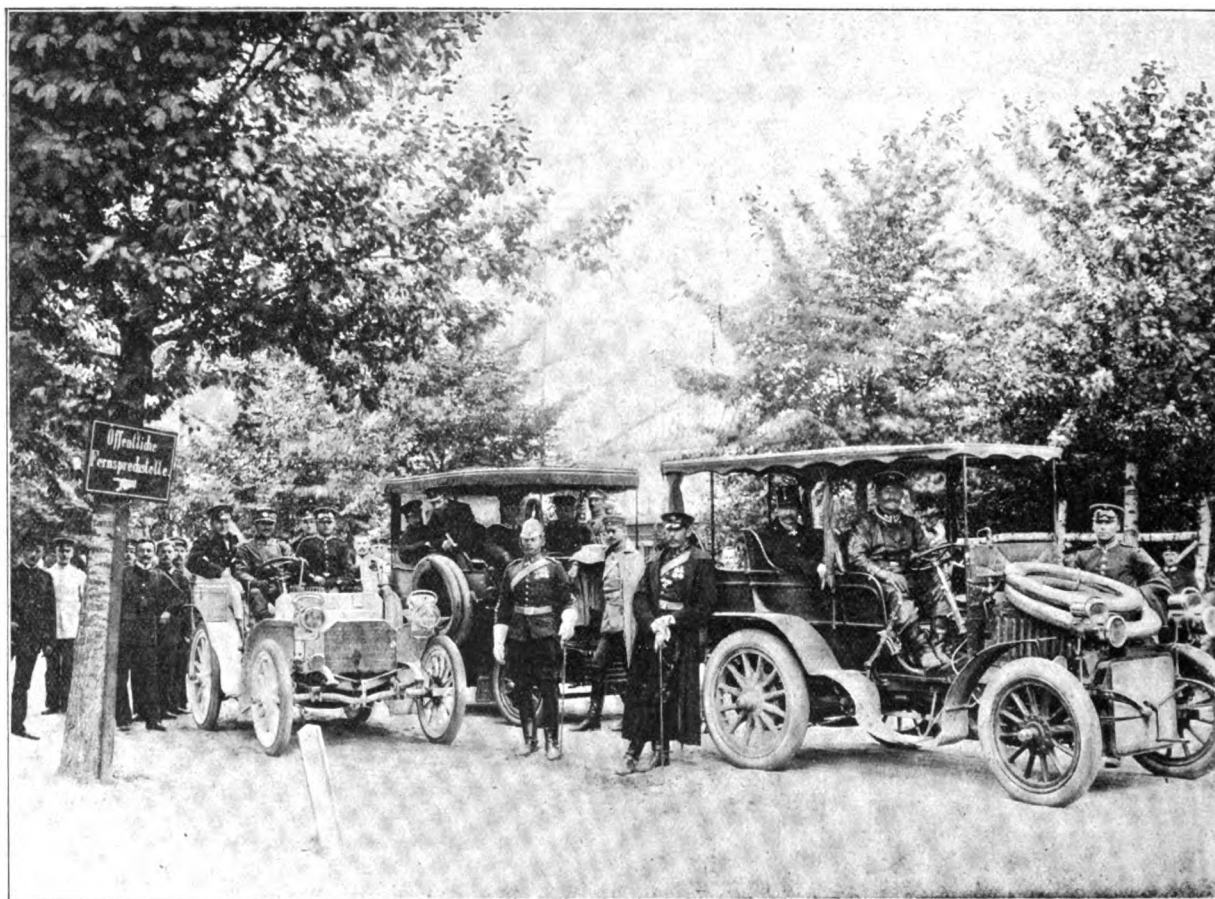
CONTINENTAL NOTES.

BY "AUTOMAN."

THE Ostend meeting has been quite a brilliant event, and has, in a considerable measure, compensated this watering place for the loss of attraction caused by the closing of the gaming tables. Tuesday, the 14th inst., was devoted to a reception, a banquet, a battle of flowers, and a competition for skill in driving. The reception and banquet were in honour of the Automobile Club du Nord, the organisers of a motor caravan from Lille to Ostend via Menin and Nieuport, over the new road which has been constructed on the initiative of the King of the Belgians. The French caravan was met by the Belgian contingent at Snaeskerke, and the combined squadron of seventy-two cars made their way to the Palace Hotel, where the reception

covered the whole course in the least time. Baron Piere de Crawhez won the contest. He did not make a single mistake, and covered the distance in the best time, thus obtaining the maximum of 110 marks. The day concluded with a battle of flowers on the marine promenade.

WEDNESDAY morning was taken up with a reception of the motoring visitors by King Leopold in his villa on the sea shore, and the presentation to the King of a gold medallion as a souvenir of the meeting. In the afternoon speed trials were held on the Snaeskerke road, the mile with a standing start falling to Rigolly on his Gobron-Brillié with four cylinders and eight pistons. His time was 58 4-5 seconds, whilst Baras on a light Darracq took the second place in the day's classification, and the first place in the light car class. A Darracq driven by Villemain won also the voiturette class. Stocks on his Napier took the fifth place in his



The Foreign Military Representatives in Motor Cars at the German Cavalry Manœuvres at Doberitz.

[Allgemeine Automobil Zeitung.]

and a banquet awaited them. There were upwards of 200 guests present, and, in the speeches which took place after lunch, unstinted praise was awarded to the King and also to the Belgian Minister of Public Works, on account of the magnificent road which has rendered Ostend accessible to French motorists.

AFTER the luncheon the driving contest took place at the Wellington Hippodrome before an audience of nearly 2,500 persons. The competition consisted of a drive between posts and over an earthen wall, with a momentary stop on the summit, and thence through innumerable barriers—fixed and moving—and underneath a ring which had to be seized and pulled in order to ring a bell, and over fog signals in the shape of balloons, exploded by the wheels passing over them, and finally through a maze on the reverse motion. Out of a possible one hundred, points were deducted for each mistake, and ten were added for the car that

class and the tenth place in the general classification, doing the mile in 1 minute 11 1-5 seconds.

THURSDAY was spent in a touring competition, and Friday was the great event—the flying kilometre on the Royal road. The weather was all that could be desired. At the spot chosen for the competition the road is very nearly level, but, if anything, slightly uphill. The success of the day fell easily to Rigolly, who, on his Gobron-Brillié, covered the kilometre in 26 1/4 seconds, beating the official record by 2 1/2 seconds. Baron Forrest's record of 26 3/4 seconds is not considered official, as the Phoenix Park kilometre was downhill. The second place also fell to a Gobron-Brillié in 28 3/4 seconds, followed by two Mors cars in 29 and 29 1/2 seconds respectively. Poege was fifth on a Mercedes in 31 1/2 seconds, and Stocks on his Napier was sixth in 31 3/4 seconds. Beconnais carried off the light car class on a Darracq in 30 1/4 seconds, and Baras (Darracq) took second place with 31 1/2 seconds.

THE Ostend meeting came to an end on Saturday with an exhibition of the cars; it was, however, marred by the rain, which came down in torrents.

THE Portuguese daily paper, "O Commercio do Porto," has a very special telegraph cable direct to Ireland, by a wireless system which has nothing in common with Marconi's. The invention is quite of another kind, as a persual of the following translation of one of its paragraphs will show:—

"London, July 3rd (by special telegram).

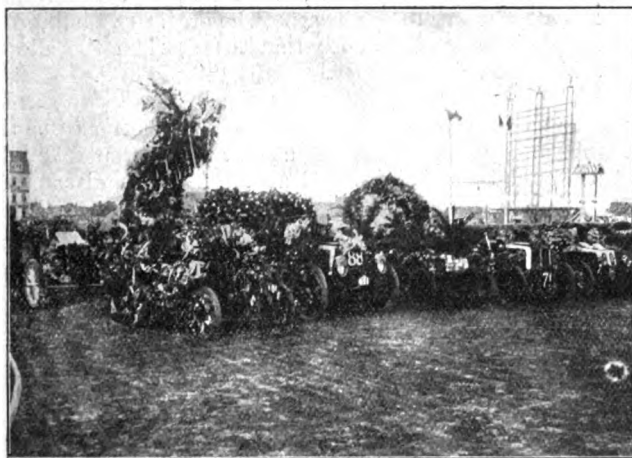
"In the Gordon Bennett automobile race, for a cup of honour of the same name, several accidents have taken place, due to the hostility of the Irish peasants, to the bad roads, and to the torrents of rain which fell during the race and rendered it dangerous. In this race 201 motors were entered or ran; half of them were North-American and the remainder English, French, Belgian and German. Great precautions had been taken lest the public should be injured. One automobile, driven by an American lady, daughter of a wealthy shipowner of Philadelphia, was upset and the young lady was bruised, but, fortunately, not seriously. It is thought that six drivers have been killed, and there are more than twenty injured. The winner is a German named Genatzi." As the French say, "Sans commentaire."

MAX RICHARD, one of the founders and a director of the

advised all automobilists to avoid the town and has given directions for passing round it. The campaign has been backed up by the public to such an extent that the tradespeople of the town are up in arms against the authorities, and have begun to harass the mayor with complaints that their trade is being injured. The result is that the mayor has been obliged to take steps to put a stop to this persecution, and a salutary lesson has been given to the police.

THE Berlin Automobile Club is organizing an excursion from Wannsee to Wittenberg and back (a total distance of about a hundred and fifty kilometres) to be undertaken in September next. This expedition is to be regarded in the light of a reliability trial rather than a race—the durability of the cars and their tyres on lengthy journeys being the main test and not the actual speed at which such journeys can be accomplished. Those answerable for this competition are convinced that it is only by such means that the public can hope to arrive at any trustworthy and independent opinion as to the merits of the different makers of cars.

SOME important cavalry manoeuvres were recently carried out at Doberitz, Germany, in the presence of the Kaiser and a number of English and Austrian military authorities. The illustration on page 408 is reproduced from a photograph of



Some of the Decorated Cars at the Flower Fete.



M. Salleron on his Mors Racer.

THE OSTEND AUTOMOBILE WEEK

firm of Georges Richard, of Paris, has been singled out by the French Government for the honour of the red ribbon, which is the badge by which the chevaliers of the Legion of Honour are known. M. Richard, who, with his brother Georges, who was injured in the Paris-Madrid race, has always been in the van of the automobile movement, is the President of the Chambre Syndicale de l'Automobile, and vice-president of the extra parliamentary commission.

THE idea of police traps has never taken root in France, for a very simple reason, the courts here have a simple way of treating automobile cases. There is no attempt at evidence, the fact of being summoned means a small fine and expenses. If there is any attempt at a defence the fine is increased; nothing but an alibi in case of a "flying summons" can save you. If, however, the police do not lay traps as in England, there are certain localities where some influential autophobe, either official or officious, stirs up the police to make a wholesale onslaught on unwary motorists. The most notorious place for this kind of persecution has been Saint-Germain, some 12 miles from Paris and on the main road to Rouen, Havre, Trouville, Dieppe, etc. Here hundreds of motorists have been summoned on every holiday, and in some cases most unjustly. For the last six weeks the "Auto" has taken up and carried on daily a boycotting campaign against St. Germain, and has

the foreign visitors and the cars which conveyed them to the practice ground. To the left is the Kaiser's Mercedes, in the centre a 12-h.p. Serpollet steam car, and to the right a 12-h.p. petrol car. In the centre of the picture are two of the British representatives, Lord Basing being to the right and Major Makins to the left, both being officers of the First Dragoons.

THE German Daimler Motoren Gesellschaft, of Cannstatt has notified the German Automobile Club of its willingness to build cars to defend the Gordon Bennett cup in 1904.

THE Automobile Club of Frankfort-am-Main is organising an automobile race meeting, to be held on the Oberforsthaus race-course on the 30th August. The course is one lap to the mile. The following programme has been prepared:—

Class I.—Motor-cycles. 3 laps. Open to all amateurs and professionals.

Class II.—(a) Light cars up to 10-h.p. 5 laps. Open to amateur drivers. Cars must be steered by respective owners. (b) Light cars up to 10-h.p. 5 laps. Open to professional drivers. Club handicap. Open to members of the Frankfort Motor Club only. 5 laps.

Class III.—(a) Cars up to 16-h.p. 8 laps. Open to amateurs. Driver must be owner of car. (b) Cars up to 16-h.p. 8 laps. Open to professionals.

Class IV.—Large cars up to 60-h.p. 10 laps. Open to amateurs. Drivers must be owners. (b) Large cars up to 60-h.p. 10 laps. Open to professionals.

THE HORSE-POWER OF PETROL MOTORS.

PERHAPS no subject in connection with petrol motors is in a state of greater chaos and confusion than that of their horse-power. The question of the power developed by internal combustion motors has always been a somewhat vexed one from the theoretical point of view, lacking that elegant correspondence with theory which the steam-engine affords; but as the practical application of the brake test offers no more difficulty in the one case than in the other, there is little excuse for the very wide discrepancies which attract our attention on perusing the various makers' catalogues. The adoption of some form of standard, if only a conventional and empirical one, which would enable the specifications of cars to be more easily comparable *inter se*, is certainly much to be desired, as may be realised from the accompanying table, showing the dimensions of a few well-known makes.

Car.	Nominal h.p.	Bore, mm.	Stroke, mm.	Number of Cylinders.	Total Capacity of Cylinders c. cm.	Revolutions (according to maker).	Capacity per nominal h.p.	Piston Displacement in litres per minute per h.p.
1.	2.	3.	4.	5.	6.	7.	8.	9.
Clement ..	9	85	120	2	1,360	750	151	113
Clement ..	12	75	120	4	2,120	750	177	133
Cottareau ..	10	90	115	2	1,464	1,200	146	175
Déchamps ..	9	100	130	2	2,042	—	227	—
De Dion ..	8	100	120	1	942	1,300	100	138
De Dion ..	12	100	120	2	1,884	1,200	157	188
Decauville ..	10	110	110	2	2,080	1,000	208	208
Gladiator ..	10	105	130	2	2,244	950	224	197
Gladiator ..	12	75	120	4	2,120	950	177	195
Panhard ..	16	100	130	4	4,084	750	255	181
Panhard ..	7	90	130	2	1,654	750	236	176
Panhard ..	15	90	134	4	3,404	750	227	170
Pascal ..	22	120	130	4	5,880	—	267	—
Renault ..	14	90	100	4	2,540	1,500	181	271
G. Richard ..	10	100	100	2	1,564	1,000	156	156
G. Richard ..	12	104	100	2	1,700	1,000	142	142
Rochet-Schneider ..	18	100	150	4	4,700	—	269	—
Ariel ..	10	84	101	2	1,104	—	110	—
Ariel ..	16	84	101	4	2,208	—	138	—
Maudslay ..	20	127	127	3	4,740	—	237	—
Rex ..	10	115	115	1	1,190	1,200	119	143
Star ..	10	105	140	2	2,420	—	242	—

Average of Column 9, 173 litres per minute, per h.p.

One obvious cause of this want of uniformity is the fact that the modern light car has evolved—more or less simultaneously—from two different sources. The heavy car of a few years back was usually built with a slow-speed engine, and its h.p. catalogued on that basis, though capable of a considerably higher output if run at a higher speed. Then, as weights were cut down and powers went up, one type of light car developed from this source, but the tradition of cataloguing the engine under its maximum power remained. On the other hand, the evolution of the high-speed engine from its beginnings as a cycle motor was accompanied by the practice of listing its h.p. according to its maximum performance on the brake test, a performance not often reached in actual work; and the other type of light car, which owes its origin more or less directly to this source, often continues to be an example of the same practice.

Thus we have known much disappointment occasioned by changing from a low-powered two-cylindrical voiturette to a light single-cylinder car of nearly double the nominal h.p., though it must not be forgotten that there are other factors of equal importance regarding which the catalogues are even more contradictory, notably that of weight; the latter, however, can—

and should—be verified by even the most unmechanical purchaser, and the adoption of this course would soon render misrepresentation on that point useless.

It is otherwise with h.p., and the maker may plead with some plausibility that in the absence of any standard agreed upon he is, on the one hand, taking the only natural standard in quoting the maximum output of his engine, or that, on the other, he prefers to quote a power well within that it is capable of under adverse conditions, and that it is better for him that his car should, say, be called a good 10-h.p. than a poor 12-h.p. Moreover, in view of a certain bias in favour of low-speed engines as such that prevails with the public (on the not entirely justified fear of abnormal wear as the accompaniment of high speed), some engines are listed at a speed at which they could hardly give more than two-thirds of their nominal h.p. The result may be that they are run at nearly double this speed, with satisfaction to the driver, who thinks all the time he has a "moderate speed" engine.

It is therefore highly to be desired that the present confusion and want of system in this matter should be reduced to order, even if this can only be done by an arbitrary standard, and the subject is deserving of consideration by our automobile authorities. Obviously the arbitrary standard could be dispensed with by listing every engine at its maximum power by workshop test; this, however, would probably be less satisfactory to purchasers (who are in the habit of expecting a margin of power above that listed) than the adoption of an arbitrary standard somewhat after this manner. Let the maximum brake h.p. be taken; then let the b.h.p. at two-thirds or three-quarters of that speed be measured, this latter to be the nominal h.p. and speed. Thus the usual margin would be allowed, but it would be a definite and accepted one, and some uniformity in the classification of engines would be attained. It is needless to add that the establishment of such a system must depend on the initiative of the makers themselves.

The foregoing table, which, though incomplete, gives the dimensions, listed speeds, and h.p. of twenty-two types of cars well illustrates the present want of system. The listed speed was only available in fifteen cases, and the last column, which gives the piston displacement per minute per h.p., thus taking both size and speed of engine into account (and which, if halved, should approximately represent the volume of mixture burnt per minute), sufficiently indicates that this must be inaccurately listed in some of the cases given in the table. A formula proposed by M. Hospitalier, some year or two back, amounted approximately to the statement that 1-h.p. should be calculated for every 200 litres per minute of piston displacement; and this was then thought to be too favourable, and 250 litres suggested instead. Efficiency has undoubtedly improved since then, and the average of column 9 shows that 1-h.p. is claimed for 173 litres, most of the figures lying between 140 and 190. These variations, even omitting the four or five extreme ones, which are probably due to loose and incorrect speed assertions, are quite enough to show the necessity for introducing more system into this important subject.

TO-DAY (Saturday) the Kent Automobile Club will hold a picnic at Hothfield Common.

THE Southport speed trials, which were to have been held on the 24th and 25th of the present month, have been postponed until later in the year.

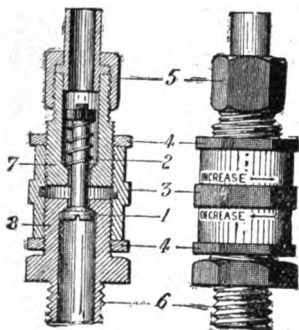
COMPLAINT reaches us that the proprietor of an hotel near Reigate has refused to accommodate a motor-car, or find room for motorists who were stranded in the locality recently.

THE Krieger Co., of Paris, is reported to be about to bring out a combination petrol-electric vehicle, the motive power being supplied by a 20-h.p. four-cylinder Richard-Brazier motor.

TO-DAY'S (Saturday) run of the Wolverhampton and District Automobile Club is to Stafford.

MOTOR-CYCLING NEWS.

LUBRICATION is one of the most important items in the successful working of an air-cooled motor. To avoid any failure in this respect, the Ormonde Motor Company claim to have surmounted this serious difficulty in their motor-bicycle in combining with an improved automatic adjustable lubricator an auxiliary reservoir in the form of a pump fixed upon the front part of the top tube of frame, in full view of the rider. This pump is fitted with a two-way cock. When turned to one side it communicates with the main oil reservoir, and to the other side with the engine, but when placed centrally it shuts off both engine and reservoir. This pump is not filled by the usual method of suction, but depends upon air pressure in the oil reservoir, which is obtained by giving the pump two or three strokes, thereby creating sufficient pressure to force the oil up. The oil is then fed to the crank chamber from this auxiliary reservoir or pump, through the automatic lubricator illustrated herewith. This latter ensures a gradual but constant supply of oil to the engine. The device, which is screwed into the crank case, depends for its feed upon the suction caused through the vacuum created in the crank-case by each upward stroke of the piston, and may be briefly described as follows:—1 is a valve, with its seating formed in the top part of 8; 2 is the spring holding the valve up (closed) to its seating. The bottom portion of 7 forms



the seating for the spring, and also acts as a guide to the valve stem; the top part carries the union, 5, to connect up with the auxiliary reservoir or pump; 3 is the connecting collar uniting the parts 7 and 8; this collar, or union, has a left-hand thread in the top half and a right-hand thread in the bottom half, so that by means of the hexagon in the centre this can be turned to expand or contract the two parts 7 and 8, thereby putting more or less tension upon the spring of the valve; the lock nuts, 4, secure the part 3 and form oil-tight joints, the part 6 being screwed into a shoulder to receive it in a convenient position upon side of crank-case. The feed can thus be easily regulated to the exact requirements of the engine without soiling the fingers.

HEREWITH we illustrate a new hook and eye fastening for twisted driving belts which has been introduced by Mr. Geo. H. Allison, of Station Road, East Boldon, R.S.O. It consists of a steel hook and eye which screw into two steel caps. The latter are

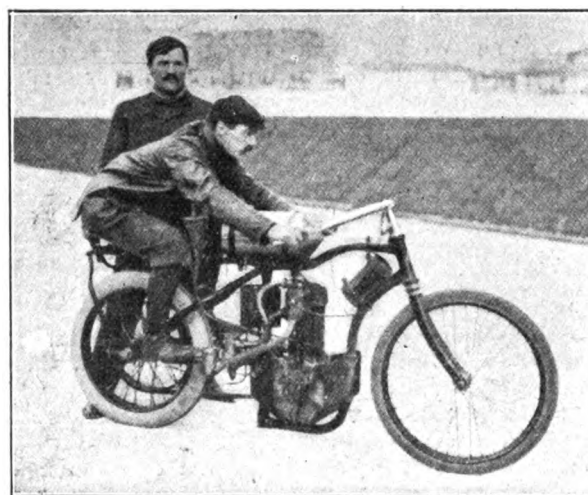


screwed on to the ends of the belt, and the screwing of the hook and eye into the caps has the effect of forcing the leather into the openings in the caps, and making a perfectly secure fastening. Should the belt stretch, it is an easy matter to unfasten the connection and give the belt a twist or two to take up the slack.

A RELIABILITY run from New York to Worcester, Mass., and back, was held on the 3rd, 4th, and 5th inst. by the New York Motor Cycle Club and the Metropole Cycling Club. Four-

teen of the thirty-two motor-cycle riders who started reached the last control inside the time limit, while two others arrived later in the evening. The feature of the run was the close race for the gold medal awarded to the contestant who finished with a perfect score and also adhered most closely to the fast schedule of fifteen miles an hour for each day's run. The weeding out was practically all done on the first day, thirteen of the starters failing to reach the night control in Springfield. On the second day only one rider dropped out; while on the last day's run a burst tyre and a broken frame caused two others to retire. The winner was George M. Hendee, of the Hendee Manufacturing Company, Springfield, Mass., who rode his 1½-h.p. Indian throughout the run without any trouble except a punctured tyre on the first stage of the trial on the first day. The machines of the other thirteen riders who finished consisted of a 1½-h.p. Indian, four 2½-h.p. Auto Bi's, a 2½-h.p. Merkel, a 2½-h.p. Marsh, four 2½-h.p. Columbias, and two 2½-h.p. Wagners. The vicissitudes of the successful riders were many and varied, tyre troubles delaying them, however, the most. The contest was a test of the rider as well as the machine, for though most of the 396 miles was run over very good macadam roads, there were many strips of road that were deep in sand, and others that were very rough and stony.

MUCH interest was centred on the race meeting at the Canning Town track on Saturday last by reason of the appearance of two French racing motor-cyclists. If, however, they proved somewhat disappointing, it was otherwise as regards the English riders, who succeeded in establishing some new records. H. Martin, on an "Excelsior," made new records from one to five miles. His one mile time was 1 min. 14 secs. against Chase's 1 min. 15 2-5th secs., and five miles were covered in 5 mins. 39 secs., or ten seconds inside record. Cissac, one of the French



Marius Thé, the French racer, on his 14-h.p. Motor Bicycle.

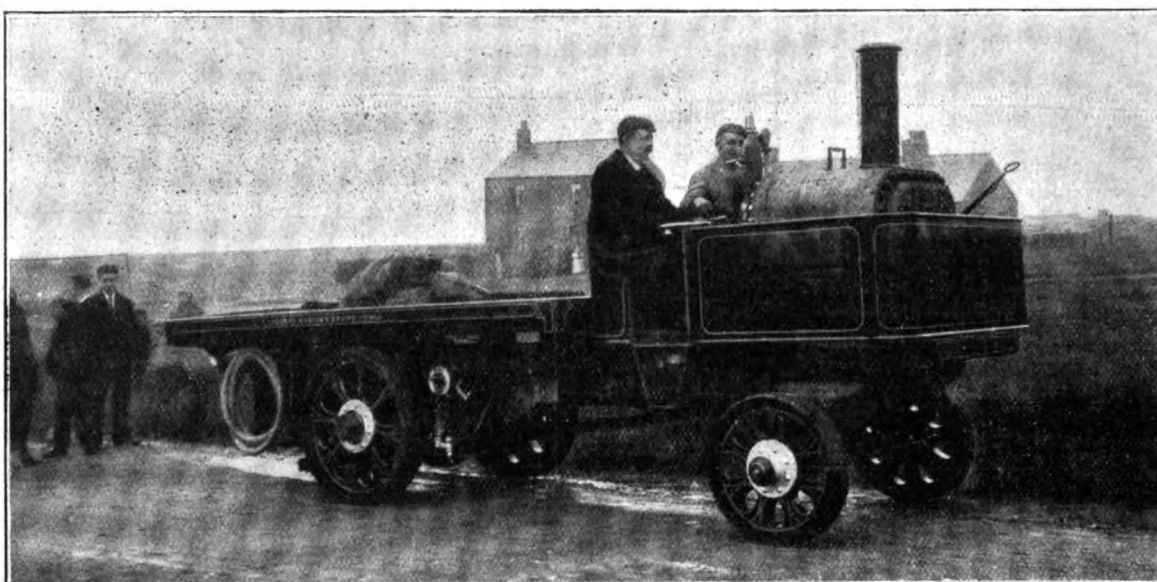
[La Locomotion.]

riders, attempted the ten miles record, but only did 11 mins. 38 secs., which is 6 3-5th secs. outside Crundall's time. A five miles handicap was won by H. Martin in 6 mins. 2 4-5th secs., Crundall being second and T. H. Tessier third. Marius Thé was unable to compete owing to his racer being unsuitable for the track.

COPENHAGEN motorists are up in arms against a regulation which has just been issued forbidding them to use their cars along the Standweigen, the favourite promenade in the Danish capital.

THE Perth District Road Committee of the Perthshire County Council would raise the speed limit for motor-cars to 20 to 25 miles an hour on a 20ft. wide road, "and certainly not more than 12 miles on roads from 12 to 20 ft. wide."

A New Type of Steam Wagon.



THE Londonderry Company have for the past thirty years built their own locomotives at the Seaham Harbour Engine Works, situated at Seaham Harbour, near Sunderland. Being thoroughly conversant with steam traction and quick to grasp the future of steam road traction, they turned their new works into a manufactory for this useful class of mechanism. Mr. S. J. Ditchfield and Mr. V. M. Corbett, chief agent to Lord Londonderry, added the necessary plant to the works and operations were commenced on 4-ton wagons to the design of the works manager, Mr. J. Donovan, and Mr. E. G. Allison, chief draughtsman. On the 11th inst. one of the first wagons was subjected to tests which conclusively proved that their 4-ton wagon is eminently qualified to carry its load economically under even extraordinary conditions. In the presence of a company of gentlemen interested in steam vehicles the wagon illustrated herewith was weighed and found to tare 2 tons 18 cwt. 3 qrs., and on being loaded was subjected to the following tests:—One hour full steaming on various gradients on ordinary country roads; a speed of seven miles was averaged throughout this run. The wagon then carried its load with ease up an incline of one in seven. The same incline was then run down at a speed of three miles per hour, and it was found that on steam being shut off and the brake applied the wagon could be stopped in its own length. A torsional test was then carried out by running the wagon with one main road wheel along railway sleepers laid along the roadway. Finally a test which can only be described as a general destruction test was negotiated. Six ordinary railway sleepers were laid at intervals across the roadway, and on the slow speed gear the wagon ran over the same without sustaining the slightest damage.

North country roads being proverbially hilly, the object of the designers has been to so construct the wagon that it might safely withstand the strains to which a vehicle is at times unexpectedly subject on country roads, and the tests successfully carried through prove the soundness of their design. Steam was easily maintained in the boiler, which is of the water-tube type, and a peculiarity of which is that the removal of the outer shell can be effected when necessary to clean out the whole of the water space of the boiler. The ash pan with bars can be

raised or lowered at the will of the driver, and at the test the fire was cleaned and relighted in the short space of $3\frac{1}{2}$ minutes. The severe strains during the tests were counteracted by the special arrangement of main axle and driving gear. The whole weight of the load and the driving gear connection is carried by axle boxes in which the main driving shaft revolves. These axle boxes are carried on spiral springs, and to ensure the teeth of the driving cogs meshing at all times, axle boxes are steadied in the cast steel side frames in a sliding surface cut at a radius struck from the centre of the second motion shaft. Perfect freedom of the driving axle is assured, and no amount of compression on the carrying springs can affect the perfect meshing of the teeth of the cog driving connections. The engine is of the two-cylinder high-pressure type, and the silencing box, through which the exhaust steam passes, is utilised as a feed-water heater, the water on the delivery side of the feed pump being raised to a temperature of upwards of 200 degrees before being delivered into the boiler. There are no eccentrics or reversing links to the engine, steam being admitted to the cylinders by a rotary valve driven direct from the crank shaft of the engine. The manipulating handles and steering gear are conveniently arranged so that the driver can carry out the general working of the wagon, including stoking, without moving from his seat.

The general design of the wagon has been provisionally patented, and it has already been found necessary to re-arrange and extend the present Seaham Harbour Engine Works in order to cope with the demand.

From the Touring Club Italiano, of Milan, comes a copy of the new "Guida Della Campania," recently issued. This Guide is on the same plan as those already published by the T.C.I., which are all intended as an up-to-date description of the highways of Italy, detailed in provinces. We feel sure that the work will prove very useful to those tourists who desire to visit this part of South Italy, the merits of which, from the point of view of historical interest and natural beauties, are not yet fully recognised.

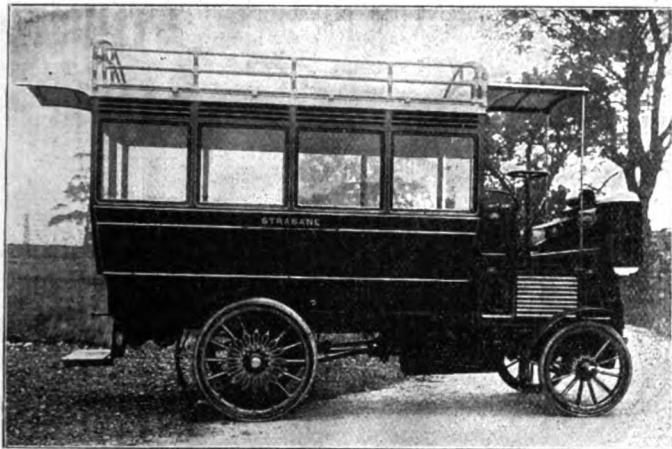
HERE AND THERE.

AN automobile club has just been formed at Spa, Belgium.

ONE of the latest purchasers of "Lanchester" cars is the Marquis of Anglesey, who is at present touring in his car.

A PETROL motor fire engine has just been brought into use by the fire brigade at Budapest.

BARON BARRETO, of Ryburgh, Norfolk, has just received delivery of a new 10-h.p. Wolseley.



The Stirling Motor Bus for Irish Service (see page 407).

WHEN in Bournemouth, the other day we noticed that a motor-garage had been established in connection with the Grand Hotel.

THE IPSWICH MOTOR COMPANY have opened a motor-car show room and workshop in Princes Street, Ipswich.

A NEW weekly automobile paper is about to see the light in Paris. It is to be known as "l'Automobile," and will be edited by M. Gaston Sencier.

THE members of the Lincolnshire Automobile Club held a "meet" at Thonock Park, Gainsborough, the seat of Sir Hickman Bacon, Bart., on Thursday of last week.

A MOTOR-CAR service has recently been started in place of the old diligence between Cadiz and Algeciras, Spain. The vehicle leaves Cadiz on alternate days, and accomplishes the journey in twelve hours.

RECENT motor-car mishaps include one at Westerham, caused by the failure of the brake to act when ascending the steep hill, and another near the Cat and Fiddle, five miles from Buxton, the result of a burst tyre.

THE members of the Royal Commission on Locomotion and Transport in London have accepted an invitation from the Automobile Club to view some of the main road outlets from London on motor-cars provided by members of the Club on Thursday, the 30th inst.

THE Civil Service Motor and Cycle Agency, Limited, established fourteen years ago as the Civil Service Cycle Agency, have found the business in motor-cycles developing so rapidly that they have opened a garage at Featherstone Buildings, E.C., where the motor-cycle part of the business will in future be handled and motor-cars will also be sold.

ON another page we give an illustration of the special 10-h.p. car recently supplied by the Wolseley Company to the London Fire Brigade. It is to be used as a "first aid" fire engine, to be despatched to a fire immediately on a call being received. It is equipped with ladders, and carrying its own supply of water in a tank, can commence the extinction of the fire before the larger engines can connect up and begin pumping.

OWING to the keen watch now kept by the police on motor-cars in Hyde Park that great London space has seen comparatively few motor-cars of late.

THE Bordeaux Automobile Club is organising a twelve days' tour, starting on August 8. Cantal, Dauphine, Savoy, Geneva, Grenoble, Lyons and Clermont will be visited.

UPWARDS of six thousand licenses have been issued up-to-date by the Automobile License Bureau at Albany, U.S.A. Applications continue to pour in at the rate of 125 a day.

AMONG the local councils that have passed resolutions approving of the Pocklington Rural District Council's protest against the abolition of the speed limit are those of Selby, St. Germans, and Epsom. The Leyburn Council has ordered the letter from the Pocklington Council to lie on the table.

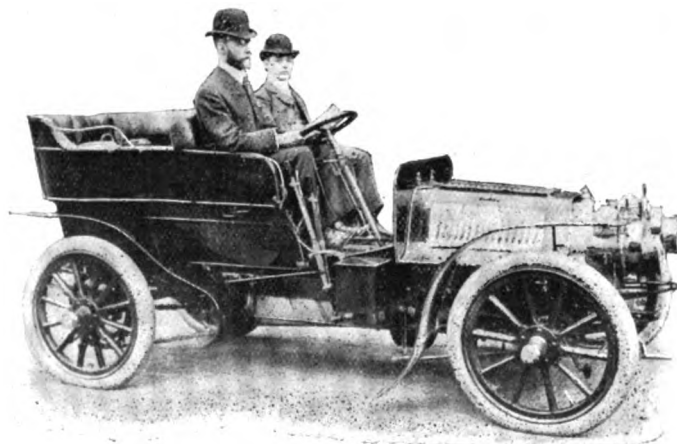
MOTOR-CARS will be included among the exhibits at the Royal Lancashire Agricultural Show, to be held in Manchester from the 30th inst. to August 3rd. Messrs. Joseph Cockshoot and Company, Limited, have arranged for a display of Stanley steam cars and Northern, Velox, Rex, and Clement petrol cars.

THE new automobile department which is about to be established by the Case School of Applied Science at Cleveland, U.S.A., will be well equipped. The Winton Motor Carriage Co. and the Baker Motor Vehicle Co. have each promised to give the school the complete machinery part of one of their automobiles for study.

THE value of the automobile for carrying mails over rural routes was demonstrated by a practical test at Union City, Ind., U.S.A., recently. In two hours the vehicle covered a distance of 28 miles and made 94 stops. With the ordinary horse-drawn vehicle it requires about seven horses to perform the same work.

AT the annual meet of the Columbus Automobile Club at Columbus, Ohio, U.S.A., on July 4th, Barney Oldfield broke all world's records on a circular track from one to ten miles. The time as announced for each mile was 56-2-5 sec., 59sec., 59 3-5 sec., 1 min., 59 3-5 sec., 59 3 5 sec., 1min. 1 sec., 1 min., 59 3 5 sec., 1 min. ; time for ten miles, 9 min. 54 4-5 sec.

MR. HOWARD BEADLE and Mr. E. T. Giles, who are shown on a M.M.C. car in the accompanying photograph, are identified with the Grosvenor Engineering Works, of Danvers Street, Paul-ton Square, Chelsea. The works are well adapted for the repair of motor-cars, being equipped with modern plant, an inspection pit, and manned with a staff of skilled mechanics who have



Messrs. Beadle and Giles on a 20-h.p. M.M.C. Car.

had much experience in automobile work. The firm also undertakes the carrying out of the ideas of inventors, and at the time of our visit a new gear was in course of preparation. To this we hope to return in a later issue; meanwhile we content ourselves with assuring our readers as to the extent and excellence of the Grosvenor Engineering Works.

It is reported that a syndicate has been formed in Paris to build White steam cars in France.

THE Southampton County Motor Club will hold a run to Wickham on the 29th inst.

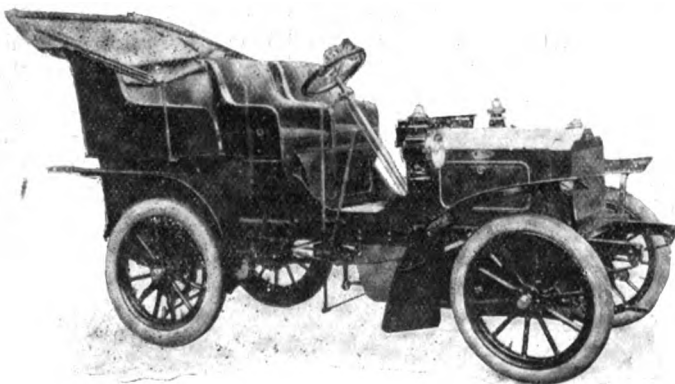
THE chairman of the Brentford Bench has asked the local police inspector to be as civil as possible to motorists.

REPRODUCED herewith are two photographs of the latest type of 10-h.p. Argyll car fitted with combination honeycomb



[The 10-h.p. Argyll Car with Folding Canopy.

radiator and water tank. The vehicle is fitted with a folding hood which can be used as a canopy as above, as an ordinary hood, or as a dust-screen, the latter use being depicted below.



The 10-h.p. Argyll with Hood folded to act as Dust Screen.

THE Automobile Club of Berkshire, Mass., U.S.A., has issued a mandatory order warning its members against excessive speed on the public roads within the city limits of Pittsfield. A violation of the order will be punished by expulsion from the club.

THE American Association of Licensed Automobile Manufacturers is making arrangements to organise a technical convention of automobile designers and builders, to be held at Niagara Falls in the autumn.

MESSRS. JOHN CHILD MEREDITH, LTD., of Birmingham, inform us that they have now made arrangements to sell motor spirit in small quantities, their prices for smaller quantities than one gallon being 4d. per quart.

A BRADFORD motoring party were recently returning from the Lake District, when they ran over a hedgehog near Kirkby Lonsdale. Most of the animal's spikes are reported to have stuck in the tyre, which, as it was worn to its last canvas, was penetrated through the air-tube in several places. As to what actually happened to the hedgehog there is no record.

A 22-h.p. station omnibus is being built by the Daimler Company for the Duke of Bedford.

A MOTOR garage has been established at Rochester by Messrs. G. Senior and Co.

MESSRS. SPIERS AND POND have established a department for the hire of motor vehicles by the day or week. They are also giving instruction in driving.

THE London General Automobile Company, Limited, has been registered with a capital of £10,750 in 15,000 deferred shares of 1s. each and 10,000 preference shares of £1 each.

THE value of the exports of motor-cars and parts from the United States during May last only amounted to £28,854, as compared with £29,729 in the corresponding month of last year.

A NEW price list has been issued by Messrs. Alfred Dunhill, Ltd., whose motorities are well known to motorists throughout the British Isles. It extends to about 130 pages and embraces "everything but the motor."

MESSRS. EVERETT BROTHERS, LIMITED, has been registered with a capital of £500 to acquire the business carried on by Mr. E. Everett, as Everett Brothers, and to carry on the business of motor-car engineers, etc.

THE motor-cycle business of Mr. J. Van Hooydonk has been transferred to Phoenix Motors, Ltd., with himself and Mr. A. F. Ilsley as joint managing directors. Large works have been acquired at Blundell Street, Caledonian Road, N., to cope with the growing business.

THE Great Eastern Railway Company's Handbook, "Holiday in Eastern Counties," is issued in convenient pocket size, and prominence has been given to some less known districts in East Anglia. The illustrations have been made a special feature and motorists will find the country full of interesting and good roads.

ONE of the latest useful accessories brought out by Messrs. G. T. Riches and Company is a porcelain complete with the wire soldered in for repairing the latest pattern of



De Dion sparking plugs. The porcelain, with central wire, which is illustrated herewith, is supplied at a very low figure and should prove useful to those motorists who have a stock of damaged plugs.

THERE are now over 700 motor-cars in use in Pittsburg, U.S.A., of which 150 have been purchased this year. Physicians especially have adopted the motor vehicle, and it is estimated that fully three-fifths of the doctors in the city who formerly drove carriages are now using motor-cars.

M. A. DININ, of Paris, has established a depot at 9, Little James Street, London, W.C., under the management of Mr. Andre A. Godin, for the sale of the well-known Dinin ignition and traction accumulators. M. Godin, who is also agent for the Ducellier acetylene and paraffin lamps, has sent us a copy of a new catalogue he has just issued of these largely used light-givers.

FROM Mr. Theo Masui, of 1, Hanover Court, W., who has been appointed agent general for the Germain motor-cars in this country come two well-got-up lists—one devoted to the pleasure cars and one to heavy motor vehicles. The pleasure vehicles comprise five sizes, ranging from 7½-h.p. to 40-h.p., while the heavy cars range from a 7½ h.p. van to carry one ton, to a 20-h.p. lorry built for loads up to 6 tons.

IN regard to recent announcements that persons touring in Canada in motor-cars would be subject to a customs duty on their vehicles, the Canadian Department of Customs has announced that automobiles (not new) in use by tourists going temporarily into Canada and not domiciled in Canada may be passed upon deposit of an amount equal to the duty, subject to refund upon exportation within the time prescribed by the collector, not exceeding six months from date of arrival.

SOUTH AFRICAN NEWS.

[FROM OUR OWN CORRESPONDENT.]

CAPE TOWN, June 20th.

MESSRS. S. H. Adams and R. W. Early, representatives of the Rudge-Whitworth Cycle Co., Durban, have just performed a record run from Durban to Maritzburg on a Lanchester car. Starting from the Town Hall, Durban, at five minutes past eleven on Saturday morning, they reached Westville Hotel at 11.40, and from there completed the run to Pinetown in fifteen minutes, reaching Pinetown at 11.55. Killins was passed at 12.28, and, after a very rough climb past Botha's Hill, Inchanga was reached at 1.30, where the motorists made a brief halt for refreshments. Bent on establishing a record, however, the travellers soon resumed their journey, reaching Umlaas Road at 2.50. After passing Umlaas the run improved, the roads being in better condition than before. The run into Maritzburg was made in forty-seven minutes, the whole journey, therefore, occupying four hours thirty-two minutes.

A MOTOR 'BUS has started running between Cape-road terminus (Port Elizabeth) and Hunter's Retreat, a distance of eight miles. The vehicle, which is of 12-h.p., has seating capacity for sixteen persons, and is arranged to carry luggage up to 900 lb.

MR. D. P. GRAAF is equipping a very complete motor stable at the back of his house, "Bordeaux," at Sea Point, replete with every appliance which a mechanician could possibly require. Two pits are sunk into the floor and overhead blocks and tackle are fitted. Mr. Graaf has two cars, a 22-h.p. Daimler and a 12-h.p. Brush. Back of the stable, and in the same building, is a private 15-h.p. electric light plant. A neat charging board is fitted up in the engine room, for charging accumulators.

I UNDERSTAND from Mr. Bush, Mr. Abe Bailey's driver, that a City and Suburban electric brougham is on order for Mr. Bailey. It is notable that Drs. Jameson and Smart are using Mr. Bailey's 22-h.p. Daimler in travelling about the Colony on a political campaign.

WITH regard to that much-debated question, the speed limit it may not come amiss to make a few remarks with regard to the state of affairs in Cape Town. In the city and the suburbs the motor-car is restricted to the ridiculous limit of 8 m.p.h., while other vehicles travel at twice that speed and more without let or hindrance from the police. And it may be stated here, in all fairness to the police, that they themselves have no wish to fall foul of motorists at all, but they have strict instructions to arrest anyone whom they think is travelling above the limit, not to take any names and addresses, but to take them straight away to the police station. I hope to soon see the speed limit removed entirely and some system of registration instituted which will lead to the conviction of real offenders.

MR. NEWMARK, of Cape Town, has purchased a 10-h.p. German Daimler lorry for the conveyance of goods from Cape Town to Stellenbosch. Mr. Newmark was taken for a trial trip on the vehicle the other day, and pronounced himself as eminently satisfied with its behaviour.

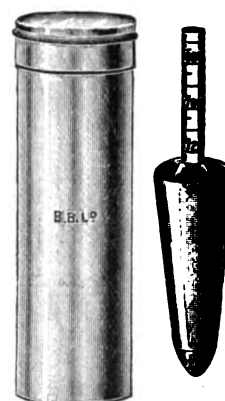
THE Pontefract Corporation has held a special meeting, to consider a resolution of a committee that the property whereon Mr. Robert Ewbank is erecting motor works, at the junction of the Wakefield, Weeland, and the Doncaster and Leeds turnpike, be purchased for £450, for road improvements.

GOOD progress has been made at Torquay with the arrangements for the introduction of the motor omnibus service next month. It is intended that the first 'bus shall run from the Strand to Torquay Railway Station and beyond to Chelston Square. Other vehicles to be put in service later will connect Tor, Babbacombe, and St. Marychurch with the centre of the town.

SOME USEFUL NOTES.

WITH regard to the straining of petrol, when pouring the same into the tank, a correspondent writes:—"I have had excellent results for the past four years by simply placing a piece of ordinary muslin across the mouth of the funnel when filling, and have found that not only are any impurities kept back, but that absolutely no water will go through with the petrol, as it stays in the bag formed by the muslin and can be thrown out after filling the tank. I have a storage petrol tank buried in the ground, from which I pump out what I require. I frequently have first to pour a little water into my pump in order to make it suck. This water, of course, goes in with the petrol, and if it was not effectively separated from same it would prove disastrous to the running of the engine. I have, however, never been able to detect any sign of water in my tank after using the simple method mentioned above."

MESSRS. BROWN BROS. have just brought out a useful little accessory in the shape of what they term an unbreakable densimeter. The float and receptacle being made entirely of metal, there is no glass that can be broken, while the device is of such a size that it can be carried either by motorists or motor-



cyclists. To prevent rattling the float is carried within the case in felt packing. To use the densimeter it is only necessary to fill the outer case with petrol and insert the float. The latter is graduated from .670 to .725.

IN the course of a paper recently read before the French Society of Civil Engineers, M. Jules Garnier described a method by which he repaired the jacket of his petrol motor, the cooling water in which froze and cracked the outside casing. The author stated that he had cemented wide cracks with a composition of sulphur, iron filings and sal ammoniac. In the present case, however, the crack was too small to allow the introduction of anything but a liquid, which led to the idea of utilizing the property which the copper salts have of depositing metallic copper when brought in contact with metallic iron. The cylinders, the jackets of which each had two openings for the circulation of the water, were placed vertically over a zinc basin, the lower openings were closed by a cork and the jacket filled with a slightly concentrated solution of sulphate of copper, through the upper opening. The solution leaked out rapidly through the cracks, collecting in the basin, from whence it was poured back into the jacket. The leakage was rapidly reduced to a mere sweating, so that it was sufficient to pour it back every hour. At the end of the day air was pumped into the jacket, giving considerable pressure on the liquid. This slightly increased the sweating, but as the extruded liquid was nearly colourless instead of being blue, it was obvious that the operation was nearly complete, and on the next day the cracks were perfectly tight and the cylinders were mounted and once more brought into use.

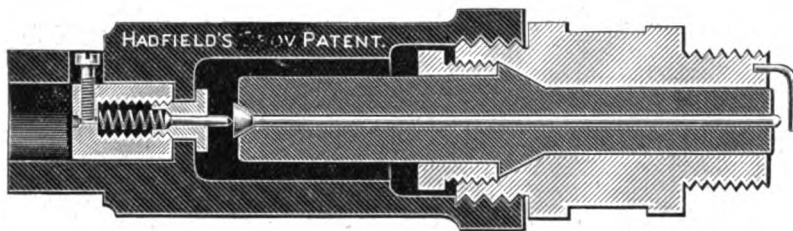
THE chairman of the London Improved Cab Company, Limited, has expressed the willingness of that concern to adopt a motor cab should a satisfactory type of vehicle be submitted

CORRESPONDENCE.

PROTECTED SPARKING PLUGS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be glad if you would allow me to point out that the Schiele Protected Plug, illustrated in your last issue, is an infringement of my patents. I enclose you an illustration of my plug which has been put on the market by the General Electric Company. This invention consists in applying a cover or shield of an insulating substance capable of standing great heat—called ambroin—to the plug, in such a manner as to always retain a dry surface upon the actual plug, and thus prevent the electrical leakage caused in wet weather in exposed positions. It also does away with the usual milled or hexagon nuts for holding the wire in position. The end of the shield is intended to hold the insulation of the wire; and the wire itself is held by a small side screw, which may then for absolute security be covered with gutta-percha. The action of screwing down the cover makes



contact inside with the plug by means of a spring buffer. The cover is securely held in position against vibration.

The English patent was granted February 27th, 1902, and the French patent September 24th, 1902. Both cover every description of insulating shield. You will also observe, as has been previously pointed out, that in this plug it is extremely easy to use the Panhard spark gap by cutting off a small piece from the buffer pin. The spark cannot then fire any loose gas, being entirely enclosed.—Yours truly,

FRED. H. HADFIELD, M.I.E.E.

TAKING CORNERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I wish you would call the attention of motorists to the advantage of taking corners on the proper side of the road. I speak now of Northumberland, where I have had several very narrow shaves from cars coming fast round on the wrong side of the road. They are a danger to other vehicles as well as to motors, and only help to make motor-cars more disliked.—Yours truly,

P.

MERCEDES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in your Journal of the 18th inst. that "Automan" in his "Continental Notes," in speaking of the Mercedes firm, makes the assertion that the word Mercedes is of Spanish origin and means Wednesday. I wonder why he says this, for it is the second time he has done so. Mercedes certainly is a Spanish word and is a woman's name. But it does not mean Wednesday, the Spanish for Wednesday being Miercoles.—Yours truly,

J. TODD.

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent S. J. C. Nixon rather gets away from the subject matter of this correspondence which, as originally started, concerns the influence of racing on car improvement, especially as regards the touring vehicle. In our last communication upon this subject we showed that racing had deprived the tourist for many years of several of the most important features of the touring vehicle, and in relation to what Mr. Nixon now says regarding the horizontal engine we may say that, whilst we admit that racing has, on the continent, resulted in the abandonment of this type of engine, we hold that—as we are believers in the horizontal type—in so doing racing has again done harm rather than good to the touring vehicle, for it is quite certain that the firms he mentions abandoned the horizontal engine in favour of the vertical one not because the latter is better, but simply because the public, blindly following the lead of "pace," called for it. We do not dispute Mr. Nixon's statement that success in motor racing has brought large business to the successful manufacturers, though where he gets his figures of £4,320,000 as the direct result of the Paris-Berlin race from we are at a loss to know, and we most certainly dispute their accuracy. But that does not affect the subject matter of our controversy, which relates to the effect upon the machine and not on the business done.

We are glad Mr. Nixon agrees with us in regard to the value of silence in a car—not only silent exhaust, however, but silence in transmission—but how Mr. Nixon can possibly assert, as he does, that "it is thanks to racing that we have discovered that it is not necessary for a car to 'bellow like a bull' to be fast," we cannot conceive, because it is

entirely discordant with facts. "Bang! bang! came the angry roar from the great exhaust box, which had the clamour of a huge tin can beaten by a blacksmith's hammer with lightning blows." Such is the description of Jenatzy's Mercedes in one report of the Gordon Bennett race last week, and if Mr. Nixon had been present at that event and the Dublin speed trials, as we were, he would have known that the description was not exaggerated. It is true that this car can be made to run with great quietness, but that is not when racing, and Mr. Nixon may not know, though it is a fact, that this said quietness was only attained when the firm adopted throttle control, which we had been using for five or six years, but which the makers of racing and other cars ignored because it was "not economical." The adoption of this, however has not been due at all to racing, as, when racing, silence is the last point considered. Again Mr. Nixon says the Gordon Bennett race has proved "that neither America, France, nor, I am sorry to say, England, can produce such a reliable, fast, silent, racing car as Germany." Well, we have shown above that silence in a racing car is *non est*; faster, perhaps, Jenatzy was, but it was as much the man as the machine, and as for reliability, as two of the three Mercedes cars in the race retired through broken axles (and it has been stated that the winner's also was cracked at the finish), whilst all three French cars went through without mishap, and the English cars were put out of action by road accidents and tyre troubles, this point goes certainly to the credit of the French, and at least as much to ourselves as to the Germans. So much for Mr. Nixon's conclusions, which it appears to us are about on a par with those which have led the public as a whole to so largely follow the lead of the racing machine, to its own loss.—Yours truly,

THE DURYEA MOTOR CARRIAGE COMPANY.

L.P. asks:—"Is a motor-car, when going on a road in a thunderstorm, more of an attraction to lightning than a carriage, or not?"

CLAIMS FOR DAMAGES.

R. S. RISPIN has obtained judgment for £25 and costs in the Manchester County Court against S. Etchells, whose motor-car knocked the plaintiff down in April last.

JOSIAH SHELLEY, of Oldham, sued J. H. Milner, of Leeds, at the Saddleworth County Court, for £50 damages, caused by the alleged negligent driving of a motor-car. The case for the plaintiff was that whilst driving in a trap over Standedge Hill he was run into by defendant's car, and he and his wife were badly injured. Without hearing witnesses for the defence, the judge held that a *prima facie* case had not been made out. The view he took was that the horse suddenly became restive and got in front of the car. The case was dismissed, but only out-of-pocket costs were allowed.

ALLEGED OBSTRUCTION.

EWART CHARLES AMOS, who did not appear, has been summoned before the Chichester County Bench for allowing a light locomotive to cause unnecessary obstruction on the highway at Bognor. P.C. Fry deposed to seeing defendant's motor-car left unattended for 53 minutes. Defendant afterwards wanted to "square" him. Fined £3 and costs.

CHARLES MOON was summoned for a similar offence at Bognor, and pleaded not guilty. P.C. Alce said he saw defendant's motor left for half-an-hour. Defendant contended that the road was wide, and there was no obstruction. He saw the policeman near the car and thought it was all right. Fined 10s. and 7s. costs.

A CHARGE DISMISSED.

At Kingston, on Monday, A. D. Billings was charged with stealing a motor-car and with wilfully driving the car as to cause injury to James Hughes, of the Coldstream Guards, at Cobham, on July 12th. The Bench dismissed the charge of stealing, but convicted for reckless driving, and imposed a fine of £10, or a month in default.

CLUB NEWS.

NORTH-EAST LANCASHIRE.

PRACTICALLY the whole of the members of the North-East Lancashire Automobile Club accepted the invitation of Mr. Briggs Bury to a garden party on the 17th inst. at that gentleman's residence, Bank House, Accrington. Unfortunately the weather was very wet, and only about a dozen cars were driven by guests.

POLICE TRAPS.

THERE is a police trap at the bottom of John o' Gaunt's Hill, entering Leeds. It is laid between the two bridges at Stourton, on the road from Pontefract.

A MEASURED distance of 220 yards between Basingstoke and Winchester has been prepared for the capture of motorists passing that way.

SEVERAL police traps have been established in the vicinity of Cardiff and Newport, Mon.

THERE is a trap between Hilton and Sudbury, near Derby.

POLICE officers are now stationed at Redbourne, Hibaldstow, Scawby, and other villages in the north of Lincolnshire, on the lookout for motorists.

OUR attention has again been drawn to the police trap between Iford and Christchurch.

By means of flash light the police of Slough hope to catch motorists travelling rapidly through the town at night time.

AT Worthing, a police constable has explained the latest device for the trapping of motorists. He took the time from the moment the motor car passed into the shadow of the blacksmith's shop at the south end of the Broadwater Green. Counsel for the defence submitted that to gauge the distance by means of a shadow which varied with the sun was very unsatisfactory, and he asked the magistrates under the circumstances to dismiss the case. Notwithstanding this a fine was inflicted.

THE police in the western suburbs have lately been active. There is a measured stretch of road between Hammersmith Bridge and Barnes Common worked by two constables with watches.

THERE is a measured furlong with electrical timing apparatus at Maresfield, about a mile and a half from Uckfield on the main road to East Grinstead.

FURIOUS DRIVING CASES.

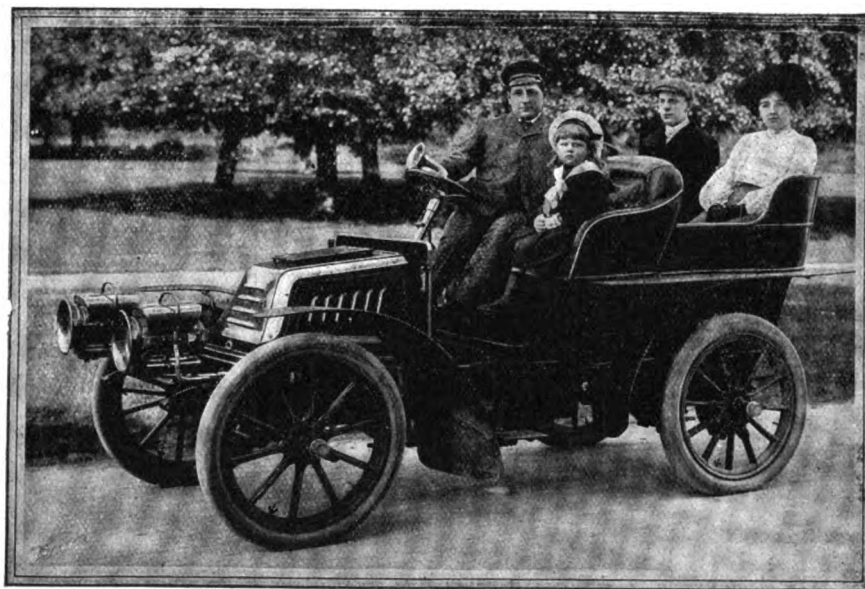
AT Brentford the fine in motor-car cases is generally £10.

SIX motor-car drivers and three motor-cyclists have been charged at the Christchurch Petty Sessions with driving at excessive rates of speed. The police evidence was to the effect that the speed varied from sixteen to twenty-five miles an hour. The chairman (Mr. J. Kemp Welch) said that these being the first cases in the district only nominal penalties would be enforced, which varied from £1, including costs, to 32s. He also intimated that the Bench would take a severe view of future cases.

the young woman seemed to have run in front of the car. The summons would therefore be dismissed.

THE county justices at Windsor on Saturday had a number of cases before them, the fines amounting altogether to £54.

MR. D'OYLEY CARTE, of Weybridge, was summoned at Chertsey for driving a motor-car at Addlestone at more than twelve miles an hour on July 6th. Superintendent Hackman read several previous convictions against the defendant, who was fined £5 and costs. There was another case against the defendant for a similar offence on the 13th inst. Police-constable Bettison said he and Inspector Marks set their watches on the morning of the 13th, and then he was instructed by the inspector to go to Weybridge Station and take the time of any car which left or arrived at the station. Inspector Marks said that on the morning in question he saw Mr. D'Oyley Carte driving his car at an average speed of nineteen miles an hour. The "trap" had been laid for Mr. D'Oyley Carte. He took the time accurately. Mr. Crowdy called Frederick Wiseman, the driver of the car, who said Mr. D'Oyley Carte knew of the trap, and tried not to fall into it. He took his time for doing the distance in consequence of this, and went under twelve miles an hour. Defendant was fined 40s. and costs. Frederick Wiseman, the driver, was then summoned for a like offence, on the 13th inst. From the evidence of the police, it appeared that the defendant took charge of the car after Mr. D'Oyley Carte had left it to catch his train. Inspector Marks said that he told Wiseman that he should summons him every time he went over eighteen miles an hour. The Clerk: That means to say you never summons under eighteen miles? —Witness: No, never, unless there is danger. The Chairman said the fine would be 40s. and costs.



Mr. J. C. Percy on his 10-h.p. Ariel Car.

THOMAS MORRIS was summoned at Oxford for driving a light locomotive at twenty miles an hour at Lingfield. The machine was a quadricycle, and the defendant stated that he was taking his wife out for a ride when he saw sitting on a fence up the road a lot of boys. He was approaching a hill, and did not like to get off and push his wife up the hill for fear the boys would laugh at him. Accordingly he put on an extra spurt, and then he discovered that the boys were policemen!

ELEVEN motorists have been fined £78 at Newbury.

SEVERAL motorists have been fined recently at Epsom. There was a summons against Mr. Arthur Chase, well known in the cycling world, for furious driving at Sutton, but he proved to the satisfaction of the magistrates that at the time in question he was in Southend. The police stated that the person stopped gave Mr. Chase's name and address. The case was dismissed.

WILLIAM BROWN, of the International Motor Company, High-street, Marylebone, was summoned before Mr. Plowden at the Marlborough-street Police Court for driving a motor-car to the common danger. Constable Norman, 331 C, deposed that about ten o'clock on the morning of the 3rd inst. he saw the defendant driving a motor-car in Regent-street. A young woman named Catherine Payne alighted from an omnibus which was in front of the motor, and after stepping on to the pavement, crossed the road. As she was about to step on to the "refuge" the motor "drew out" to pass the omnibus and knocked her down. Mr. Plowden said that he did not see that the motor driver was more to blame than the young woman. He was on his proper side and was not going too fast. He did what was reasonable at the time, and

At Selby, C. A. White was summoned for furiously riding a motor-bicycle at Selby on the 27th ult.; and W. P. Green for having driven his motor-car at a greater speed than 12 miles an hour. Mr. Kemp, of Castleford, appeared for Mr. White, and raised the contention that a motor-bicycle was not a light locomotive within the meaning of the Act, and the Clerk characterised this as an interesting point. The decision of the Bench on the matter was, however, deferred. Eventually the Bench dismissed the case on the facts, and not on the point of law. The charge against Mr. Green was also dismissed.

At Rugeley, Captain Neil Haig, 6th Inniskillen Dragoons, was charged with furiously driving a motor-car on June 8th last, at Satnall Hills, a portion of the road between Rugeley and Stafford, in such a manner as to endanger the safety of passengers on the highway. John Brinckley said he was driving a herd of donkeys. At a bend in the road near the Satnall Hills a motor-car approached him from the wrong side of the road, knocked down a donkey, and dragged it for about twenty-five yards along the road, mangleing the animal so badly that it was necessary to shoot it. Captain Haig said that he was travelling at the rate of about ten or perhaps only eight miles an hour, but on seeing the donkeys he pulled up to about three miles an hour. He approached on the proper side of the road, but as the donkeys were scattered all about he changed his course in order to drive between them. He was nearly clear of the herd when one of the donkeys stepped in front of the car and was knocked down. The Duke of Westminster was called as a witness, but did not appear, and Mr. Staplee Firth informed the Bench that his Grace had been detained by an accident to his motor-car on the road. The Bench decided that there was insufficient evidence, and the case was dismissed.

FURIOUS DRIVING CASES.

COUNTY.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Crewe	W. Leech	15	41s. 6d.
Southampton	W. Gregory, Southampton	22	20s., etc.
"	H. Beasley, Southampton	20	20s., etc.
Keighley	R. Challock, Bradford	—	10s., etc.
"	H. Schofield, Shipley	18	10s., etc.
"	E. Greaves, Bradford	—	10s., etc.
"	W. Clapham, Manningham	—	10s., etc.
Guildford	W. E. Hutchings, Abingdon	20	£5, etc.
"	E. G. Mears, Leytonstone	16	£3.
"	T. Frost, Morden	24	£5, etc.
Chertsey	P. Whale	—	20s.
Uckfield	H. Holman, Lewes	25	£1.
"	W. H. Stirling, Hassocks	23	£1.
"	H. Chetwynd, Buxted	30	30s.
Pontypridd	F. Evans, Pontypridd	14	£1, etc.
Winchester	A. Wright, London	—	£3, etc.
York	T. W. Monkhouse, Knaresborough	—	20s., etc.
Horsham	H. E. Dyson, Brixton	25	40s., etc.
"	F. W. Smith, London, E.C.	27	20s., etc.
Dolgelly	R. M. Talbot, Coventry	—	£2, etc.
Rugby	W. J. Marshall, Belton	—	£1.
Selby	C. A. White, Selby	—	Dismissed.
"	W. P. Green, Leeds	—	—
Birmingham	A. W. Haynes, Birmingham	21	£1, etc.
Rushall	W. Briggs, Walsall	18	20s., etc.
"	W. Hitch, Walsall	21	10s., etc.
Arundel	Lieut. W. D. Downe, Southsea	28	£2, etc.
York	H. Rowland	—	£1, etc.
Bath	J. Bevan, Bristol	23	£1.
London	—	—	—
Guildhall	W. Kempton, Limehouse	—	10s., etc.
West London	A. McCormack, Regent Street, W.	20	40s.
"	Hon. R. Guinness, Grosvenor Place, S.W.	—	40s.
"	H. Mosenthal, Westminster, S.W.	—	40s.
Marylebone	R. Dickerson, Acton	35	£10, etc.
York	E. L. Cooke, York	24	£10, etc.
"	H. M. McAllister, Harrogate	23	£5, etc.
"	L. Lasseter, London	—	20s., etc.
"	L. Lasseter, London	—	£3, etc.
Newport	—	—	—
(Mon.)	W. Auning, Cardiff	21	20s.
"	T. G. Brooks, Cardiff	22	50s.
Bridgend	E. Thomas, Swansea	18	£2.
Grantham	B. P. Steenman	—	£3, etc.
Sudbury	A. Ford, Uttoxeter	30	10s., etc.
Southampton	A. E. Hendy, Southampton	14½	Dismissed.
Bangor	F. M. Bates (driver to the Marquis of Anglesey)	—	£5, etc.
Keighley	T. H. Haggas, Keighley	18	20s., etc.
"	E. Fairers, Frizinghall	—	20s., etc.
Otley	H. Cooke, Bradford	20	5s., etc.
"	J. J. Oddy, Birkenshaw	30	5s., etc.
Little Bowden	J. Clay, Nottingham	25	£5.
"	R. Harper, Broughton, near Manchester	25	£5.
Daventry	J. Pike, Whitton	27	30s., etc.
"	V. Ashley, Towcester	20	£2, etc.
Battle	T. L. Spencer	23	£3, etc.
Arundel	A. Dillaway, Westminster	18	£7 10s., etc.
Reading	C. D. Rose, M.P.	25	£5, etc.
Winchester	A. E. Knight (driver to Lord Howard de Walden)	24	£5, etc.
"	F. Jones (driver to Mr. Arthur Gyve)	28	£5, etc.
"	G. Ferrand, Winchfield	21	£3, etc.
"	W. A. Sale, Luton	25	£2, etc.
Chertsey	R. D'Oyley Carte, Weybridge	18	£5, etc.
"	R. D'Oyley Carte, Weybridge	19	40s., etc.
"	F. Wiseman (driver to Mr. R. D'Oyley Carte)	20	40s., etc.
"	E. J. Marshall, Sunningdale	18	Dismissed
"	A. Beeney, Weybridge	—	40s., etc.
"	J. H. Adam, London	24	40s., etc.
"	G. S. Schlater, London	26	40s., etc.
"	W. Horder, Newton Abbott	—	£5, etc.
"	H. K. Nesbit, Putney	25	£2, etc.
"	W. Herwin, Plumstead	23	£1, etc.
"	Captain Fair, Camberley	21	£2, etc.
"	W. F. Blaine, London	30	£3, etc.
"	H. Conpin, London	25	£3, etc.
"	D. Macintosh, London	26	£3, etc.
"	B. Wickenden, London	17	£1, etc.

FURIOUS DRIVING CASES.—(Continued.)

Chertsey	L. Raffolovich, London	28	£3, etc.
"	G. Turner, Sunninghill	22	£1, etc.
"	W. A. Baird, Glasgow	25	£10, etc.
Barnstable	T. Bibby, Westward Ho	20	£5.
Slough	Mrs. Payne	—	£5.
Brigg	W. Foster, Lincoln	21	20s., etc.
Rollsby	—	—	—
Norfolk	H. Watts, Yarmouth	17	£20, etc.
Selly Oak	—	—	—
Birm'gh'm	J. Turner, Harborne	—	Dismissed.
Oxford	P. S. May, Warrington	27	£2, etc.
"	J. Legg, Annerley	22	£2, etc.
"	J. Clunes, Baywater	27	£2, etc.
"	W. Wilson, Westminster	36	"
"	W. H. May, Maddock Street, W.	24	"
"	W. H. Sadgrove, Chislehurst	22	"
"	J. Bateman, Croydon	24	"
"	W. Wills, Fulham	31	"
"	A. Morris, Piccadilly, W.	31	"
"	N. Stevens, Weybridge	20	"
"	E. W. Jansen, Kensington	21	"
"	T. H. Wright, Upper Tooting	22	"
"	G. Duval, Eltham	24	"
"	L. M. Jessop, St. John's Wood	22	"
"	G. Drew, Bletchingley	21	"
"	H. Dittle, Kensington	24	"
"	E. Orchard, Norwood	24	"
"	S. Kahn, Mount Street, S.W.	21	"
Epsom	F. Sharp (driver to Duke of Westminster)	19	£3, etc.
Shoreham	Lewis Waller, Comedy Theatre, London	24	£5, etc.
Kingston	B. Nadal, Teddington	21	£3.
"	L. W. Jessop, St. John's Wood	20	£2.
"	D. M. Weigel, Long Acre, W.C.	32	£5.
"	H. Lamb, Kingston	20	£1.
Newmarket	S. Martin, Newmarket	—	Dismissed.
St. Neots	Major F. L. Lloyd	—	"
"	G. Fletcher, Arbroath	27	£10.
Newbury	D. M. Uie, Long Acre	32	£5.
Grantham	B. P. Steinman, Boothby Hall	17	£3, etc.
Brentford	G. A. O'Callaghan, Kensington	18	£10, etc.
"	J. Hancock, London, W.	18	£10, etc.
"	W. Dervery, Battersea	20	£10.
"	A. Morris, Piccadilly, W.	18	£10.
Epsom	F. Bolton, Wimbledon	18	£5.
"	F. Sharpe, London, W.	19	£3.
Richmond	J. Jaffe, Piccadilly, W.	30	£10, etc.
Thornbury	G. Smith, Bristol	20	10s., etc.
Worthing	A. Gibbs, Woking	19	£2.
Abingdon	F. Fretman, Maida Vale	—	£5, etc.
Chester	W. Rathbone, Liverpool	14	20s., etc.
Southport	R. Mangnall, Birkdale	20	10s., etc.
Arundel	H. Aglia, London	32	£7, etc.
Cheltenham	R. V. Webb	16	£2, etc.
Rugeley	Capt. N. Haig, 6th Dragoons	—	Dismissed.
Marlborough	—	—	—
St., London	W. Brown, Marylebone	—	Dismissed.

Where no alleged speed is given it is understood to be above the legal limit. Pressure on our space prevents the publication of nearly fifty other cases of which we have received information.

IMPRISONMENT.

At the Newington Sessions, Alfred Field surrendered to his bail and pleaded guilty to wilful misconduct as driver of a motor-car, causing bodily harm to William Bettsworth. Mr. Hutton, for the prosecution, stated that Bettsworth was training for a walking match, accompanied by a friend on a bicycle, in Clapham Road, on the evening of June 8th, about ten o'clock. The defendant in his car came up from behind, and suddenly swerving to avoid a bicyclist, he ran into the walker, who was knocked down, run over, and dragged some distance.

The prisoner said the car was not his property. He was only the driver, and since this affair he had been dismissed from his employment. He was sentenced to a month's hard labour.

CANCELLING A CONTRACT.

FRANK MORRIS, of King's Lynn, sued William Clarke, master of the Workhouse at Downham Market, for the recovery of £2 5s., for the hire of a motor-car. Mr. Sadler, for the plaintiff, said his client contracted for the amount named to convey defendant by motor-car to Beckingham, near Loddon. Mr. Morris sent a vehicle, with his brother as driver, and with an assistant. On the journey from Downham one of the tyres came off just through Fincham, and the driver said he would go on, and drove without a tyre to Swaffham. It was a miserable and dreary day, and on reaching Swaffham Mr. Clarke refused to go any further by the motor-car, but preferred to continue his journey by rail. His Honour held that, under the circumstances, defendant was justified in withdrawing from the contract, and gave judgment for him, with costs.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, AUGUST 1, 1903.

[No. 230.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



NOT only are the police prone to subterfuges in trapping motorists, but the frequency with which they don plain clothes to effect their purpose has become a scandal. In fact, motorists are sometimes stopped by ordinary persons who pose as policemen without authority. In a case at Colleshill against Mr. Ernest Owers, the question has been raised, and will, we hope, shortly be settled. Mr. Owers was charged with refusing to stop when called upon; but his counsel submitted that as the constables

were not in uniform no offence had been committed. He stated that he had the opinion of Mr. Charles Matthews upon the point that no offence was committed unless a constable was in uniform. Mr. H. Maddocks (the magistrates' clerk) said that he should advise the Bench that the offence was committed whether the constables were in plain clothes or in uniform, as motorists who refused to stop when called upon did so at their own risk. As to whether the person who stopped a motorist was a police constable or not, Mr. Maddocks pointed out to Mr. Minton-Senhouse (counsel for Mr. Owers), that the driver should ask the person, if he were in plain clothes, for his warrant to prove that he was a constable. Mr. Minton-Senhouse said that he might ask for a case upon this point, and the Bench expressed their willingness to state a case if desired.

The Midland Hill Climb.

THE Midland Club are to be congratulated on the success of their hill climbing competition on Saturday, and the courtesy they extended to the Press might well find emulation on the part of organisers of other contests. Mr. Aveling's urbanity was conspicuous, and the way in which all the arrangements were conducted reflected credit on all concerned. The Napier and the Motor Manufacturing Company did well, and none will grudge Mr. Iden the success he achieved with his 20-h.p. car, which has shown itself a worthy rival of many of foreign make.

A Sad Accident.

IT was a regrettable accident on Sun Rising Hill, Warwickshire, on Sunday evening, when two lives were lost. Mr. and Mrs. C. Alger, of Diss, with Mr. Chas. Alger and Mr. J. J. Brittain, had intended going on a motor tour in the Thames Valley. On Sunday they reached the hill where the climbing competition had taken place on the previous day. On the hill are two curves, one of them very sharp, and it was in descending towards the last bend that the accident happened. The car was travelling down the slope at the rate of eighteen miles an hour. At the curve the car overturned and shot into the hedge. Mr. Charles Alger was thrown upon his head and killed instantly. Mr. Alger, sen., sustained a broken neck and died within half an hour. Mrs. Alger was severely shaken, while the other member of the party escaped with a few superficial bruises and abrasions.

A Club Warning.

THE fixture card of the Leicestershire Automobile Club is interesting as proving beyond doubt that motorists are not the wild, harum-scarum people some would think them to be. The committee wish to impress most emphatically on all the members of the Club the advisability of driving with every possible consideration for other users of the road. They are most anxious that all members of the Leicestershire Automobile Club shall earn a good name for careful and courteous driving, both with the police and throughout the county. Last Saturday the Club had a run to Matlock, and on the 13th inst. will journey to the Monastery via Loughborough and Nantanton, returning by Markfield.

Motor-Cars in India.

THE automobile has become thoroughly acclimatised in our great Indian Dependency, where its adaptability to the varying conditions of the road surface should give it a great future. Carriage builders in India are already studying the details of the new locomotion, and Messrs. Simpson and Company, of Madras, have commenced the construction of steam cars under the superintendence of Mr. S. J. Green. The firm have put down special machinery for the manufacture of the parts, and the only fittings imported are the "Clarkson" burner and some minor accessories. Hitherto the Indian Government has been somewhat laggard in its encouragement of the automobile; now, however, that it has developed into a local industry we may look for a more tolerant attitude.

More Societies.

ON how slight a pretext may men form new organisations? There is a Pedestrians' Protection League, with offices in the West-end of London, a society for the protection of those who walk along the highways, with headquarters at Shrewsbury, and now comes a suggestion from Mr. R. D. Yelverton, who writes from the Temple with regard to the formation of a Motor Control Association. "Such a society," he believes, "would be valuable in sustaining public opinion in Parliament, and in aiding the authorities to enforce the law." We confess our vision is not parallel with that of Mr. Yelverton. Why should he be content with "sustaining" public opinion and "aiding" the authorities. Far better to take the place of Parliament itself and supplant the authorities altogether. What is wanted, is a Society for the Suppression of Societies.

No Lights.

THE necessity for motorists adequately providing for efficient lighting of cars has been emphasised by fines inflicted on neglectful motorists at Colchester and Slough during the past few days. Now that the evenings are drawing in, and the hours of sunlight are being appreciably shortened, motorists would do well to give heed to the lighting of their cars. At a time when legislation is impending all owners and drivers should be most careful on this point, or they may find even more stringent

regulations suggested. It is not a very difficult matter, but its neglect may work great hurt to the future prosperity of the movement.

The Size of Lamps.

In the House of Lords Lord Balfour of Burleigh has suggested that motor-car lamps should be lessened in size and number, a suggestion that will not be received with great favour by motorists.

The tendency nowadays is to increase the size of lamps, and the only possible objection to this is the glare that is seen by persons approaching the car from the opposite direction. This, however, can be regulated and directed on to the road surface. There is scarcely sufficient importance in the matter to warrant any restrictions, and certainly the maximum of light is desirable when travelling at night.



The Daughter of Mr. E. W. Hart, of Luton, on her Electrical Car.

The Wear on Roads.

At the meeting of the Surrey County Council, held at Kingston-on-Thames on Tuesday, the county surveyor presented a report on the highways of the county, in which he said:—"The traffic of traction-engines and motor-cars is very much increasing, and the traction traffic has caused much damage during the winter to the flint roads. The motor-car traffic has had a curious effect upon the roads, especially upon flint roads on a dry foundation. The large rubber tyres separate the small metal from the large and extract it, and it is a common occurrence now, after a dry day, with heavy motor traffic, to find long lengths of such roads as the Portsmouth road, where the surface has been perfect in the morning, covered with a fine sharp grit, which had been sucked up during the day by india-rubber tyres. This movement of the small metal allows the large stones to grind and wear more rapidly than when the

interstices are properly filled and the road more solid." In moving that an increased amount of £50,000 should be allocated to the repair of the main roads during the current year, Mr. E. Ellis said the increased cost was incurred more on rural roads, so much used by motor-cars, than on urban roads. Personally he found that a car going at a rapid pace on a gravel or flint road practically tore the road all to pieces; and he looked forward with apprehension to the time when motors would be much more extensively used than at present. The recommendation was carried.

Attitude of the Railways.

EVIDENTLY the Great Eastern Railway Company and the North-Eastern Railway Company regard the motor-car in different lights. At the half-yearly meeting of the former company on Tuesday, Lord Claud Hamilton said he wanted to raise his voice and to be supported in so doing by the shareholders of that and other companies against the unequal legislation which it was proposed to pass in respect of motor-cars and light railway and tram companies. He would like to know by what form of logic it could be argued that whereas speed limits were necessary for conveyances running through private property on rails, they could not have a speed limit for motor-cars that could run where and how they liked.

Encouragement in the North.

WHILE the chairman of the Great Eastern Railway thus shows his antipathy to automobilism, the directors of the North-Eastern are proposing to utilise the motor-car in their service, and have just made a conditional promise to try an experiment of running several motor-car buses for passengers and goods from their Richmond and Leyburn railway stations up to Reeth, in Swaledale, providing their experience in this direction in the Beverley district proves successful. This would be a great boon to Reeth and Swaledale generally, and would, no doubt, lead to a large number of people visiting this charming district.

The Wiser Policy.

THIS is the proper attitude to assume, and we are surprised that Lord Claud Hamilton should have regarded the subject in so narrow a light. The railway companies cannot afford to denounce the motor-car, and to ignore its possibilities is folly indeed. In adopting the automobile to connect their stations with thinly-populated districts, the North-Eastern Railway Company is showing an enterprise which may prevent the competition of private persons and municipal bodies. This is a policy that seems more worthy of encouragement than idle vapourings against a measure which seeks to bring to an end the illegalities and absurdities which have been perpetrated in the name of justice these last few years.

An Irish Race for 1904.

MR. R. J. MCCREDY suggests that an international alcohol competition over the Gordon Bennett course should be held next year, and has proposed the following regulations:—Each competing country to use alcohol of its own manufacture, the English cars, however, using Irish alcohol; a team of three home-made cars to be entered by each nation, with native born drivers; the cup to go to the best team, and a special prize to the driver of the first car; cylinder capacity of the motors to be specified and to be identical, and a *minimum* weight for the cars to be fixed; the engine dimensions could be so arranged that the cars would be of normal horse power; and the speeds would, therefore, not be so excessive as in the cup-race of 1903; the number of controls to be diminished, stoppages only to be made at Kilcullen, Kildare, Athy, and Carlow; the route to consist of two circuits of the east section, and three of the west; distance, 261 miles. Should the idea fructify, surely

some more interesting course could be obtained. Why not a run from Dublin to Cork, passing through co. Wicklow, and thus giving the south an opportunity of sharing in the spoils?

A Clergyman's View.

WE would thank the many Yorkshire readers who have sent us information with regard to the proceedings of the last meeting of the Bridlington District Council. The Council, it appears, resolved to petition against any raising of the present speed limit for motor-cars, and in favour of the licensing of all drivers of motor-cars. The resolution was moved by the Rev. G. E. Park, who said he strongly objected to the public being endangered by a madman "on a mechanical carriage, pushed by a half pint of petrol, and seated on half a ton of scrap iron and a stink." Such vivacity of utterance may please the gallery, but it does not help matters very much. At the present time archbishops and bishops are taking to the motor-car with evident delight; surely the lesser lights of the Church are not seeking to discourage those in authority over them.

Fancy Phrases.

SOME noble lords are also introducing a picturesqueness of description into the motor-car controversy that would have done credit to the vestries of the last century. "Ghastly goggled motor guys" is the definition of the motorist as given by the Earl of Wemyss, and Lord Kelvin has described the automobile as "the rich man's toy." Fortunately the movement is sufficiently well established not to be disturbed by some fanciful descriptions.

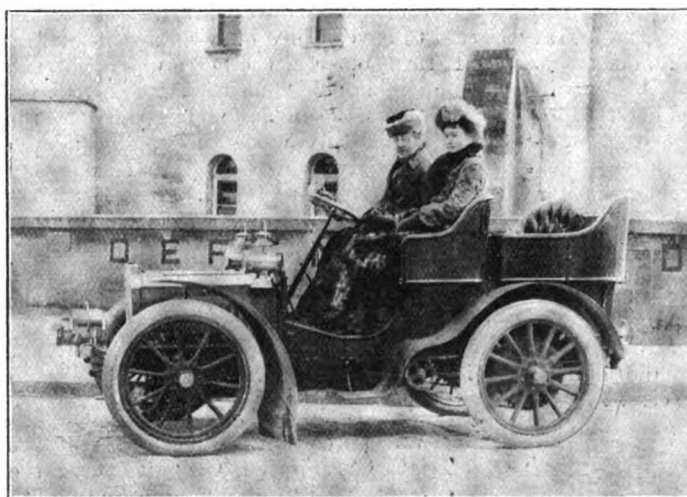
The Motor Car Bill.

ON Tuesday the House of Lords finished with the Motor-Car Bill, and Mr. Balfour made reference to the measure, which was included among the Bills that the Government hoped to pass, but which could not pass if they met with prolonged discussion. The Bill dealt with a subject that had caused a great amount of feeling, and a Bill of that kind could not pass unless those deeply interested in it would restrain their debating powers in defence of their views. By universal consent the present law was unsatisfactory, and he should regret if the matter remained unsolved until the House reassembled. If the Bill was treated in an unsympathetic spirit there was no chance of it becoming law. Later in the evening a meeting of those interested in the subject was held at the House of Commons, when it was agreed to accept the Motor-Car Bill as it came from the Lords. The general opinion was that the Bill was not altogether favourable to motorists, but that the Government's solution should be accepted as the best to be obtained in the circumstances, and in view of pressure of time.

A Western Club on the Bill.

A SPECIAL meeting of the Cheltenham and Gloucestershire Automobile Club, to discuss the Motor Regulation Bill recently introduced into Parliament by the Government, has been held at Cheltenham. The president (Dr. H. P. Fernald) was in the chair. The Bill was considered clause by clause, and was approved with some reservations. The first amendment suggested was in Section 1, which seeks to enact that if any person drives a car recklessly or at a dangerous speed, having regard to the circumstances and the amount of traffic which is or which might be expected to be on the highway, he shall be guilty of an offence. It was unanimously agreed that the words italicised ought to be deleted as creating great uncertainty, and as placing arbitrary power in the hands of the police and magistrates. With regard to the proposed penalties, it was felt that they are excessive, especially when contrasted with the nominal penalties inflicted on offending drivers of horse-drawn vehicles. The following resolution

was unanimously passed:—"That this club is of opinion that the section imposing fines and imprisonment is unnecessarily harsh and unfair to the owners of light cars, voiturettes, and motor-cycles, and that the former resolution of this club as to graduated fines, based upon the horse-power of the vehicle, should be substituted, and by this means more uniformity of punishment be ensured. And, further, that the portion of the section relating to imprisonment without the option of a fine should be entirely deleted." The previous resolution referred to reads thus:—"That fines for excessive speed should be proportionate to the horse-power of the motor-vehicle, and that the present limit of the fine of £10 is excessive for persons of moderate means." It was decided to send copies of the resolutions to the Secretary of the Local Government Board, the local M.P.'s and Mayors, and others likely to influence public opinion.



The Countess of Chenorelle and Mrs. C. Friswell on a Peugeot Car at St. Germain.

Attendance Required at Slough.

RECENTLY Mr. Stuart Forster, J.P., was summoned to appear at Slough to answer a charge of having no tail lamp on his car when driving through the town. He wrote to the Bench admitting the offence and pleading guilty, giving as his reason for absence the fact that "I do not wish to add to the expense of this summons either in time, travelling expenses, or lawyer's fees." Mr. Forster heard nothing more until the 17th of July, when, in the morning, a policeman went to his house in London and arrested him under a warrant. Mr. Forster was taken to the Walton Street Police Station, and detained in custody there for about three hours pending the arrival of a constable from Slough. When he came he took Mr. Forster to Slough by train, and marched him to the police-station there. They then sent for a magistrate, who released him on entering into his recognisances. Mr. Forster attended with his counsel, Mr. Mears (instructed by Messrs. Firth and Co.), on the adjournment; for when the magistrates read the letter from Mr. Forster, they adjourned the case for a week. Although the clerk should have sent notice to Mr. Forster, no intimation of any kind was given, and when he appeared on the return of the warrant, no apology was offered to him.

The Motor Volunteers.

THE Motor Volunteer Corps will play an important part in the coming great manoeuvres in the western counties. The commanding officer of the corps has been instructed by Lord Roberts to provide a large number of cars to be driven by his officers and members, and to be attached to the four great camps. A number of motor-cyclists are required for this period, i.e., September 5th to 12th inclusive, and as a suffi-

cient number have not yet enrolled in the corps, motor-cyclists are called upon to enrol at once at 11, Tothill Street, Westminster, S.W., in order that they may be ready for the manoeuvres. On the 21st ult. Mr. H. S. H. Cavendish was on duty for Major-General L. Oliphant on inspection work. On the 22nd ult. he drove General Oliphant to Caterham; on the 24th ult. to Guildford. Mr. J. S. Goodhart was employed recently by Major-General Sir W. F. Gatacre, K.C.B., D.S.O., to make an inspection of a proposed manoeuvre area in the eastern counties, near Bawdsley.

Untrue Reports.

WHILST we denounce with no uncertain tone the conduct of those drivers who show no consideration for other users of the road, we cannot fail to be indignant when leading public men quote any unauthenticated cases of motor mishaps appearing in the daily papers. The Earl of Camperdown, in the House of Lords a few days ago, referred to a young lady at Chesham, whose horse was alleged to have been frightened by a motor-car, with the result that she was thrown. The driver of the motor car was said to have rushed off with no inclination to render assistance. It turns out that the horse was frightened by a hay-making machine in a neighbouring field, and that it was not till after the accident that an automobile came in the opposite direction to which the lady was going, and rendered every help in conveying her to the local hospital. It is really regrettable that the controversy now raging around the automobile should be embittered by the publication of false reports of this kind, and motor-cars further prejudiced by their recital by public men, who apparently are not always careful to obtain authoritative information. Since these lines were written the Earl of Camperdown has read in the House a statement to the effect that the information in the papers was erroneous; but why did he not make inquiries before giving further publicity to the error?

Dust Trials.

WE note with satisfaction that the Trials Organisation Committee for the current year are giving attention to the dust question. At their last meeting it was decided that Colonel Crompton and Mr. Basil Joy should act as a sub-committee to propose preliminary experiments, and perfect the details of a scheme for carrying out dust trials. We understand that Colonel Crompton has suggested that a certain portion of the road should be covered with a good quantity of suitable material, and the cars should be driven over this prepared portion at the same speed as on that which has not been treated. Photographic records of the dust raised will, it is thought, secure some reliable guide as to the dust-raising powers of each particular type of motor-car.

The Royal Progress.

ON Saturday afternoon the King and other members of Lord Londonderry's house-party set out from Mount Stewart for Portaferry in three motor-cars. On the return journey, in the course of a very steep ascent, however, the car suddenly stopped. A crowd immediately ran forward, and some of the people appeared anxious to shake hands with the King, but a number of officials and police intervened. The car was then pushed up the hill by bluejackets and police. The machine having been quickly got into order again, the car proceeded on its way, but it had not got very far when it again halted. The second stop, however, was only of momentary duration. The journey was almost immediately resumed, and was completed without further incident. On Sunday the King and Queen visited Lady Dufferin at Clondeboye, proceeding thither by motor-car. The Marquis of Londonderry and the Duke of Abercorn went before their Majesties in a pilot car. In the next vehicle were the King and Queen and Lady Londonderry, Earl of Shrewsbury driving. Princess Victoria was in the third car. His Majesty sat on the front seat with the Earl, Her Majesty

and Lady Londonderry being in the tonneau. Having visited Lady Dufferin, the party motored for about forty miles.

In Ireland.

ON Thursday of this week it was arranged that their Majesties should have a motor tour in Connemara. On Tuesday evening his Majesty's car, together with eight or nine others for the use of the Royal and Viceregal party, arrived from Dublin. Her Excellency the Countess of Dudley, who was attended by the Hon. Cyril Ward, motored over from Recess, and was accorded a cordial public greeting at Leenane. Mr. Horace Plunkett, Vice-President of the Agricultural Department, also arrived at Leenane. His car had already taken him on a tour of inspection over the roads which their Majesties will traverse in the journey through some of the prettiest scenery in Connemara.

The Fatal Accident.

ON learning of the accident referred to on a previous page, the Wolseley Company sent a representative to Sun Rising Hill to assist in any way that was possible. Mr. C. B. Alger, junr., was an expert driver, and the agent for Wolseley cars in Norfolk. The car he was driving was one of their earliest type of 10-h.p. cars, which he used for his own driving during the past twelve months. It can only be surmised that Mr. Alger, not knowing the hill, was taking the corner rather too fast considering the nature of the gradient, and probably the inside wheels had run in the gully on the inner side of the road, and in turning the corner this caused the car to upset. The car was examined before it was removed from the hill, and no fracture of any mechanical part was found; the brakes are all in good condition, the shoes of one of the hand brakes showing just the slightest sign of charring. The coroner's jury on Wednesday returned a verdict of "Accidental death."

Tyres.

ON another page we publish the results of the quarterly 100 mile trial of the A.C.G.B.I. held on Friday, the 24th ult., from which it will be seen that another test of the reliability of the motor-car was established. Unfortunately tyre troubles were again very prominent in the observers' reports, and one vehicle had actually to abandon the run owing to the innumerable tyre troubles which followed its career to Dashwood Hill. Only one out of four vehicles seems to have escaped the difficulties of its rivals in this respect. This is a result which should give makers of tyres food for thought.

THE entries for the reliability trials of the A.C.G.B.I. number 121 cars and 43 motor-cycles.

ON Monday, Mr. H. R. Wilding started from the Hotel Metropole, London, on a 10-h.p. Renault, for a commercial tour of the country.

DURING the visit of the Prince and Princess of Wales to the West of England the Royal motor-car showed signs of stubbornness on at least two occasions, and had to be pushed up the Peak Hill, Yelverton, and the Devil's Bridge, Princetown.

LIEUTENANT GANDY, in command of two non-commissioned officers and 50 men of the Telegraph Battalion Royal Engineers, from Woolwich, has left for Somaliland, where it is reported the Government propose constructing a narrow gauge railway and a line of telegraph across British Somaliland. Motor cars, camels, and mules will be employed in the transport of the plant.

THE failure of Mr. J. W. Cross to reach the top of the hill in the Midland competition reported on page 424 was not due to the power of the 20-h.p. Humber car being insufficient to negotiate it, but to the fact that he had not enough petrol in the tank to keep the carburettor full when on the steepest part of the grade. After he had started again the engine stopped, and on trying to start it he found that there was no petrol in the carburettor.

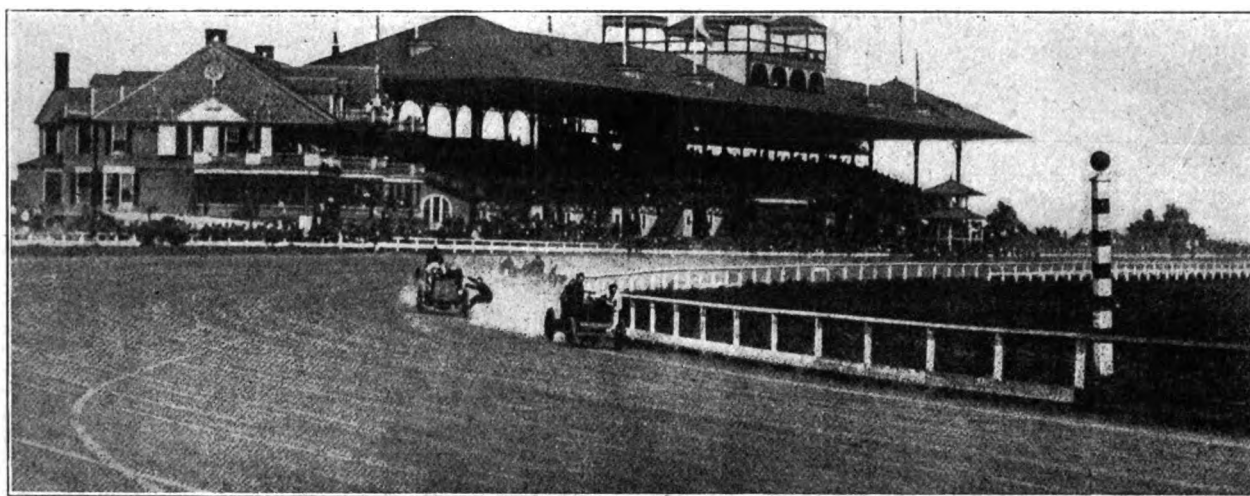
THE PASSING OF THE SPEED LIMIT.

THE man in the road, to adapt a phrase familiar in political circles, is somewhat prone to regard the motorist with aversion and with prejudice. Peering through goggles, garbed in unconventional raiment, and mounted on a mechanical steed, he presents a picture of ferocity that has alarmed the bucolic mind. Rushing through the country in a whirlwind of dust, and, in the earlier days vying with the perfume of new-mown hay in a somewhat odorous progress, he has incited attention in others.

And so there has already developed a tradition with regard to motorists that promises to linger in the countryside. Many rashly assume that the motorist is heedless and heartless, that he delighteth in worrying animals and scaring nervous J.P.'s, and that his ways are paths of wickedness. A moment's reflection should demonstrate the absurdity of such an idea. Firstly, the motor-car is not a costless article; it represents a great expenditure of money, and no owner would rashly run it into danger. Besides the damage to the car, there is always the fear of severe or fatal accident when reckless driving is indulged in. It therefore follows that no motorist is so insane as to tempt danger or attempt the impossible. Motorists are, after all,

On the one hand, it has produced a system of police ambushes and technical summonses, which have irritated the motorists, and, on the other hand, it has resulted in an embittered feeling in the general public against all persons who use motors, which as a dangerous class feeling is perhaps without parallel in modern times." All who have watched the steady growth of our list of cases of alleged furious driving must recognise the cogency of the statement of the President of the Local Government Board. By disguising themselves, by secreting their persons behind hedges, by resorting to tricks of any kind, the police in many places have become demoralised, and, goaded by county magistrates and rural councillors, they have secured convictions which have often been unfair and unjust. "Mr. Long holds that this unfortunate and even dangerous state of affairs constitutes the most trenchant condemnation of the existing legal speed-limit. It is his confident hope that by abolishing the technical and unenforceable speed-limit, and by making the motor-driver responsible for reckless driving at any speed, he will concentrate the attention of the motorist on what is, after all, the only crucial question, namely, the safety and comfort of the users of the road, whether a car be travelling at two or twenty miles an hour."

It is to be hoped that, whatever else happens to the Bill,



An Exciting Moment at the Empire City Race Track, New York.

human beings, and must be considered as possessing the feelings of ordinary men and women.

This fact is recognised by the Government and its supporters in its new motor legislation. Already agriculturists and horse-breeders have denounced the Government for agreeing to the abolition of the speed limit, and have drawn alarming pictures of what will happen if those who drive cars are not restricted to a certain mileage per hour. Mr. Long's reply to this view of the case is clear and emphatic. Writing on his behalf from the office of the Local Government Board, Mr. R. G. Duff says:—"Mr. Long is advised by those who are administratively in touch with the question of safeguarding the public, that the present legal limit of speed does not, in fact, constitute any effective protection to the ordinary users of the roads. The effect of the legal limit is rather to distract the attention both of the police and of the motorist from the vital question, the safety of the public, to the comparatively unimportant, and in all cases highly controversial, question of the actual speed in miles per hour at which a particular car is travelling. A legal speed-limit has now been experimentally in operation for some five years; but the area of its observance has been practically limited to the field of vision of the local policeman, and even in that narrow field it has often been impossible to prove its infraction. The law has been ineffective, and has been brought into contempt. It has failed to protect the public. It has failed to suppress the abuse of the roads by motorists,

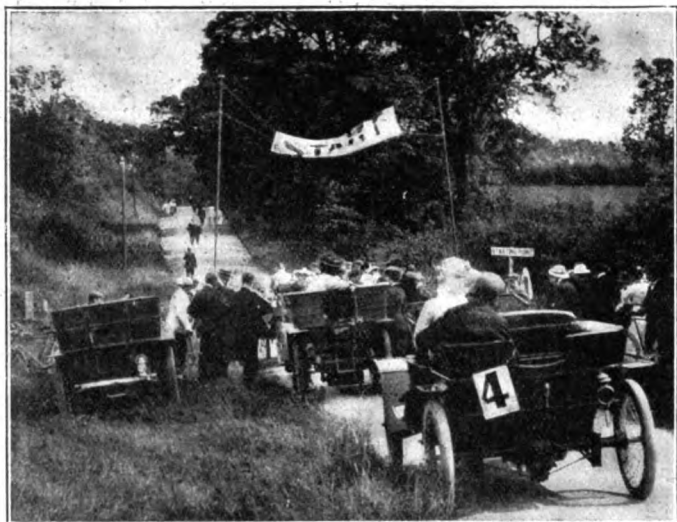
the clauses relating to the abolition of the speed-limit will remain. There are many incongruities and absurdities which we may have to suffer and tolerate, but upon this point there must be no wavering. Let the public be assured that reckless driving brings danger to the motorist as well as other users of the road—that it is, in fact, more dangerous to the man on the car than the man in the street. Then there should be no difficulty in assimilating the law with regard to motor-cars to that affecting other vehicles, and securing that "driving to the common danger" is made the actionable offence instead of merely driving at a rate which is faster than is possible by any other means of progression on ordinary roads.

THE Torquay and District Motor-Omnibus Company, Limited, has been registered with a capital of £10,000, to provide a service of motor-omnibuses for Torquay and district.

FROM Messrs. J. Griffin and Co., of Portsmouth, comes a motoring diary devised by Mr. Q. O. Grogan. This is the size of an ordinary manuscript book, the pages being divided into columns in which the owner can insert particulars of his consumption per run, number of persons carried, and other details. A goodly number of pages are reserved for remarks, and altogether the volume is one that is likely to be useful for motorists who care to add a system of book-keeping and diary recording to the pleasures of their touring.

THE MIDLAND HILL CLIMB.

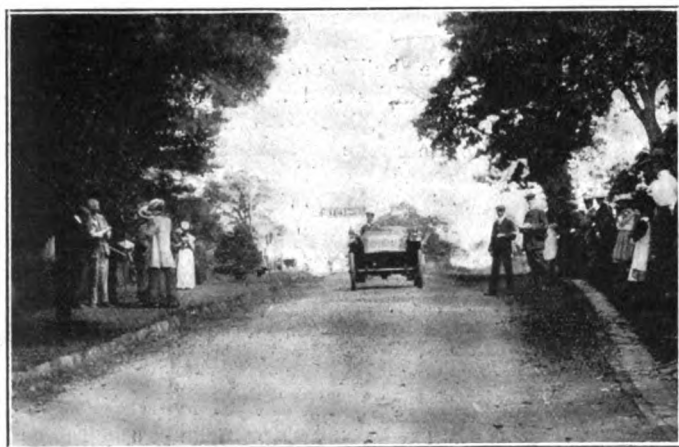
THE hill-climbing contest for the Midland A.C. President's Challenge Cup, on Saturday, proved one of the most interesting and successful of the events the club has organised. The weather was bright and warm, and an influential gathering assembled to witness the contests, in which several well-known competitors took part. A large gathering assembled



The Scene at the Starting Point.
[McNeil, Stratford-on-Avon.]

in the club enclosure at Sun Rising Hill House, and at the top and foot of the hill. Amongst those present, in addition to those whose names appear among the competitors, we noticed the Lord Mayor and Lady Mayoress of Birmingham, who had motored over, Mr. J. Broughton Dugdale, Messrs. C. Maudslay, senr., C. P. Type, hon. treasurer of the club, F. Lanchester, F. W. Lanchester, G. H. Lanchester, G. Patterson, J. D. Siddeley, H. Sturme, E. O. French, H. Luff-Smith, E. M. C. Instone, and others.

The contest was limited to petrol touring cars, each with its full complement of passengers, and the venue was Sun Rising



The Finishing Point.
[McNeil, Stratford-on-Avon.]

Hill, near Stratford-on-Avon, famous for its historical associations, and now, at any rate amongst motorists and cyclists, for its stiff gradients and sharp, unexpected bends. The stretch of the hill selected for the contest was 1,000 yards in length. Two stops, each of half-a-minute duration, were arranged, the second being only 500 feet from the finishing point. The finish was a "punishing one," and was indeed the crux of the contest, the hill being steeper there than at any other point, and giving a gradient

slightly under 1 in 6.50. The trial, it will be seen, necessitated the greatest skill and judgment in driving, and was calculated to exhibit the promptitude with which the cars could be got into motion on a severe incline. Fortunately the surface of the road was in good condition, and the arrangements were so complete and admirable in every way that no hitch occurred during the afternoon. This result was due to the unremitting attention bestowed upon every detail by the hon. sec. of the club, Mr. T. C. Aveling. To prevent accidents in case of brake failure at the stopping stages, ropes were thrown across the road on the arrival of the car, but happily these were not needed.

There were thirty entries, and of the twenty who actually took part in the competition only three failed to make the ascent.

The competitors, with the times in which they accomplished the climb, were as follows:—

Entry No.	Name of Driver.	Name of Owner.	Maker of Car.	H.P.	Time of Ascent. min. sec.
1	C. Vernon Pugh	C. Vernon Pugh	Lanchester ...	10	6 7½
2	W. B. Davies	W. B. Davies	Traffic Manfg.	12	Retired.
3	J. A. Holder...	J. A. Holder...	Panhard ...	24	3 32
4	A. Millership	A. Millership	Lanchester ...	10	5 24½
7	H. F. L. Hemmings	F. W. Keen ..	" ...	10	5 57½
9	T. B. Browne	T. B. Browne	James and Browne	18	3 57½
10	J. W. Cross ...	J. W. Cross ...	Humber ...	20	Retired.
11	H. H. P. Deasy	H. H. P. Deasy	Rochet and Schneider	16	4 17½
12	C. C. Maudslay ...	C. C. Maudslay ...	Maudslay Motor Co.	15	Retired.
14	C. Edge ...	S. F. Edge ...	Napier ...	20	2 55½
16	G. Iden ...	Motor Manfg. Co.	Motor Manfg. Co.	20	3 21½
18	E. W. Lewis...	E. W. Lewis...	Daimler ...	22	3 33½
19	J. V. Pugh ...	J. V. Pugh ...	Lanchester ...	10	5 25½
20	F. S. Bennett	Anglo-American Co.	Cadillac Automobile Co.	6½	5 12½
22	A. Callan ...	Wolseley Co.	Wolseley ...	24	3 55½
23	A. E. Crowdy	"	" ...	20	3 45
24	Remington ...	H. Austin ...	" ...	12	4 56½
25	Max R. Lawrence	Max R. Lawrence	Lanchester ...	10	6 8½
26	G. Lanchester	G. Lanchester	" ...	16	4 14½
27	Hon. C. S. Rolls	Hon. C. S. Rolls	Panhard ...	15	3 26½

The following cars gave the best gross times:—

- 1 20-h.p. Napier driven by Cecil Edge ... 2.55½
- 2 20-h.p. M.M.C. driven by G. Iden ... 3.21½
- 3 24-h.p. Panhard driven by J. A. Holder ... 3.32
- 4 22-h.p. Daimler driven by E. W. Lewis ... 3.33½

Owing to several protests, the actual winner of the Challenge Cup was not known when these lines were written.

Although the Maudslay car failed to negotiate the Sun Rising Hill in the competition on Saturday, we understand that the same vehicle climbed the hill three times successfully on the previous day. Mr. Maudslay was determined to take part in the contest, though he was far from well at the time.

When the competition was over Mr. G. Iden essayed to take a 20-h.p. M.M.C. omnibus with six passengers on board, including the writer, up and down Sun Rising Hill. Both the ascent and descent were accomplished without a hitch or in any way showing an undue strain to the working parts of the vehicle. A ride back to Stratford-on-Avon in this car was very agreeable.

Mr. Callan, on a 24-h.p. Wolseley, mistook the ropes for a chalk line, and so pulled up at a wrong place on the hill, thus losing his chance of winning.

In addition to the challenge cup presented by Mr. J. Broughton Dugdale, J.P. (president of the club), a certificate will be awarded to each car and driver successfully making the climb. At the conclusion of the competition a dinner was provided at the Shakespeare Hotel, Stratford-on-Avon, where a large gathering assembled.

CONTINENTAL NOTES.

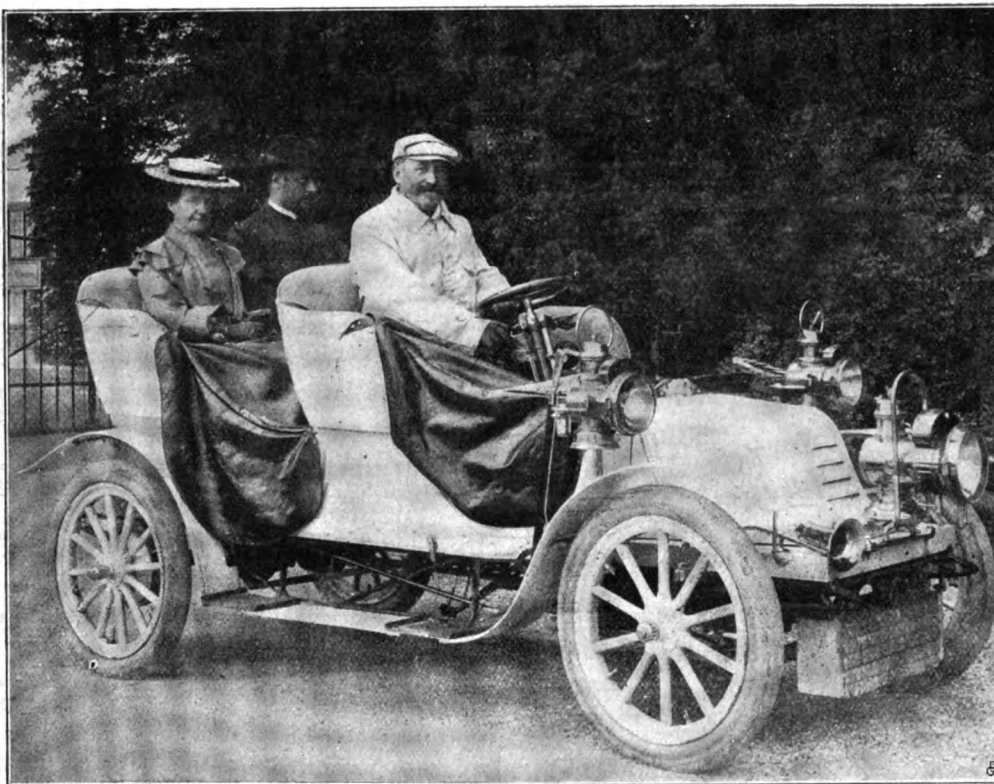
By "AUTOMAN."

THE utility of the automobile in time of war has been more fully recognised by the French War Office than by any other similar department in other countries. Continual experiments are being made in many directions, and the successful trials are gradually leading to the adoption of the new locomotion. Much, however, remains to be done, and there will certainly be in the near future a large amount of public money expended in the direction of seriously equipping the French army with automobile transport vehicles, which have now become obligatory for warfare in civilised countries.

It has been clearly demonstrated by experiments made with a C.G.V. car, that a quick-firing gun mounted on an automobile can make itself very much felt by its rapid change of position. During the late manoeuvres very good practice was made at targets placed along the line of advance. The cars were fitted with

request of the firm of Paris-Automobile, which, on the eve of the race, had signed a contract for the purchase of the whole production of the Hotchkiss works.

THE Hotchkiss racer has a motor with four steel cylinders and an aluminium water jacket placed around them. It is so constructed that there is no water joint whatever, and therefore no possibility of the water getting into the cylinders. This is the first time that a steel-cylindere motor without water joint has been made, and it is owing to a great extent to the supposed necessity for a water joint that steel has been abandoned by several makers. The crank shaft of the Hotchkiss motor is mounted on ball bearings, which has been found to give great satisfaction and to allow the cylinders to be placed closer together than would be the case if ordinary bearings were used. The motor weighs 270 kilos, or three kilos (a little over 6 lbs. 9 ozs.) per horse-power. The radiator is of the honeycomb type, the valves mechanically actuated, and the carburettor automatic with a throttle. The side frames are of stamped nickel steel. Though exceedingly fast, the Hotchkiss



Prince Ludwig Ferdinand of Bavaria in his Motor-Car.

[Automobil Welt.]

strong pneumatic tyres, and a kind of turret of steel for the protection of the passengers. From inside this turret a Hotchkiss automatic quick-firing gun capable of being pointed in any direction commanded the surrounding country. The car made a very respectable average speed with its 15-h.p. motor.

MUCH has been said and much has been written as to the uselessness of high-speed cars. Such, however, does not seem to be the opinion of the French War Office, for this type of vehicle is specially chosen for the transport of the commanding officers and suitable drivers of them are at a premium, much to the chagrin of the commanders of units, who are now never safe from an unexpected visit of the Commander-in-Chief, who may swoop down on them at any minute at the rate of sixty miles per hour. During the coming autumn manoeuvres the great Fournier himself will be driving one of the best known Generals in the 90-h.p. Hotchkiss racing car. This vehicle was entered for the Paris-Madrid race, and withdrawn at the last moment at the

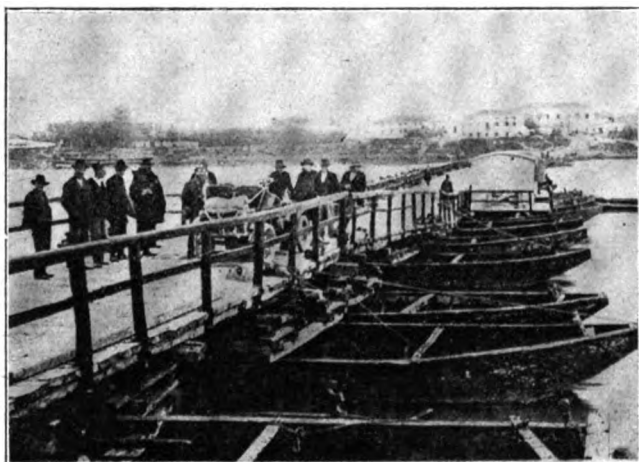
racer runs quietly and smoothly, and is as easy to drive at five miles an hour as it is on its highest speed. Like the Mercedes, it is not a freak of a special racing vehicle, but is eminently suited for touring purposes.

THE Deauville automobile meeting has been abandoned, much to the regret of automobilists as well as visitors to this seaside resort. The fact is that the promenade is not long enough for the racing cars of 1903 to get up speed. It will be remembered that last year at Deauville some marvellous records appeared in the papers, and that later on it was discovered that the time keepers had made a mistake, the records having to be cancelled.

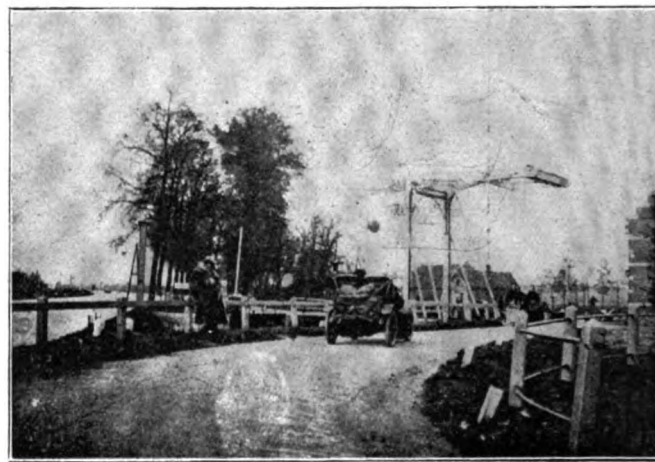
ON the other hand, the hill-climbing competition at Laffrey is to take place on the 9th August. Laffrey Hill is at the foot of the Alps, beyond Grenoble, in the Dauphinais, and is a very difficult ascent, and quite suitable to the requirements of a competition of

this kind. It is about four miles in length, and rises about 650 yards, with an average roundly of 9 per cent. and a maximum of 12.8 per cent., the road being on the rise all the way. In 1901 a 16-h.p. Peugeot held the record of 16 minutes 23 seconds, but in 1902 a 20-h.p. Darracq reduced the time by just ten minutes in bad weather. There are to be four classes, namely, voituresses, light cars, heavy cars, and motor-cycles under 50 kilos in weight (3 qrs. 26 lbs. 4 oz.). In the Tourist section there are three classes, namely, single-cylinder vehicles with two passengers, two-cylinder vehicles with three passengers, and four-cylinder vehicles with four passengers. There is also to be a class for omnibuses carrying fifteen passengers. The entrance fees vary from 20 to 100 francs.

BRUSSELS is suffering from a severe attack of motorphobia, owing to a ridiculous decision of the Courts of Appeal, which have decided that, notwithstanding the law of 1899, the burgo-master can limit the speed of motor-cars in the city. Consequently in certain streets the order has gone forth that automobiles must proceed *au pas*, that is to say, "at a walk," and chauffeurs are wondering what the walking pace of an automobile is. Naturally other towns with motor-hating mayors are



A De Dion Car on the Bridge of Boats over the Po, near Ferrara.



On the Road between Utrecht and Amsterdam.

TOURING SNAPSHOTS.

taking extreme measures, and rendering themselves ridiculous in the eyes of the reasonable public.

ON Sunday last, on the Seine, near Paris, there was a 100 kilometre race for motor-boats. The weather was most unfavourable, the sky being lead coloured and sending down from time to time floods of rain. An unfortunate accident marred the day's proceedings, for the Marsouin, belonging to M. Perignon, took fire whilst making a trial run, and the burning petrol forced the owner and a *mecanicien* to jump overboard to save their lives. The owner was successful, but the *mecanicien* was drowned, and the boat, after burning for more than an hour, sank. There were altogether twenty-three starters, and the best time made was an average of 22 kilometres (13½ miles) by the "Flore," owned by M. Senet and driven by a 24-h.p. Otto engine.

A NEW and novel departure has just been taken by Messrs. De Dion Bouton and Company, who are organising an automobile tour limited to users of De Dion cars and their friends. The tour will last from the 20th to the 30th August, the programme being: August 20th, Rheims; August 21st, Givet; August 22nd, Luxembourg; August 23rd, Treves; August 24th, Coblenz; August 25th, a steamer trip on the Rhine; August 26th, Baden Baden; August 27th and 28th, rest; August 29th, Strasburg; and August 30th, Nancy. A travelling repair shop will accompany the party, so that any slight repair that may be needed may be effected *en route*.

CAPE TOWN, July 8th.
HAVING had a spell of fine weather, the motor trade has been brisk here. Mr. Partridge, a prominent Cape Town lawyer, has obtained a 10-h.p. Lanchester. His previous car was a 4½-h.p. De Dion voituress. The good run made by Mr. Jeppe's 10-h.p. Lanchester, and referred to in my last letter, created a road record between Durban and Pietermaritzburg, accomplishing the distance in 4 hrs. 32 minutes. The fastest mail train time is 4 hrs. The road is simply appalling, and the driver was warned by a number of old residents that he would not be able to get the car through, owing to the awful state of the road. But he got there just the same.

ANOTHER good journey has been made by Mr. Donald Menzies. The car was a 7-h.p. Panhard which has been purchased from Mr. Menzies' firm by a resident of Oudtshoorn, C.C., and Mr. Menzies undertook to drive the car there. The route was via Swellendam and Mossel Bay. Mr. Menzies and the car arrived

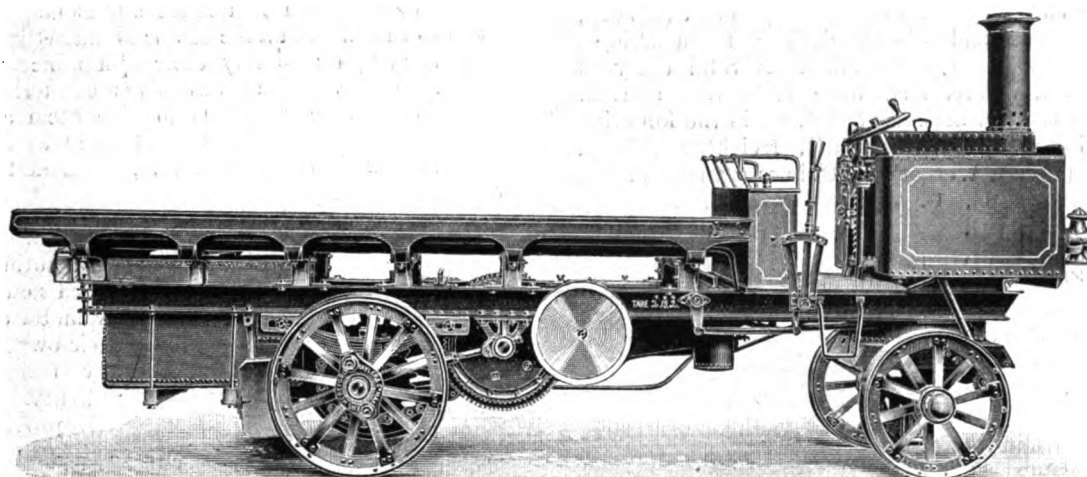
at Oudtshoorn on June 10th, the net running time for the 335 miles being 23 hours.

MR. MENZIES turned up at the Green Point Athletic Grounds last Thursday afternoon in his car, and although cabs, &c., were passing through the gates without let or hindrance by the police, the motor was refused admittance until Mr. Menzies had interviewed the ground authorities, who reluctantly allowed him to take his car in on payment of 2s. 6d. Other motorists received equally bad treatment.

THE 22-h.p. Daimler which was imported by Mr. Abe Bailey has changed hands, and is now the property of Dr. Jameson.

THE largest elevator in South Africa is that in Garlick's Motor Garage, Fish Lane, Cape Town. It is worked by a 14-h.p. 440 volt motor, and is capable of elevating 7,000 lbs.—3½ Cape tons. Messrs. Garlick expect their 24-h.p. Darracq here next week. This is for Mr. John Garlick's private use. He intends to make use of it during the forthcoming electioneering campaign by touring the Western Province of the Cape Colony. Two of the new Ramblers which this firm have on the water have already been sold, one to Mr. Frank Duffett, and one to Mr. J. Freeman, both of Cape Town. The joint managers of Garlick's Motor and Cycle Supply are Mr. H. Leslie Jenkins and Mr. Wm. M. Jenkins. The latter is practically the pioneer of the motor trade out here, since it was he who first started importing automobiles on a scale worth mentioning.

The "Naylor" Steam Wagon.



THE number of steam wagon builders in the country is steadily increasing; the latest addition to the list is Messrs. Naylor and Co., Limited, of Hereford, whose vehicle is illustrated herewith. The frame is constructed of heavy sectional steel channels, strongly braced together, with transverse T iron gussets and angles, rivetted up with great care, all the rivet holes being drilled. The boiler, which is made to pass the Vulcan Boiler Insurance Company's rules, is of the improved vertical fire-tube type, and is made easily accessible for cleaning purposes. It is fitted with fire box, smoke box, double funnel, patent water gauge, double safety valves, feed pump, injector, and special water lifter coupled to an indiarubber hose with strainer for filling tank as required. The working pressure is 200 lbs. per square inch. The engine is of the compound horizontal reversing type, the cylinders being $3\frac{1}{2}$ in. and $6\frac{1}{2}$ in. diameter by 6 in. stroke, fitted with link motion, and enclosed in a sheet iron casing. The normal speed is 400 revolutions per minute. The cylinders are lagged with non-conducting material, covered with blue steel. The lubrication is arranged on an improved system. Facilities are afforded for obtaining easy access to the working parts of the engine. Two speeds are provided, giving two and six miles per hour. The engine crank shaft is extended in square section, with a double pinion fitted on; this is thrown in and out of gear by a lever working in a quadrant, and as it is impossible to change the gears without stopping the vehicle, an important factor of safety is introduced. These pinions mesh with gear wheels, mounted on the second motion shaft, which runs in long gun metal bearings, bolted to the channel framing, and upon which a chain pinion is fitted. By means of a special chain, capable of standing a working strain of 20 tons, the power is transmitted from the second-motion shaft to the driving axle, which rotates in axle boxes fitted with gun metal bearings. Special radius rods, with lock nuts, are fitted for keeping the chain in the correct adjustment. The back axle, being the driving axle, is made of best mild steel; it is of large diameter, and fitted with a strong set of differential gearing. The axle is coupled up to the road wheels by special bolts and nuts in long gun metal bearings suitably fitted to the axle boxes and secured to the spring. An ingenious arrangement is fitted for locking the differential gearing when necessity occurs. The front axle, of mild steel, has a central turning pivot, thus making a three-point support. The rear road wheels are of the traction engine type, 3 ft.

diameter by 7 in. wide; the front wheels are 2 ft. 6 in. diameter by 5 in. wide. As regards brake power, the link motion can be employed to act as a strong brake and will stop the vehicle under ordinary conditions. A double shoe brake, worked from the driver's seat, and bearing on the tyres of each back wheel, is also provided. A double bunker is arranged in the front part of the vehicle, capable of carrying sufficient fuel for an ordinary day's work. The water tank, of 140 gallons capacity, is secured to the back of the frame, and will carry enough water for 10 to 12 miles without refilling; it is fitted with an improved filter, so that all water is cleansed, thereby considerably increasing the life of the boiler. The standard vehicle, which is constructed to carry a net load of 5 tons, and, with a trailer, an additional 2 tons, is fitted with a lorry or level platform, having a superficial area of 78 square feet, available for carrying goods, and capable of being slightly exceeded. The length is 12 ft. and the width 6 ft. 6 in. Any type of body can, of course, be adapted.

THE junction of the Belfast and Newtownards roads in Abbey Street, Bangor, Co. Down, is regarded as a dangerous spot, and there on Saturday a collision occurred between a motor-car driven by Mr. H. Barbour, of Lisburn, and a jaunting car. The passengers of the latter were severely shaken and the horse was killed.

THE Hozier Engineering Co., Limited, have sent us a photograph of a four-cylinder 16-h.p. "Argyll" car, made to the order of Mr. E. E. Pearson, Brickendonbury, Hertford. The first of this new type was produced in time to compete in the Glasgow to London non-stop trial, through which it went without losing a single mark. The gearing and axle are of the same design as used in the 10-h.p. car, but all parts are strengthened to transmit the increased h.p. The wheel base is 7ft. 6in., and the total weight of the car 16 cwt.

At the Volunteer camp at Gales (Ayrshire) last week the motor-car was found a useful adjunct to the conveyance arrangements. On Wednesday, Mr. R. J. Smith took his car and drove General Sir Arch. Hunter and his staff on his inspection of a sham-fight in which the Highland Light Infantry were engaged. Mr. Thos. M. Macintyre drove them the following day, when similar manoeuvres were undertaken by the Argyll and Sutherland Brigade, and sent his car for the use of Brigadier Rutherford and his officers on several other occasions.

MOTOR-CYCLING NEWS.

On Saturday last the Motor-Cycling Club held the second of the series of 200-mile reliability trials. The route was the same as that taken on the occasion of the first trial. It was divided into three stages, stage one being from Hatfield to Stony Stratford and back, thence on to Hitchin and back to Hatfield, 100½ miles. Stage two, Hatfield to Berkhamstead and back, 51 miles. Stage three, Hatfield to Hertford, thence to Puckeridge, Royston and back to Hatfield, 50 miles. A total entry of twenty-two competitors was received, but only thirteen started. Those that survived the test arrived at Hatfield in the following order:—A. S. Wilson (2½-h.p. Ormonde), Heighton (2½-h.p. Vinco), H. Fairfax (2½-h.p. Werner), B. Holmes (2½-h.p. Vinco), Crundall (2½-h.p. Humber), E. Johnson (2½-h.p. Humber), Watkins (2½-h.p. Excelsior), Clark (2½-h.p. Werner), Cowles (2-h.p. Stockwell). With the exception of Crundall and Johnson all the above made non-stop runs. Watkins, however, missed the right road, and although the distance he covered was greater than the schedule, the question as to whether his ride shall be accepted has to be decided by the committee.

THE Motor-Cycling Club is organising a couple of interesting events for September 12th. The first is a 50-mile non-stop run for motor-bicycles open to members of the Club, while the second is a 100-mile non-stop run for motor-bicycles with fore and side carriages, and trailers, and motor tandem bicycles, each machine to carry the driver and a passenger.

A MOTOR-CYCLE club has just been formed at Frankfurt-am-Main, Germany, with the title Frankfurter Motorrad Club.

THE Southampton County Motor Club is about to organise a 100-mile reliability trial. A handsome silver vase, which has been presented to the club by Messrs. Humber, Limited, will be awarded to the winner.

A NUMBER of motor-cycles are to be experimentally tried in the forthcoming military manoeuvres in Austria.

THE Rex Motor Manufacturing Company are offering a prize of a 3-h.p. motor-bicycle to the rider of a Rex who travels the greatest number of miles during the months of August and September.

THE hill-climbing competition up Mont-Cenis was vetoed by the Italian authorities as far as motor-cars are concerned, but was sanctioned for motor-cycles, and took place last Sunday. There were two classes, namely, racers and tourists, and a large number of entries in both classes. The climb must have been exceedingly stiff, for out of fifty-four starters for the tourist

section only twenty-six reached the winning-post. The course was 23 kilometres long, and the average gradient 1 in 8½. Maffei on a Sarolea (Kerry) machine won the racing class under 50 kilogs., his time being 32 m. 40 sec., equal to 26 miles per hour. Lion on a Turckheimer was first in the racing class over 50 kilogs. (time, 38 m. 47 sec.).

It is reported that an endeavour is being made to spread a report to the effect that the Motor Manufacturing Company, Ltd., have their engines, notably their 2½-h.p. bicycle motors, made in France. Such a statement as this is calculated to injure their reputation, and they ask us to give them an opportunity of stating most emphatically that all their engines, including the well-known 2½-h.p. bicycle motors, are made throughout at their works in Coventry.



Oreste Simonotti on the 2-h.p. Rosselli Motor-Bicycle on which he recently made a 1,600-mile Tour of Italy.

THE German State Railway authorities have lately issued new regulations whereby motor-cycles in charge of their owners can be sent by any train as luggage at ordinary luggage rates, the only proviso being that the fuel tank must be emptied before the machine is given in charge of the railway officials.

THE Clyde Cycle and Motor-Car Company, Limited, have sent us a copy of a new catalogue they have just issued of their "Clyde" motor-bicycles. The list is more than an ordinary catalogue; it is practically a handbook giving full instructions as to the working and manipulation of motor-cycles, one of the useful chapters being that devoted to the magneto ignition fitted on the "Clyde" machines.

AN Austrian motor-cyclist has just made the journey from Vienna to Paris on a Puch motor-bicycle.

A CIRCUIT DE L'HERAULT, reserved for motor-cycles, is to be run off on the 10th inst. The start is to take place at 4 a.m. at Montpellier, the course being from that town to Gignac, Clermont Adge, Meze, Montpellier, and Palavas-les-Hots, a distance of 142 kilometres.

WITH reference to Lord Balfour's suggestion that motor-car lamps should be lessened in size and number, Messrs. Salsbury and Son write:—"The only objection that can be made to the lamps at present used on motor-cars is their glare when seen by persons approaching them, and this would be entirely obviated if motorists would have shades fitted to the large acetylene lamps such as we make, which would have the effect of throwing the light upon the road, where in reality it is most required. Besides this shade we have now fitted an adjustable burner to our acetylene lamps, by means of which the flame can be regulated from the largest size to extinction when travelling through towns, and these two things we contend would meet all purposes."

HERE AND THERE.

A MOTOR LAUNCH has been built at Greenock for Mr. J. C. McKellar, of Glasgow.

THE Wolseley Company have just supplied a 20-h.p. car to the Duke of Devonshire.

THE Avon Motor Manufacturing Co., Ltd., has been registered with a capital of £10,000.

TO-DAY (Saturday) the members of the Kent Automobile Club will hold a run to Folkestone.

It is proposed to provide the police and fire departments of St. Louis with motor-cars to be used during the St. Louis International Exhibition.

FOR giving an incorrect name and address, a motor-car driver, named David Edwards, of Beckenham, has been fined £2 10s. by the St. Neot's magistrates.

MR. F. M. WILLIAMS, of Pasadena, California, has started on an Oldsmobile on an attempt to make the transcontinental journey from San Francisco to New York.

THE Morse Chain Co., of Trumansburg, N.Y., U.S.A., have sent us a copy of the catalogue of their high-speed silent running chains as used on the Haynes-Apperson motor-cars.

THE Co. Kildare Agricultural and Technical Instruction Committee has sanctioned a travelling scale arrangement of 2d. per mile to its horticultural instructor, who employs a motor-bicycle in his travels.

SOME confusion having arisen as to the Lanchester car and the Lancaster Motor Garage, we are requested to state that the Lanchester Engine Company, Limited, and the Lancaster Motor Garage are in no way connected with each other.

THE Scottish Motor Manufacturers and Traders' Association executive are considering questions relating to drivers and wages, terms for learners, repairs in workshop and at a distance, guarantee, etc. Mr. T. M. Sleight is the Secretary of the Association.

A CHICAGO motorist was recently stranded with his car in the desert of Utah owing to his supply of petrol being exhausted. Leaving his companion to guard the car, he had to walk twenty-two miles to the nearest railway station to get a fresh supply of spirit.

MONMOUTH, Abergavenny, Usk and Tintern are to be visited by the Cheltenham and Gloucester Automobile Club to-day (Saturday), and on Bank Holiday. A general meeting of the Club will be held on Tuesday next at the Queen's Hotel, Cheltenham.

THE Brailes, Shipston-on-Stour and Stratford-on-Avon Steam Omnibus Company, Limited, has been registered with a capital of £2,000 to acquire and deal in vehicles drawn by mechanical means or otherwise. The registered office is at Church Street, Shipston-on-Stour.

A SPECIAL meeting of the Council of the Central and Associated Chambers of Agriculture was held in London last week, when Mr. Baldwin Latham moved a resolution declaring that any Bill regulating the motor-car traffic could not be accepted as satisfactory unless the maximum speed limit be universally defined, and contended that the Bill which had been introduced into the House of Lords did not go far enough. This was adopted by the meeting.

THE British Consul at Rome, in his recently issued report, remarks that motor-cars are superseding the ordinary means of conveyance in the Italian capital. The only difficulty which seems to retard the general adoption of this more modern and expeditious system of locomotion is the high price of the machines. Up to the present motor-cars have been mainly supplied by France, Belgium, and Germany; but if a fairly good British car could be placed on the market, costing not more than what is now paid for the same article originating from the above countries, a permanent market might be secured.

AN automobile club has been formed at Salt Lake City, Utah.

THE Eastbourne Corporation is experimenting with a motor water cart.

SOME trials with a Durkopp car are being made by the post-office authorities at Bielefeld, Germany.

AN attractive picture poster has been issued by the Motor Manufacturing Co., Limited, which should find a permanent place on garage walls throughout the country.

THE Wolverhampton and District Automobile Club will hold a run to Shrewsbury to-day (Saturday). Some of the members will spend the week-end at Llangollen.

THE Pirrie-Iveagh motor transit scheme is now being seriously put in hand, and three commissioners are travelling in Ireland considering the suitability of certain districts for motor-car services, particularly for goods traffic.

LAST week the Duke of Atholl and the Marquis of Tullibardine arrived at Chapel-en-le-Frith and were the guests for the night of Mr. Bagshawe, J.P., D.L., at Ford Hall. They travelled by motor-car, and left the day after for Perth.

MR. EDGAR SMITH, of Halifax, has removed his garage to premises on the opposite side of Northgate to those which he has previously occupied. Accommodation is now available for twenty cars and every facility provided for the execution of repairs.



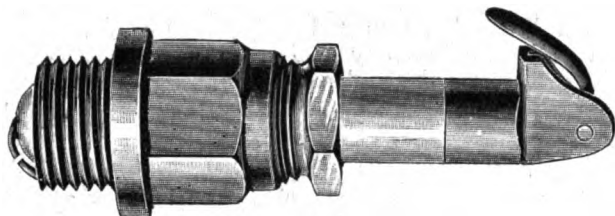
The Electric Brougham supplied by the City and Suburban Electric Carriage Company to the Prince of Wales.

MR. H. N. WATSON, of the North Road Motor and Accessories Agency, Tuxford, Notts, now supplies Pratt's motor spirit. His place is on the Great North Road, so that motorists in the district need not turn from the direct road in obtaining replenishment of petrol.

"ACROSS Sumatra in a Motor-Car" is the title of an interesting article in the current number of the "Wide-World Magazine." The alarm of the natives was natural, but the car brought the travellers safely through, and added another testimonial to the value of the automobile in otherwise inaccessible districts.

FROM a British Columbia journal we learn that among the contestants in the Gordon Bennett race was R. Deknyff, and that "in outline the course somewhat resembles a map of Africa, traversely divided into two parts, which are known as the major and the minor loop. At 7 o'clock to a second, Jorlloyd, the starter, fired a pistol, Edge pressed the lever of his car, and the vehicle sprang forward and the race began amid cheers." A telegram reaching our Colonial contemporary at 5.13 p.m. on the day of the race was recorded as follows: "A special dispatch from Ballyshannon says that Genatzky's and Gabriel's cars collided at Maryborough and that several persons were injured." The finish is thus summed up. "Deknyff finished first at 5.34 p.m., and Genatzky second at 5.36 p.m. Fairman also finished."

HEREWITH we illustrate a new sparking plug which has been put on the market by the Pyrokrat Electrical Company, of Farm Street, Birmingham. The feature of the "Pyro" plug, as it is known, is the special arrangement provided to enable the ignition wire to be easily connected and disconnected. As will be seen, instead of the connection being made by a nut, a spring clip is used to attach the wire; the lever is simply raised, the ends of the wire inserted and the lever depressed. The plug is supplied with



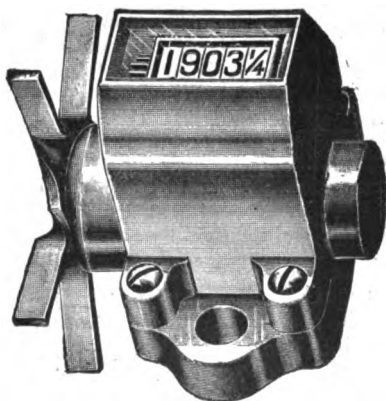
either porcelain or mica body; each have their advantages and disadvantages; mica, of course, will not break or crack, but is more liable than porcelain to short circuit. Porcelain is a better non-conductor; it can be taken out, cleaned, and replaced, but if broken it must be replaced by a new one. An alternative form of the "Pyro" plug is also being put on the market in which a neat spark intensifier is incorporated.

AMONG other subjects discussed at the conference of Scottish Road Surveyors, held in Dumfries, was the effect of motor-car traffic on roads. This traffic, it was generally said, was more injurious than that of the ordinary vehicles.

THE tyres of the Duke of Connaught's motor-car were punctured the other morning, the mischief being discovered too late to enable him to reach a review in Phoenix Park, Dublin, by his own car. Mr. M. T. Woods, of Newbridge, however, placed his new Darracq at the disposal of His Royal Highness, who reached Dublin in good time.

THE handy Hotel Guide comes to us in a convenient form from the Hotel and General Advertising Co., Ltd. A new feature has been introduced, particulars being given of accommodation for motor-cars at the leading hotels in the country. A casual glance reveals the fact that hotel proprietors are rightly recognising the part motorists are certain to play in their future prosperity.

THE Veeder Co. have lately brought out a new pattern of their well-known cyclometers or odometers for use on large motor-cars. The instrument, as will be seen from the accompanying full size illustration, is small and neat; it is easily fitted to almost any kind of under carriage, and when once fitted requires no further attention or trouble, doing its work quietly and regularly, and recording the mileage by quarters covered until



10,000 miles are reached, when it will reset itself back to zero. Since the farther the odometer is placed from the axle the harder will be the blow given by the striking roll, it is desirable that the centre of the odometer be not more than 2 inches from the centre of the axle, and should in no case be more than 2 1-2 inches. The instrument is being introduced into this country by Messrs. Markt and Co.

A PUBLIC motor-car service has just been started between Havre and Etretat.

L'AUTOMOBILE CLUB JURASSIEN has just been formed at Lons-le-Saunier, France.

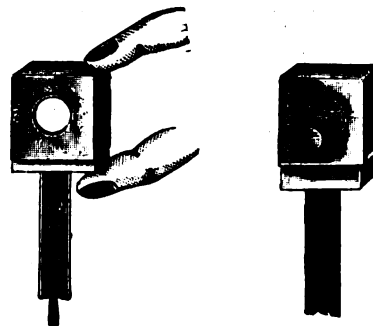
THE Wurttemberg Automobile Club held a dinner on the 21st ult. in celebration of the victory of Germany in the Gordon Bennett Cup race.

THE Rhodesian Department of Agriculture has offered a prize of £1,000 for the best motor plough, and a competition will be arranged for the purpose.

THE Leeds Corporation Tramways Department have purchased a 12-h.p. Clement car through the local agents, the Northern Motor Co., for the use of their tramway inspector and manager.

AT Dublin Police Court Mr. Richard O'Callaghan, of Swords, has been remanded on bail on a charge of causing the death of a boy cyclist in Phoenix Park, Dublin, by knocking him down with a motor-car.

THE Eclipse Motor and Cycle Company, of John Bright Street, Birmingham, have recently introduced the ingenious terminal clip for connecting the ignition wires to accumulators, coils, and sparking plugs, illustrated herewith. The clip can be attached or removed in a second, and cannot work loose through vibration like the ordinary nut or screw fastening. To fix the terminal to the clip the wire should be passed through the two



holes provided in the shank, and doubled over, a little insulation tape being then wrapped over the shank. The end of the clip which fits on the plug or terminal is made of two parts, one sliding within the other, with a spring action. When the ends are pressed together, as shown herewith, the holes in the two parts coincide with each other, allowing the clip to be fixed on the rod of the plug or battery terminal. On releasing the pressure, the two parts tend, owing to the spring, to separate, so pinching the rod firmly and making a connection which cannot work loose.

At the Doncaster West Riding Police Court, Walter Crabtree, surveyor to the Doncaster Rural District Council, has been fined 20s., including costs, for obstructing the road at Conisbro' by placing a quantity of stone there which was required for the roads.

THE British Motor Fittings Co., of John Bright Street, Birmingham, have sent us copies of a series of circulars they have issued illustrating their 7 and 10-h.p. double-cylinder petrol motors, change-speed gears, pumps, live axles, steering gears, and other motor-car parts.

THE West Ham coroner has held an inquiry into the death of James Adams, of Larch Road, Cricklewood, who was thrown from a motor-cycle on the Memorial Sports Ground, Canning Town. Adams was trying a motor-cycle which had won a speed trial in Ireland. On the third lap he lost control at a corner and was thrown up the slope and hurled against the fence. Mr. Arthur Goodwin, of the Ormonde Company, put the pace up to sixty-five miles an hour. Nominally the machine was of 3 1/2-h.p., but at 2,000 revolutions it would be 4-h.p. The jury found death to be accidental.

CORRESPONDENCE.

THE HORSE POWER OF PETROL MOTORS.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—As you ask for opinions on the above subject, may we say we think you do well in bringing it forward? The matter certainly *does* require putting on a uniform basis, for, as things are at present, they are not only very puzzling but most misleading to the public who purchase cars. As you say, it is the custom of most reputable firms to denominate their motors either well within their maximum powers—i.e., “all out” both as to speed and ignition—or to call them whatever they give on the brake at their normal, or governed, speed, which comes to the same thing, as, with the governor out of action, they will usually develop much more. On the other hand, other firms do just the reverse and designate their motors either by purely arbitrary figures or by the brake horse-power developed for a few minutes under conditions and speeds which practically never obtain in actual use upon a car. It is an undoubted fact that a large number of buyers are unable to appreciate the real point at issue and purchase their cars almost entirely upon “listed” horse-power, taking much more kindly, for instance, to a single-cylinder car of a nominal 8—which, perhaps, much more nearly reaches 5 in actual practice—than to a substantial two-cylinder 6, which will perhaps touch 9 on being pushed, and will pay as high or a higher price for it.

If the public were more thoroughly *au fait* with motor matters these sharp practices—for they are nothing less—would soon cease to be carried on, as, in the long run, they defeat their own ends, although where “present sales” are the only point in view they are only too successful. In our estimation the only sound principle is to denominate the motor according to its showing on the brake at its normal—or, in the case of governed motors, governed—speed rate, and this speed rate should be stated. In our practice we guarantee every motor to give a full and absolute 10-h.p. upon the brake at 700 revolutions, under ordinary conditions of running, and that we do get the power we claim, whereas others apparently do not—unless a much larger proportion of their power is absorbed in their transmission gear—is, we think, amply proved by the relative performance of our car with others in the Phoenix Park speed trials and Castlewellan hill tests. Were it not for the difficulty of testing, we should sell our cars on the *horse-power delivered at the wheels*, which we believe to be the only true system; for, after all, the automobilist is not buying an engine, but a car complete, and it is horse-power at the wheels he wants, when all is said and done.—Yours truly,

THE DURYEA MOTOR-CARRIAGE COMPANY.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—We have read with great interest your article on the horse-power of petrol motors. We certainly think it would be more satisfactory for the public if manufacturers would agree to some standard. We ourselves test our engines in what we consider a most satisfactory way. We consider that brake horse-power is the only test worth having, so we make this test at the normal number of revolutions of the engine, e.g., in the case of our four-cylinder 10-h.p. engine, at 1,000 revolutions per minute. Now the brake horse-power of this comes out between 16 and 17-h.p., and it must be borne in mind that the engine is perfectly new, never having been run before. Undoubtedly if one of these engines were removed from the car after two months' use a considerable increase in brake horse-power would be registered. Although we take the normal speed, it must be understood that there is still a margin for extra power, as our engines will run up to well over 1,200 revolutions per minute.—Yours truly,

THE STAR ENGINEERING COMPANY.

SECOND-HAND CARS.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—May I call the attention of buyers to the fact that cars are advertised that are very far from the statements made in the advertisement. Having been put to a lot of expense for an expert and travelling expenses, I advise buyers to have an undertaking that these expenses should be met by the advertiser if the car is not in accordance with the particulars given.—Yours truly,

CAMDEN.

THROWING STICKS AT CARS.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—Our client, Mr. R. F. Dickerson, was summoned for driving a motor-car in excess of the regulation speed, and a policeman having sworn that, according to his estimate, he was going between forty and fifty miles an hour, he was fined £10 and costs. We wish to give the facts relating to another part of the case.

An elderly man named Mr. Robinson was standing on the pavement when the motor-car went by, and threw a stick at our client with great force. Fortunately it missed Mr. Dickerson, or it might have seriously injured him, but it struck the back of the car so violently that the stick broke in two and damage was done to the car which will cost £5 to repair. We applied for a summons for assault, but Mr. Curtis

Bennett did not think it was an assault to throw a stick at a motor-car driver, but ultimately consented to grant a summons for the damage to the car. When the summons came on for hearing Robinson admitted throwing the stick, and practically admitted the damage, but swore that he did it in the public interest in order to stop the motor-car, and Mr. Curtis Bennett decided that it was not done wilfully with intent to damage the car, and the result of this decision is that anyone may throw anything he likes at a motor-car driver.—Yours truly,

GREVILLE AND CO.

A RUN TO THE LAKES.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—Below I am sending you particulars of a most enjoyable trip up to the Lake District, which I, in company with my wife and Mrs. E. W. Cathie, have just taken. Of course we had a fair amount of luggage. My car is an 8-h.p. M.M.C., and I had never before dreamed it would be possible for a car with single cylinder engine to do what this one has done.

					Miles.
June 12th.	Dover to London ...	...	...	...	89
" 16th.	Smethwick ...	...	...	...	119
" 18th.	Stafford ...	...	...	...	40
" 19th.	Southport ...	...	...	...	98
" 20th to 28th.	Round about Southport ...	...	...	...	100
" 29th.	Kendal ...	...	...	...	81
" 30th.	Ambleside to Keswick (circular tour) ...	...	...	...	38
July 2nd.	Windermere from Ambleside ...	...	...	...	14
" 3rd.	Windermere Lake, Hawkshead, Conistown, Ambleside ...	...	...	...	28
" 4th.	Waterhead ...	...	...	...	2
" 5th.	Windermere ...	...	...	...	12
" 6th.	Patterdale, Ullswater, via Kirkstone Pass ...	...	...	...	32
" 7th.	Barrow-in-Furness, Conistown, Ambleside (tour) ...	...	...	...	72
" 8th.	Grassmere ...	...	...	...	14
" 9th.	Arnside (circular trip) ...	...	...	...	55
" 9th.	Waterhead ...	...	...	...	2
" 10th.	Waterhead ...	...	...	...	2
" 11th.	Carlisle ...	...	...	...	73
" 12th.	Gretna Green, Longtown, Edinburgh ...	...	...	...	101
" 13th.	Berwick ...	...	...	...	58
" 14th.	Belford ...	...	...	...	16½
" 15th.	Durham and Sunderland ...	...	...	...	75
" 16th.	Doncaster ...	...	...	...	130
" 19th.	London ...	...	...	...	164
					1,415½

I have been most careful to keep a strict record of the petrol, etc. used, and the following is a list of my expenses on the road in respect of the car. Petrol, 44 gallons, or 32.16 miles to the gallon; oil, 2 gallons; accumulators charged twice; 2 lbs. grease; one inlet valve stem; one pin in timing gear.

I am sure you will agree with me that the running cost is exceedingly reasonable, especially as some of the hills round the lakes had gradients of 1 in 6, and 1 in 7.—Yours faithfully,

CECIL G. CATHIE.

THE IRISH FORTNIGHT.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—I notice in the report of the Killorglin Trials that it is stated that I did not run the 20-h.p. Humber car in the final, as it was not in running order. I should like briefly to point out the facts of the case. After running the first heat I was told that another car had done faster time than mine, and that it would not, therefore, be necessary for me to run again. Consequently I started to make an adjustment to one of the inlet valves which I thought had been sticking slightly. Just after I had started to do this I was told that a mistake had been made, and my car was the one which should have run in the second heat. Needless to say I was unable to do so, with the result that another car was sent up the hill. Had no mistake occurred as to which car had done the fastest time in the Tourist class, I should have been able to run in this, when doubtless I should again have shown the fastest time for touring cars.—Yours faithfully,

J. W. CROSS.

CLUB NEWS.

SHEFFIELD AND DISTRICT.

A SPECIAL general meeting of the members of this club was held at the Wharfedale Hotel, Sheffield. Mr. Horace Cawood occupied the chair, and the others present included Messrs. H. Cooper, B. Hind, C. Harlow, J. Ellis, W. H. Brown, Percy Thompson, S. Walling, W. Coldwell, James Barber, J. Walker, H. E. Mallinder, G. D. Flather, J. T. Thompson, F. B. Cawood, and W. Gilder. Mr. B. H. Foster wrote resigning the

presidency of the club, but a resolution was passed asking him to reconsider the matter. Mr. J. R. Wade tendered his resignation of the office of secretary, which was accepted with regret, and a hearty vote of thanks was accorded to him for his past services. Mr. F. B. Cawood was elected the new hon. secretary. Medals and cups were presented to the winners of the recent hill-climbing competition—Mr. Cooper for the car part of the contest, and Mr. W. H. Brown for the cycle section. A design for a badge was adopted. It was decided not to affiliate with the Automobile Club of Great Britain and Ireland. The Motor-Car Bill was discussed, and a resolution objecting to the licensing of private drivers was carried.

LINCOLNSHIRE.

A VERY successful meet of the Lincolnshire Automobile Club has been held at Asgarby Hall, the club having been invited there by Mr. G. Godson. Among those present were Mr. C. W. Pennell, Lincoln, on a 12-h.p. Richardson; Mr. W. R. Pennell, Lincoln, Locomobile; Mr. J. M. Goy, Lincoln, Baby Peugeot; Dr. Benson, Pick; Mr. G. Linnell, Deeping, 10-h.p. Wolseley; Mr. J. H. Carter, Mr. S. Gilbert, Billingham, and Mr. S. W. Ayre, motor-bicycles; Mr. E. Cragg, hon. secretary, and Mrs. Cragg, Enfield quad; Mr. R. M. Wright, Lincoln, 10-h.p. Lanchester; Mr. J. Coombes, Lincoln, 9-h.p. De Dion; Mr. C. Nelson, hon. solicitor, De Dion; and Mr. J. Richardson, Lincoln, 12-h.p. Richardson. The weather was fine, and there was a pleasurable absence of dust. Tea was partaken of on the lawn, and some fifty friends were present to meet the club. The gathering was even more popular and successful than on the visit of the club to Mr. Godson's last year.

THE club has also had a run to Beechfield, Grimsby, on the invitation of Major Errington Josse. Major Josse is an enthusiastic motorist, the owner of a Bardon car, and the programme embraced a visit in the first instance to their host's residence in Augusta Street, Grimsby, where the cars commenced to arrive soon after noon. An hour later luncheon was

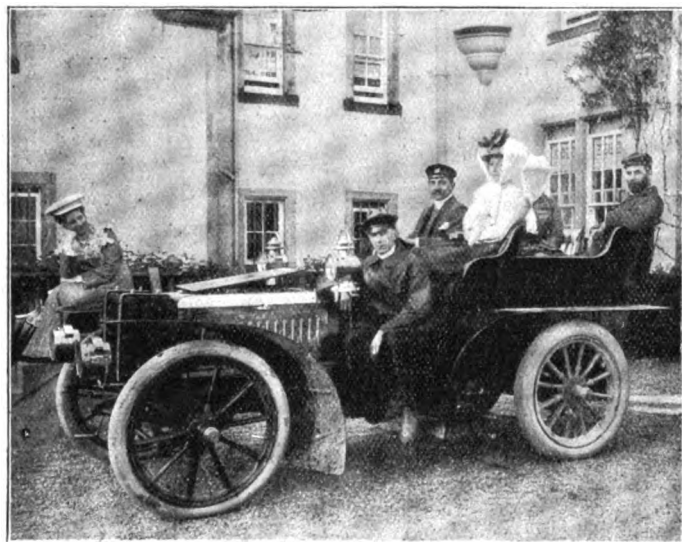


Photo by) [Mr. H. Prosser on his 24-h.p. De Dietrich Car. (Mr. Archd. Stevenson

served at the Royal Hotel. As the cars were driven down to the hotel, via Victoria Street, they created no little excitement, the ease with which they were steered between the traffic being very noticeable. The Major's guests alighted at the front entrance to the hotel, and the cars were then marshalled at the rear. The thanks of the guests were voiced by Messrs. Cragg and Jevon and duly acknowledged by the host.

YORKSHIRE.

THE Committee of the Yorkshire Club have made arrangements for the East Coast Camp recently referred to in our columns, and although the definite location of the camp was late in being decided, it will be between Scarborough and Bridlington, and directly on the coast. Tents will be erected and ready for occupation to-day (Saturday), and dinner will be served at 7 p.m. Breakfast, lunch, and dinner will be served each day, and afternoon tea may be ordered if required. It is proposed to break up the camp on Wednesday next after lunch. Sleeping accommodation is provided in bell tents, and only four in one tent. Palliasses and blankets will be supplied. Members wishing to take their wives may have a special tent reserved for their use. The cost of the trip, including meals and tents, will be, approximately, £3 10s. each.

KENT.

THE members of the Kent Automobile Club had a most delightful picnic on Saturday last at Hothfield Common, the weather being very favourable. The meet was largely attended by members and their friends. The thanks of the club are due to Mr. Langley, the master of Charing Union, who kindly allowed the members of the club to leave their cars in his grounds. On August 8th, Mr. and Mrs. Bernard Arnold

are kindly entertaining the members and their friends to a picnic tea on their island in the Medway at Snoll Hatch, East Peckham, Kent.

LEICESTERSHIRE.

M^{RS} MEMBERS of the Leicestershire Automobile Club had an enjoyable run to Matlock Bath and back on Saturday. A start was made from the Bell Hotel, Leicester, at 10 30 a.m., and the journey lay through Mountsorrel, Quorn, Loughborough, Hathern, Kegworth, Shardlow, Elvaston, Derby, Ambergate, and Cromford. Matlock was reached in time for lunch, which was partaken of at the new Bath Hotel, twenty-four sitting down. The fine weather continued throughout the afternoon, and much pleasure was derived from a stroll about Matlock. Tea was provided at the Bath Hotel at five o'clock. During the visit the party struck a motoring attitude, in which they were photographed by a local artist. The return run was commenced at 6.30, and was safely accomplished without any breakdown. The party consisted of Mr. Mawbey (president) and Mrs. Mawbey, Mr. H. King, (vice-president) and Mrs. King, Mr. Maurice and Miss Mawbey, Mr. and Mrs. Harding and family, Dr. Corcoran (Loughborough), Mrs. and Miss McAlpin, Mr. R. E. Parker, Mr. and Mrs. Peberdy, Mr. Binns, Mr. A. McAlpin, hon. secretary, and others.

WOLVERHAMPTON.

ABOUT twenty members of the Wolverhampton and District Automobile Club have met at their clubroom for the purpose of making a presentation to Mr. Trevor Young upon the occasion of his marriage with Miss Lillian Davies. Mr. S. R. Rhodes, the hon. secretary, after referring to Mr. Young being one of the founders of the Club and to his having very materially assisted in its prosperity, and to his devotion to the pastime of motoring, expressed pleasure in asking him to accept from the members a solid silver cigar and cigarette cabinet, bearing the Club's badge and suitably inscribed, and also in presenting to his bride a silver-mounted mirror as a slight acknowledgment of the services he had rendered to the Club, and as an expression of the Club's goodwill toward him. Mr. Young, in accepting the gifts, said words could not adequately express his feelings at the generous manner in which the presentation had been made, but he could assure the Club that both he and his bride would prize most highly the presents. His connection with the Club had been of the most pleasant character, and he fully appreciated the kindly feelings which had been expressed toward him. After the presentation, although the hour was late, the members drove to Albrighton.

CLAIM FOR DAMAGES.

IN the Glasgow Court of Session, the Lord President and a jury tried the action in which Archibald Paterson, Glasgow, sued William Beardmore, Parkhead Rolling Mills, Glasgow, for £500 damages, in respect of bodily injuries received by the pursuer's son, Thomas Stewart Paterson, six years of age, who, on the afternoon of Friday, January 24th, 1902, was knocked down by a motor-car belonging to the defendant and driven by his servant. The pursuer averred that the car was being driven at a dangerous rate of speed, that the driver did not have it within his control, and that he was not keeping a lookout, and gave no warning. The defender denied that his servant was at fault. The jury found for the pursuer, and assessed the damages at £300.

ASSAULT ON A MOTORIST.

WE recently gave publicity to an assault on Mr. F. Morris, which he duly reported to the Norfolk Automobile Club, and they in their turn referred the case to the Motor Union. The Motor Union, regarding the matter of considerable importance, undertook to bear the cost of the prosecution, and placed the matter in the hands of Messrs. Mills and Reeve, solicitors, of Norwich. The case was heard at Downham Market Petty Sessions, when the defendant was fined 36s. inclusive, or, in default, a month's imprisonment.

POLICE TRAPS.

DURHAM DOWNS, Bristol, are now being watched by the police, who are especially in quest of motor-cyclists passing that way.

ALL motorists going into Southamptton should look out for a police trap in the Avenue, about two miles from the Bargate. There is also another on the road to the New Forest, close to Millbrook Station, two miles to the west of the town, and another between the top of Hunter's Hill and Lyndhurst Road Station. There are no police actually on the hill, time being taken from first sight of car by a man near the station. Would it not be well for all motorists (writes a "victim" who sends this information), after discovering a trap, to give information at their next stopping place, and also enquire as to traps in the direction they are travelling.

THERE is a new police trap in the middle of the village of Aston Clinton, midway between Tring and Aylesbury, and four miles from either town. It worked the first time on Sunday week, the editor of a motoring contemporary being the pioneer victim.

THE police in the Windsor district are laying traps in many hitherto unsuspected places. Among the measured distances that have proved expensive to motorists lately are pieces of road near Sir Daniel Gooch's place at Clewer Park.

ON race days at Salisbury the police have measured distances near Wallop, on the main road leading from Andover to Salisbury.

FURIOUS DRIVING CASES. MOTOR-CARS.

COUNT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Oxford	T. Morris	20	£1, etc.
"	E. Orchard (driver to Capt. Clay)	24	£2, etc.
Guildford	W. Cross, Thurlow Square, S.W.	23	£5, etc.
Chertsey	R. G. Murray, Cobham	—	20s.
"	M. Violeau	—	30s.
"	H. Outram, London	—	20s.
Uckfield	Captain Homfray, Hove	34	£3, etc.
Windermere	A. Magnan (driver to Mr. McLean, Kensington)	34	£5, etc.
Woking	A. C. Dufort, Notting Hill, W.	20	£3.
"	G. A. Prentice, London, W.	22	£3.
"	A. Good, Kennington	28	£5.
Windsor	Hon. R. Guinness, London	22	£5.
"	A. Smith, Southend	21	£3.
"	A. Stern, Prince's Gate, S.W.	22	£5.
"	T. Foster, Earl's Court, S.W.	22	£5.
"	A. Smallman	20	£5.
"	F. B. Sanders (driver to Baroness Campbell)	23	£5.
"	J. Hirsch (driver to Mr. J. Lynch)	23	£3.
"	A. Morris, Piccadilly, W.	22	£5.
"	W. Rich, Pimlico	22	£3.
"	A. Lillywhite, London	29	£5.
"	J. Painting, Farnham	21	£5.
"	J. Bard, Staines	22	£5.
"	R. Beckett, South Audley St., S.W.	27	£3.
Newbury	A. Stradling, Cirencester	23	£5, etc.
"	F. C. Hopson, Newbury	25	£5, etc.
"	H. Richmond, Stamford Hill	25	£5, etc.
"	Dr. Hemsted, Kintbury	23	£5, etc.
"	A. Saraderein (driver to Mr. P. P. Peebles)	26	£5, etc.
"	P. H. Lacroute, Park Street, W.	20	£10, etc.
"	W. Woodward, Bromley, Kent	26	£5, etc.
"	H. W. Mills, Grosvenor Rd., S.W.	35	£7 10s., etc.
Aylesbury	N. B. Kenealy, Watford	21	£5 11s. 6d.
Andover	S. Fleming (driver to Mr. J. G. Bulteel)	—	£7, etc.
"	Earl of Carnarvon, Newbury	24	£10, etc.
"	H. Cross " "	—	£5, etc.
"	" " " "	—	Withdrawn.
"	K. Cannon	29	£7, etc.
"	A. M. Singer, Hove	—	£5, etc.
Chertsey	L. S. Bidwell, Kew	24	£2, etc.
Kingston	D. Singer, Hampstead	21	£2.
"	W. Hampton, Long Acre, W.C.	25	£3.
Fareham	G. Brickwood, Southsea	—	£10, etc.
"	R. D'Oyley Carte, Weybridge	—	£10, etc.
"	A. White, Portsmouth	19	£2, etc.
"	F. Shaw, Portsmouth	20	£2, etc.
Slough	E. F. Kelly	20	£7.
"	P. Natural	20	£5.
"	C. Besson	18	£3.
Woking	Earl of Ilchester	—	Adjourned.
Winchester	O. W. Payne (driver to Sir W. Pearce, Bart.)	18	Dismissed.
Guildford	E. Parker	19	£3, etc.
"	J. Sharpe	—	£3, etc.
Farnham	C. Hoffner, London	21	£5, etc.
Sandown	Major Bayley	20	£1, etc.
I. of W.			
Epsom	H. T. Olney, Streatham	18	£3.
Barmouth	J. Carrol, Runcorn	—	£2.
"	T. Young, Wolverhampton	—	£5.
Towcester	S. R. Roget, Kensington	30	£5.
Stockport	H. Hollingdrake, Stockport	14	Dismissed.
"	R. J. Andrews, Stockport	—	20s., etc.
"	C. Manners, Mansfield	—	20s., etc.
"	A. Barker, Timperley	—	20s., etc.
Colleshill	E. Owers, Hampstead	—	£7.
Amersham	J. Lawson, Hampstead, N.W.	40	£5, etc.
Beaconsfield	F. S. Heidenheimer, Hatton Garden, E.C.	29	£6.
"	L. Raffalovich, Piccadilly, W.	22	£5.
"	Major D. Sellar, Bury St., W.C.	25	£2 2s.
Uxbridge	W. Green, Swindon	—	£3, etc.
Greenwich	J. Bowden, East Greenwich	16	40s., etc.
Mortlake	S. C. White, Kensington	23	£1, etc.
Oxford	C. F. Whitelaw, Taplow	—	£3.
Norman Cross	J. W. Stocks	—	£5.
Northwich	S. Brown, Ashton-on-Mersey	20	40s., etc.

FURIOUS DRIVING CASES.—(Continued.) MOTOR-CYCLES.

Barmouth ...	J. Answell, Runcorn	—	£1, etc.
Standish (Liverpool)	J. Edge, Liverpool	25	£5.
King's Heath (Birm'ng'h'm)	G. Nicolls, Sparkhill	30	20s., etc.
Bristol	E. W. Crabb, Bristol	20	£5, etc.
Rugby	E. Roberts, Thurlaston	18	£1.
Steyning	L. F. Whyman	20	£3.
Towcester ...	A. W. Smith, Northampton	—	£1.
Alcester	A. W. Hayes, Birmingham	21	£1.
Winchester...	W. Alexander	23	40s., etc.
"	G. Ferrand, Odiham	21	£3, etc.
Taunton	W. T. Jarman, Taunton	—	£1, etc.
"	H. S. Pollard, Taunton	—	£1, etc.
"	W. Stone, Taunton	—	£1, etc.
Farnham	Lieut. Crawshaw	—	10s., etc.
"	A. J. Lunn	25	£1, etc.
Midhurst	R. H. Falkiner, Portsmouth	—	£5, etc.
Llandudno ...	G. H. Healey, Llandudno	—	£3, etc.
Newport (Mon.)	A. G. Duchemin, Barry Dock	26	40s.
Beaconsfield	F. H. Jackson, Richmond	29	£1 1s.
Lambeth	A. Alberting	—	40s., etc.

Where no alleged speed is given it is understood to be above the legal limit.

MR. STAPLEE FIRTH defended the driver of Sir W. Pearce's car at Winchester. The constable said that although he was a quarter of a mile off he was able to see the telegraph poles, and to time the car over 200 yards in 25 seconds, equal to 18 miles an hour.—Payne, Sir W. Pearce, and Colonel Moore swore distinctly that the hill, the most dangerous between London and Southampton, necessitated very slow speed, especially in the condition it then was, and the speed down hill ranged from nine miles to six miles an hour, and as they had to turn into Kiln Lane to go to Brambridge, and the road was recently "up," slowness was a necessity. The distances were put at 307 yards instead of 220.—The case was dismissed.

AT the Woking County Sessions, on Saturday, the Earl of Ilchester was summoned for driving a motor-car at excessive speed. His lordship pleaded not guilty. Sergeant Jarrett said that when he stopped the car the driver attempted to get away. Witness, who was on his bicycle, dismounted and clung to the back of the car, and was carried along for some distance. The name of the driver was refused, and witness subsequently called on his lordship at Holland House. The defendant on Saturday asked the magistrate to adjourn the case for the attendance of a lady witness from Ireland, and mentioned that he stopped the car directly he was asked to do so, and offered to take the witness with him to London in order to prove his identity. His lordship said the sergeant's account of the conversation was totally unreliable. He was given no proof that the witness, who wore plain clothes was a policeman; he showed him no card or anything else. The case was adjourned.

ABOUT £20 in fines has been exacted by the Norman Cross (Huntingdonshire) magistrates from motorists travelling at over 20 miles an hour.

THE Justices of the Andover Petty Sessional Division of the county of Hants have heard summonses preferred against several gentlemen driving motor-cars on the highway at a speed of over twelve miles an hour on July 7th, 8th, and 9th, in going to the Bibury Club races, held at Salisbury. The first defendant was Sidney Fleming, driver to Mr. J. G. Bulteel, of Sefton Park, Slough, who was riding in the car, there being two summonses against him, one for July 8th and the other for July 9th. Defendant was ordered to pay £7 and 15s. costs. The summons for a similar offence on July 9th was withdrawn on payment of costs.—The Earl of Carnarvon, of Highclere Park, Newbury, was proceeded against for driving his car beyond the regulation twelve miles an hour on July 7th and 8th. On July 7th the police timed his lordship's car for a measured mile, which was covered in 2 min. 4 sec., or at the rate of 29 miles an hour. When signalled to stop he turned the car down a side road, and dashed through a farmyard and river in the village of Wallop. On July 8th the Earl again went to the Bibury races, when the rate of speed was over 24 miles an hour. There was no defence, and Superintendent Bowles having put in a list of four previous convictions for similar offences against Lord Carnarvon, the justices now fined him the full penalty of £10 and 11s. costs in each case, or £21 2s. in all.—Harold Cross, driver to the Earl of Carnarvon, appeared to two summonses, and pleaded guilty. He was fined £5 and 9s. costs on the first summons, the second being withdrawn on payment of costs.—Kempton Cannon, jockey, of Stockbridge, Hants, was fined £7 and costs for a similar offence, committed on July 8th.

FATALITY AT BRIXTON.

MRS. MARIA GREYSTOCK, fifty-five, was knocked down by a motor-car in Brixton, S.W., recently, and expired a few hours later. At the inquest the owner and driver of the motor, Mr. Walter Watson, who said he was a stockbroker of New York, stated that when the accident happened he was

coming from Newhaven. The deceased stepped in front of the car. He did all he could to prevent the accident. Answering a jurymen, witness said he was an expert driver, and had passed an examination by the French police. He was travelling about six miles an hour when the accident happened. The medical evidence showed deceased died from shock, following fracture of the spine and internal injuries. A verdict of "Accidental death" was returned.

QUARTERLY HUNDRED MILES TRIAL OF THE A.C.G.B.I.

The Quarterly Hundred Miles Trial was held on Friday, the 24th ult., when there were four competitors.

The James and Browne (9-h.p.) weighed without passengers 19 cwt. 14 lb., and with passengers 24 cwt. 1 qr. 12½ lb., and consumed 3 gal. 2 qt. of spirit on the journey, giving a cost of 525d. per mile. The speed both on the outward and return journey was up to the legal limit. The speed on the steep portion of Dashwood Hill was 7.42 miles per hour, and on the mile including Dashwood Hill 9.04 m.p.h. The speed on Aston Hill was 10.2 m.p.h. Mr. R. W. Sprague, who acted as Honorary Observer, reports: "Two stops; both caused by tyre troubles. Cause: (1) Inner tube nipped; (2) inner tube gave at join."

The Brooke car (14 h.p.) weighed 22 cwt. 2 qr. 25½ lb. without passengers, and 28 cwt. 1 qr. 27 lb. with passengers. The fuel used on the journey was 5 gal. 2 qt., giving a cost of 825d. per mile. The speed

TO CORRESPONDENTS.

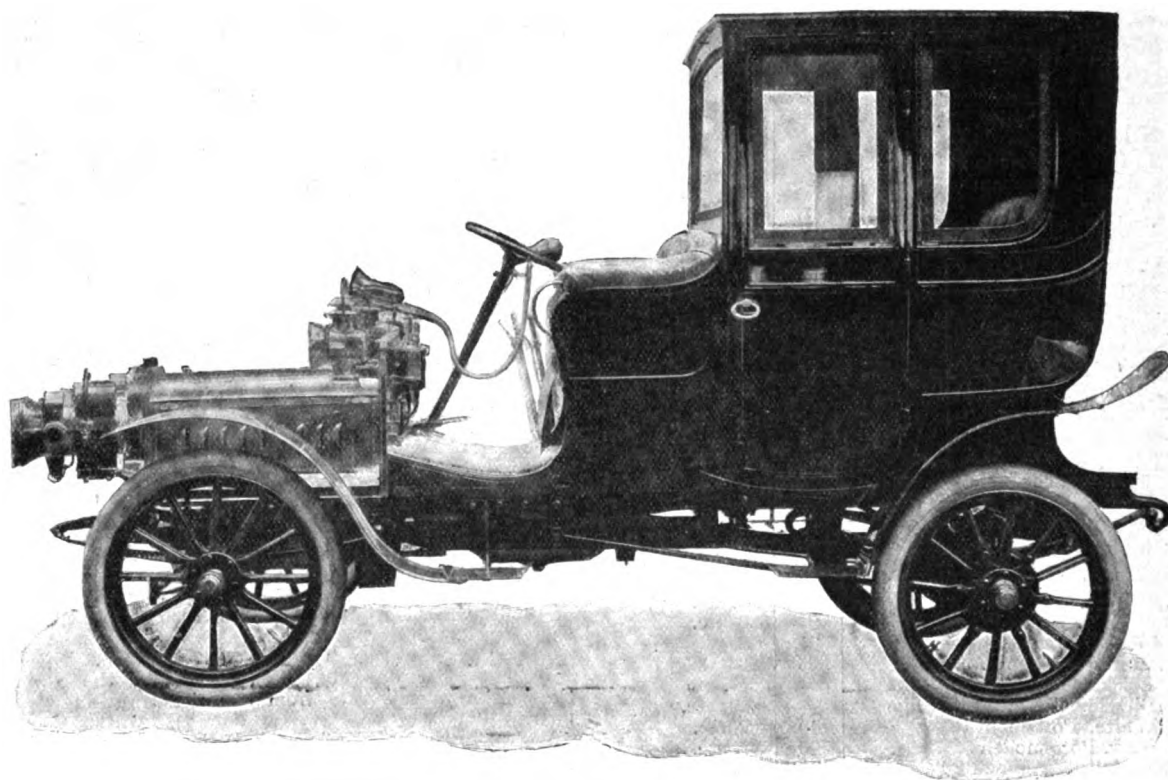
All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.



A 12-h.p. Clement Car, fitted with Special Coupe Body by Messrs. J. Rothschild et Fils, Ltd.

both outward and return was up to the legal limit. The speed on the steep portion of Dashwood Hill was 6.45 m.p.h., on the mile including Dashwood Hill 8 m.p.h., and on Aston Hill was 9.11 m.p.h. Mr. T. MacNeill, who acted as Honorary Observer, reports: "Car ran particularly well. She only worked on two cylinders from the 32nd milestone to 34th, during which time Dashwood Hill had to be negotiated. It was an absolutely non-stop run."

The Ariel car (12-h.p.) weighed 19 cwt. 1 qr. 24 lb. without passengers and 25 cwt. 11 lb. with passengers, and consumed 5 gal. 1 qt. 1 pt. 13 oz. of spirit, giving a cost of 81d. per mile. The speed both on the outward and return journey was up to the legal limit. The speed on the steep portion of Dashwood Hill was 12 m.p.h., on the mile including Dashwood Hill 14.51 m.p.h., and on Aston Hill 15.58 m.p.h. Mr. E. de Wilton, who acted as Honorary Observer, reports: One stop on Notting Hill for burst tyre, 23 min."

Owing to innumerable tyre troubles the Lanchester car (10-h.p.) discontinued the run at Dashwood Hill.

ALLEGED REFUSAL TO STOP.

BEFORE the Banbury County Bench, W. L. Creyke, Oxford, was summoned for refusing to stop his motor-car when requested by James Slatter, he having a restive horse, at Adderbury, on the 18th of June. Mr. Walsh, who appeared for the defendant, pleaded not guilty, and secured the adjournment of the case for a month for the arrival of witnesses now abroad.

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THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, AUGUST 8, 1903.

[No. 231.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



TUESDAY'S discussion in the House of Commons was a revelation of strength and weakness that must have caused motorists to rub their eyes when they read the reports on Wednesday morning. Representatives of agricultural districts discoursed on the enormity of the suggestion with regard to the withdrawal of the speed limit, and even the spokesmen of motorists proved lukewarm advocates. There was an air of compromise about that boded ill for any final settlement, and we could have wished that more energy had been infused into the matter. Now that the question of the speed limit has been raised, nothing else but its abolition will be satisfactory, and automobilists in Parliament will not be serving their fellow motorists unless they are strong on this point.

No Confidence.

FRANKLY we confess that we do not like the Motor-Car Bill which the Government has introduced. The chances of appeal are not sufficient, for, it must be confessed, the likelihood of universal fair play to motorists is somewhat remote. A study of our reports of furious driving cases, supplemented by a perusal of discussions at local councils, and the harangues of magistrates on so-called judicial benches, is enough to convince any thinking person of the impossibility of securing justice. Even a bad law can be tolerated if administered with discretion; but for motorists to expect justice in the present state of public opinion is something scarcely imaginable.

More Fight Wanted.

IN quietly deciding to accept the Bill the Parliamentary automobile party showed a calmness which was not courageous. Obvious injustices are being placed upon the statute book and yet they are accepted without strenuous efforts being made to minimise their hardship. It is said that the whole Bill will be in jeopardy if full discussion is permitted. The attitude of anti-motorists in thus sullenly awaiting the executioner of their pet aversion can be understood; but not so that of the motorists who merely say "We will take the Bill because there is no other course." This is not the spirit in which difficulties should be met, and if proper insistence were made on the meagre chances of appeal provided in the measure a better prospect would have been in store for motorists.

In Jeopardy.

IT must now be clear to the veriest Parliamentary tyro that all the fuss and pother of the last few years has really damaged the motorists' position in the eyes of the country. It is to be hoped that it will not be entirely jeopardised by recent tactics. The Bill as sent from the Lords was bad for motorists, but as Mr. Long has conceded the speed limit, its effect will be really worse than was the older legislation. Higher

penalties will now be enforceable, and no advantage gained by the motorist. This will operate most hardly on the man of moderate means, while it will ultimately prove wearisome to the richer class of owners.

Let Well Alone.

UNLESS the speed limit, with all its vexatious accompaniments of police traps, is abolished the Bill should be opposed. That seems the one logical attitude for motorists in Parliament to assume. Otherwise the only result of the agitation they have fostered will be that their friends will be subjected to higher penalties, numbered like auction lots, licensed like cabbies, and liable, for Mr. Long's backbone is pliable before stout opponents, to be thrown into prison. And all because the impetuosity of young enthusiasts could not "let well alone."

Against the Motorist.

MR. MONTAGU himself wrote before Mr. Long climbed down that the advantages of the Bill to the motorist consisted in the abolition of the speed limit and a slight raising of the tare limit for slow traffic. The latter is a valuable industrial concession which we appreciate, but does not affect the tourist or the ordinary man any more than the conditions prevailing in Ireland during the Gordon Bennett week are to be instanced as normal ones. Now that the speed limit is to be re-enforced, and possibly reduced, there is nothing left to the motorist but the new provisions, and Mr. Montagu admits that there are half a dozen innovatory restrictions in "the interests of the public"—a neat phrase which really means against the convenience of the motorist.

Time on our Side.

THE chairman of the Tunbridge Wells Farmers' Club took the right line at the last meeting of his association, when he hoped the Motor-Car Bill would not pass, as in a few years "they would all be motorists." Time is on our side, and it is a pity that by premature agitation some misguided motorists brought about the present legislative position. Had they waited a few months, or two or three years at most, there would have been a majority of motorists in both Houses of Parliament, with the result that the discussions would have had a more practical tone, and the whole position made distinctly clearer to the public.

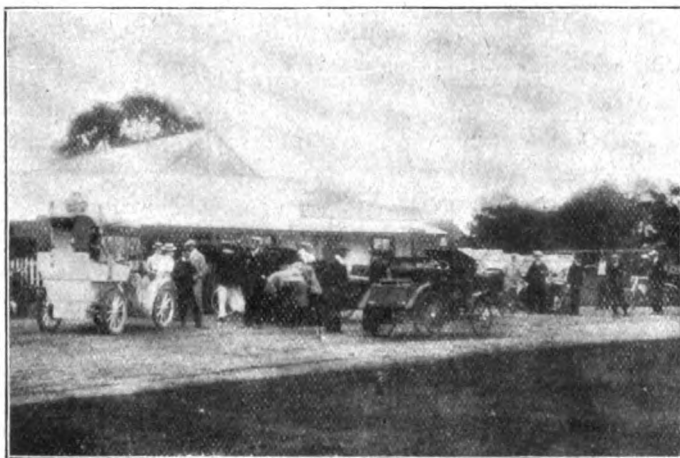
A Somersault.

MR. WALTER LONG has surprised everybody by his somersault. Only a few days ago he was advising the Chamber of Agriculture that it was impossible to enforce a speed limit; now he has consented to such an absurdity being included in his Bill. Originally amateur drivers were to be treated as ordinary gentlemen; then it was agreed that they should be licensed on payment of a fee; now the licence certificate will only be granted after a test of efficiency. The vagaries of the motor-car of 1896 were as nothing to the vacillations of the modern motor

statesman, whose dislike of settled convictions is as pronounced as the ordinary J.P.'s partiality for such cases.

The Right Position.

PROBABLY the most reasonable view of the matter which has appeared in the daily press is that of the "Morning Advertiser." "Our own view of this motor question is," says our contemporary, "that the best plan would be to treat motor-cars exactly as we treat horse-drawn carriages. They should be subject to the ordinary law of furious driving. It is much easier to decide whether a vehicle is being driven to the danger of the public than to make up one's mind off-hand whether it is going at a greater rate than 20 miles an hour. Any limit is bound to perpetuate the bad system of police spies and motor traps, which leads to continual conflict of evidence and much bad feeling. Far better would it be to trust to policemen and the public alike to say whether a motor-car was being driven to the common danger and to impose no limits of any kind whatever. If a speed limit should be insisted upon, then it would be the wisest course to refuse to license any motor for road use which is capable of going at more than a certain number of miles an hour."



The First Run of the Eastern Provinces Automobile Association.

The Logical Conclusion.

THIS latter suggestion is really the logical conclusion of the adoption of the speed limit, and its restrictive influence is apparent at once. It will stifle the industry, destroy initiative on the part of inventors, and generally reduce a promising trade to a dull dead level of decadence. In fact, at a time when the motto of the country is "Wake up, England!" to suggest a penalisation of its activities is a course that cannot commend itself to patriotic people. It savours of the narrow spirit that too frequently has prevailed to the disadvantage of the general welfare, and we would urge all interested in the automobile industry to make it clear to their Parliamentary representatives that votes given against the abolition of the speed limit will be really given against the national prosperity. Urgent and strong action is needed to prevent such a scandal being committed in the House of Commons.

The Right of Appeal.

AMONG the peculiarities of the Bill was the right of appeal granted to those threatened with imprisonment, no such provision being made for those merely fined. Why such a distinction? Leave of appeal on both facts and law should be granted; otherwise, what security is there of fair play? Motorists would not be sorry to see the whole Bill abandoned, so full of absurdities and injustice are its provisions. Let it become but a memory of the early and amateurish efforts of enthusiastic legislators whose road, no doubt, was paved with good intentions, but led to undesirable conclusions all the same.

Dulness the Result.

AMID all the uncertainty now prevailing with regard to the future position of automobilists one thing is very clear to those in the trade. Possible customers are postponing orders, being anxious to know exactly the risks they will run in becoming motorists. People do not want to put their necks in a noose when there is a probability of it being tightened. And whilst they may tempt the law as it now stands, they will be less likely to risk the fines, imprisonment and other threatened penalties to be imposed by prejudiced justices. Hence the diffidence which would-be motorists now display towards the industry.

A South African Club.

At the first run of the Eastern Province Automobile Association eight motor-cars were present, thus demonstrating the hold that automobilism has already obtained in Port Elizabeth. A trip was made to Green Bushes, the cars participating in the event being four De Dietrichs, one Wolseley, one Stirling, and two of the Benz type. Motor-cycles were also included in the trip, a Rex motor-bicycle with a trailer being especially prominent.

The Depreciation of Property.

WHILE it is an undoubted fact that the motor-car has led to an appreciable rise in the demand for riverside cottages along the Thames, it is also threatening to depreciate the value of property in some districts. At the last meeting of the Windsor Town Council, the question of the dust raised by motor-cars when passing through the royal borough was raised, and quite an animated discussion arose. It appears that the succession of motor-cars in the district leads to a perpetual plague of dust on dry days. The dust caused by one car has not time to settle down before the advent of another vehicle, thus causing a continual cloud.

The Dust Nuisance.

UNLESS something was done one Councillor said that people would remove, with the consequent depreciation of property resulting from a general exodus. The complaint is not confined to Berkshire; it is fairly general wherever motor-cars are popular, and is likely to increase unless those responsible for the management and maintenance of the roads are willing to co-operate with motorists in the matter. There is no doubt a great deal of dust associated with motoring, but all the blame should not be given to the car. The science of road making has not yet attained finality, and we look to road surveyors to devise a road surface that will not be so easily disturbed by any sudden rush of air.

A Trans-Continental Trip.

THE last American mail brings the news of what is said to be the first trans-continental trip, Dr. Nelson Jackson, of Burlington, Vermont, arriving in New York from San Francisco on the 26th ult. Dr. Jackson, accompanied by a mechanic, left San Francisco on May 23, and covered the entire distance of 5,900 miles in forty-three days. Neither of the two motorists suffered the slightest ill effects, although they experienced many hardships. The car was a 20-h.p. Winton, on which was carried a complete camping outfit, cooking utensils, water tanks, rifles, fishing-rods, canned foods, etc. The route followed was through California, Oregon, Idaho, Wyoming, Nebraska, Illinois, Indiana, part of Pennsylvania, and thence to New York, via Buffalo. The vehicle arrived in New York in good condition although thickly covered with mud and showing other signs of hard usage. The first good travelling after leaving California was reached when the tourists struck the old military road in the western part of Nebraska. From

Omaha to Chicago the route was along the Chicago and North-western Railway. The exact mileage on the trip could not be kept, the cyclometer being lost on the desert. Fast time was not attempted, as the tourists desired to see the country as they went along.

No Camp; a Gymkhana Instead.

At a special committee meeting of the Yorkshire Club, held late last week, it was decided to postpone the East Coast camp owing to the unsettled state of the weather during the week before Bank Holiday. The Club are, however, organising a motor gymkhana in connection with the Horsforth Agricultural Show, on Monday, the 24th inst. There will be five events, comprising bending race, motor-cycle obstacle and bending race, coach house race, passenger race, and legal limit race. These will be held in Mr. Duncan's Park at Horsforth, in the centre of which is a well rolled and level ground over 150 yards long by 120 yards wide. There will be a special enclosure alongside the course to which all motor-cars or cycles may be taken, so that their passengers may comfortably view the events. The Hon. Sec., Mr. A. W. Dougill, will be pleased to send entry forms to anyone desirous of competing, on application. There are a great number of promised entries, and, as this gymkhana is held in connection with an Agricultural Society Show in an essentially agricultural district the Committee trust that local motorists will support them.

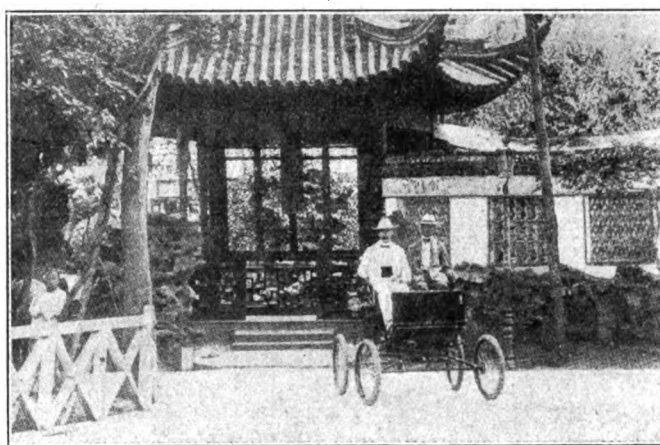
Electrical Vehicles.

In the course of his paper on "Application of Electricity to driving Carriages in Towns," at the recent Engineering Conference, Lieut.-Col. R. E. Crompton remarked that, as regards storage batteries, those used so far are invariably of the lead-couple type, either with electrodes made active by Plante formation or of the E.P.S. type. The Edison battery, about which so much has been written, in which iron and oxide of nickel have been used, has not yet been put into a workable form, although much is expected from it. Apparently, however, it is not necessary to wait for the invention of a new type of accumulator, as there are several forms already in use which work very well, and which can be maintained at a moderate cost. In the author's opinion all that is necessary to reduce the cost of accumulators further is standardisation—that is to say, the supply of accumulators should be undertaken very much as the supply of fodder and forage for horses. Once standardisation of this class is carried out to such a point that standard boxes can be exchanged for others ready charged on the production of a subscription ticket, at a sufficient number of charging stations, the difficulties and risks of this method of mechanical propulsion become greatly lessened; in fact, they practically disappear. The cost of tyre-upkeep in electrical cars has been found to be unexpectedly high, although a good many of them use solid rubber. This high cost is probably due to the vehicles being rather heavy, and probably also because the mileage run by them is very considerable. Also probably on account of supposed facility in arranging the gearing, the wheels of these cars have in many cases been unnecessarily small, and it is known that the deterioration of solid rubber tyres increases in proportion to the number of revolutions made by the wheels.

The Discussion.

THE discussion on the paper was opened by Sir E. Carbutt, who, referring to his own experience with a touring car weighing some 2½ tons, commented on the expensive character of the tyres, which might be due to some extent to the heavy car. He emphasised the necessity for methods of standardisation, more especially in battery equipments, and instanced the practice of the Electromobile Co., who gave facilities to subscribers for obtaining re-charged batteries for any of their vehicles, and also insured them if required. He mentioned the

difficulty in getting the battery re-charged when touring. Mr. Theodore Chambers said that in the matter of expense a town carriage would cost £1 a day, but it had the advantage over horses of great mileage. One of his company's carriages had covered 850 miles in May, or at the rate of 10,000 miles per annum. The cost of pneumatic tyres came to £100 per annum, garage charges, say, £200, and driver £100, making a total of £400 for running and repairs per annum, which he saw no possibility in reducing. Mr. H. F. Joel could not agree with the practice of driving on to the front wheel, but considered there was less chance of slipping when driving on to the hind wheels, and for hill-climbing this was by far the best place. He quite agreed as to the efficiency of chain driving. Referring to the Edison battery, he did not think it would be a lasting one. Mr. P. W. Northey preferred one motor driving on to a live axle as the most efficient method of transmission. He thought all rubber tyres were a mistake, but solid rubber ones less troublesome than others.



A Locomobile at Tientsin, China.

Motor Boat Race.

A NOVELTY on the programme of the Royal Southampton Yacht Club's regatta on Saturday was a race for motor-boats not exceeding twenty-five feet in length, the first that has taken place on the Solent under the rules and regulations of the Motor Marine Association. Four boats were entered, of which two—Captain Spooner's Cornubia, fitted with a Tangye engine, and Bertha, Mr. J. Meader's Cowes-built twenty-five footer, fitted with a Lozier engine—were considered as being very closely matched. The Cowes boat with the American engine did not put in an appearance, and Captain Spooner had the easiest of victories. His only serious competitor was Captain Stringer's Nugwug, which is fitted with a Truscott motor, but which was not nearly powerful enough to drive the boat through the rather choppy sea which prevailed. As it was, after deducting time allowance according to the Marine Motor Association's scale, Captain Spooner won with half an hour to spare over a nine miles course.

The Motor Volunteers.

ON the 28th ult. Mr. J. T. Overton (in connection with the Motor Volunteer Corps) was on duty, driving to Royston and back. The work of the corps is proceeding apace in the Chester command, where Captain Hammond has been making a personal tour through his district for the purpose of enrolling those who have made application for membership. Lieut.-Colonel Mayhew arranged with several of his officers for a staff ride on the first three days of the week now closing over the manœuvre area, in order that the chief roads and localities may be familiar to those doing duty during the forthcoming manœuvres, and to arrange for the supply of petrol, stores, etc., at various points.

Bottles for Motorists.

Our fears with regard to the prejudice of administrators of the law against motorists find confirmation not only in the remarks of such J.P.'s as the chairmen of Surrey and Sussex Benches, but also in the speeches of rural councillors throughout the country. At the last meeting of the Eton Rural District Council, Councillor Hill contended that the only way to stop speedy motor-cars was to put broken bottles on the road—a procedure that reminds us of the Berkshire constable who, in the early days of motoring, wanted to arrest the progress of motor-cars by placing the trunks of trees across the roadway. The Eton Council, which has a jurisdiction over a score of parishes, has decided to protest against the extension or abolition of the speed limit—a decision arrived at after hearing speeches full of passion, as displayed in the utterances of Councillor Hill. When prejudice would resort to broken bottles, can our suspicion of the law be regarded as an incorrect view of the position?

Heavy Motor Wagons in Lancashire.

WHEN in Manchester the other day we were struck with the large number of heavy motor-wagons in use in connection with the cotton trade, the vehicles being employed in conveying loads of cotton goods direct from the factories in East Lancashire to the shippers. Some interesting information with regard to this growing traffic is given in the report of the Main Roads and Bridges Committee of the Lancashire County Council, which has just been issued. The report states:—"From February 12th to June 11th this year 798 single journeys have been made by motor-wagons over the main roads from Blackburn and Darwen to Bolton. In round figures this means 20,000 tons of traffic per annum. On the Blackburn and Walton Cop Main Road, from July 7th to July 13th last, there were 79 single journeys made by motor-wagons, with trailers attached, and 26 by motor-wagons without trailers, making a total for the week of 105. If this average is maintained throughout the year some 60,000 tons weight will pass over the road, much the larger proportion of which is absolutely new traffic. On the Preston and Blackburn turnpike road there were 109 single motor-wagon journeys made during the week ended June 16th last. This would give an average of 45,344 tons per annum, the whole of which is entirely new traffic. The Committee have already been compelled to ask for sanction to a loan of £8,800 to put two of these roads in a proper condition to cope with this traffic."

Motor-Buses at Birmingham.

THE Birmingham Watch Committee have decided to grant permission to the Birmingham Motor Express Company to run motor-omnibuses between New Street and Hagley Road. The fare will be twopence, with penny stages, and, like other public vehicles, the cars will be subject to bye-laws and to inspection and examination both as to seating accommodation and as to mechanical efficiency. Originally, we believe, there were two applications for a license over the same road, but the parties came together, with the result that the judicial sub-committee, to whom the matter was referred, could hardly do otherwise than recommend the application. Eastbourne, Hastings, and other places now have their motor-buses, and it only requires a few leading provincial cities to adopt the same means of public locomotion to secure universal recognition of the motor-omnibus as an ordinary vehicle of the street.

An Official View of the Bill.

SINCE our comments on the Motor-Car Bill were written, the Automobile Club is understood to have come to the same conclusion that, if the Bill is passed in the form proposed in the House of Commons on Tuesday night, it will seriously prevent the development of automobilism in this country. The motor industry, which of late has been improving, will be crushed, many of the present owners of cars will dispose

of them, and prospective owners will abandon the idea of joining the ranks of automobilists. As is pointed out in a statement officially circulated, the Bill provides for the registration and identification of motor-vehicles, the licensing of all drivers, a speed limit of ten miles per hour (or less) in congested towns and thoroughfares, and for heavy penalties (including imprisonment without the option of a fine) for breaches of its provisions. It is now proposed to introduce a speed limit for the open country road, and to insist upon the examination of drivers. Further, the administration of the law is placed in the hands of the Justices of the Peace, many of whom are exceedingly prejudiced against the extension of automobilism, and two Justices of this type in Petty Sessions can, on the evidence of a single policeman, impose a penalty of £20 and suspend a licence for five months, and against this sentence the unfortunate defendant will not even have the right of appeal.

Inquiry Suggested.

IF it is the object of Parliament to prevent the extension of automobilism and to stamp out the motorist as they would a criminal class, no means more effectively calculated to secure this end could have been devised. Few self-respecting men, few persons of moderate means, will dare to run the risk of the fines and imprisonment now seriously proposed. If the Bill is passed in the present moment of prejudice and panic, the mistakes of seventy years ago, when the steam road carriage movement was killed by reactionary legislation, will be repeated, and the English people will be largely deprived of the advantages of mechanical traction. Under these circumstances it is suggested that the present Bill should be dropped, and the example of the French Government followed. That Government has appointed a representative Commission of enquiry which is carefully examining the whole problem. A Royal Commission taking evidence during the autumn months would be able to propose legislation far more likely to afford a permanent solution of the problem than the repressive measure now before Parliament.

A Lively Agitation.

DURING the week telegrams have simply poured into the House of Commons against the Bill, and motorists from all parts of the country have written and wired to the M.P.'s interested, urging opposition and counselling the rejection of the measure. The Bill will be again under discussion by the time these lines are in print; no time is to be lost; we repeat our advice to motorists to do all they can to influence members against the Bill, and so secure the rejection of a measure likely to adversely affect a new industry and to reduce automobilism to a puny movement indeed.

MR. A. BILLING, of 89, Edgware Road, W., writes that he has no connection with the gentleman of similar name who was recently fined for furiously driving a motor-car at Kingston.

THE Alexandra Simplex Motor Company, Limited, has been registered to manufacture and sell motor-cars, and to adopt an agreement with Messrs. C. Heyermans and A. Bluhm. The first directors are Messrs. T. H. Weguelin, R. H. Fuller, and H. Heyermans.

THE Post Office authorities have started a series of experiments with motor parcel vans, several vehicles leaving the Mount Pleasant office nightly for Epping, Redhill, and other outlying districts. An experiment has also been made with a motor-van for parcel work within the City boundary.

AN automobile demonstration was recently held at Selangor, in the Federated Malay States. Fifteen vehicles were at the rendezvous, including the Selangor Government's motor fire engine. Among the touring cars were three 8-h.p. Albions, an 8-h.p. De Dion, and a 9-h.p. Darracq. It is reported that no fewer than twenty cars are on order for residents at Selangor and neighbourhood. A public service of motor-vehicles is also about to be started on the east coast of Malasia, Pahang.

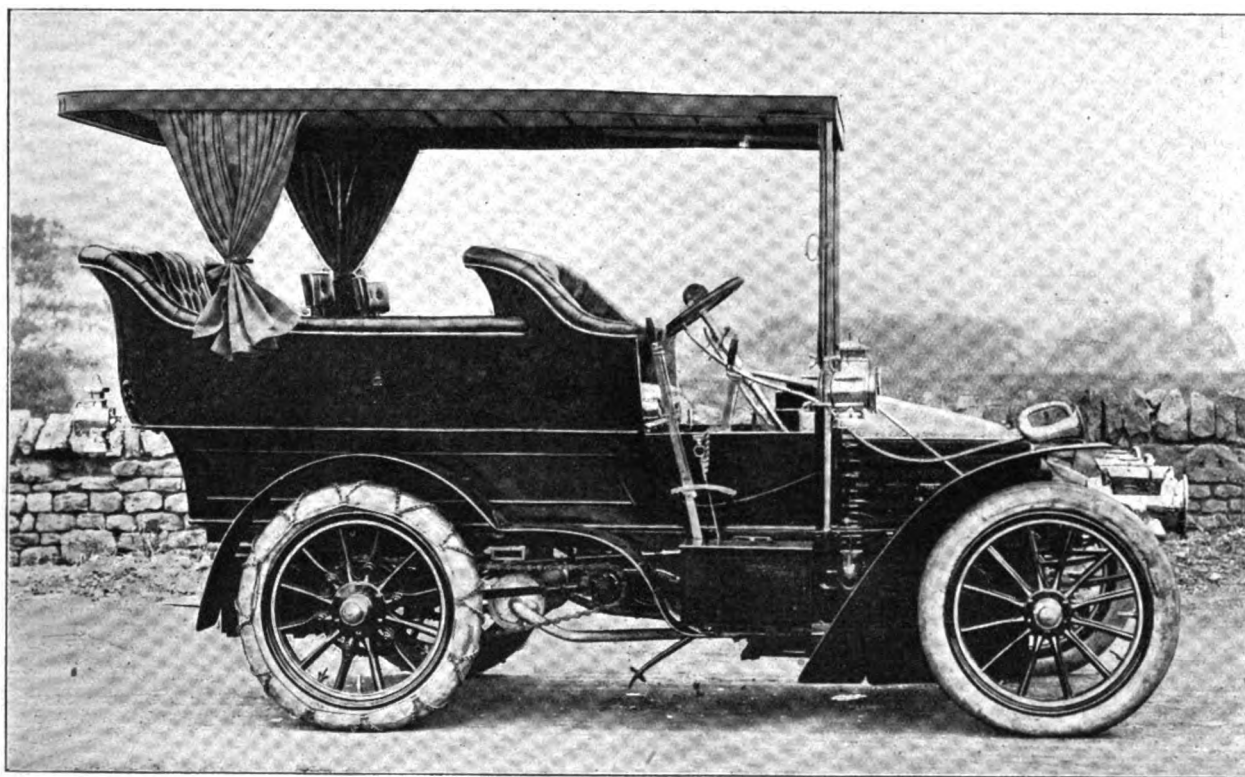
LONDON'S TRAFFIC.

THE members of the Commission on London Traffic were well-advised in taking a motor-car trip along some of the main arteries of metropolitan traffic one day last week; but let us hope the superficial knowledge thus obtained will not lead to their posing as experts and authorities. For the subject is too vast to be comprehended by a kind of Cook's tour—even though the guide and interpreter to the difficulties of street locomotion in London is Mr. W. Rees Jeffreys, the hon. secretary of the Roads Improvement Association, and the administrative secretary of the A.C.G.B.I.

Six motor-cars were placed at the disposal of the Automobile Club on the 31st ult. for the purpose of the inspection, and the members of the Commission who decided to thus obtain a kind of nodding acquaintance with their subject were Sir David Barbour (Chairman), Lord Ribblesdale, Sir Francis Hopwood, and Mr. Schuster. The first trip was to Hammersmith, Brentford, Hanwell, Ealing, Acton, and Paddington. It was suggested

construct a thoroughfare round London. The Commissioners were next taken across Brent Bridge and on to Hanwell. It was urged that since the laying down of the tramway at Hanwell the roadway had greatly deteriorated. The combination of stone setts and macadam was a most dangerous one, and ought not to be permitted. From Hanwell the route lay through Ealing, where complaint was made of central standards, to Acton. The looping of the tramway lines at the latter place was commented upon, and the road at this point was characterised as dangerous. The bad condition of nearly the whole length of Harrow Road was pointed out to the Commissioners, and it was submitted that a street improvement was needed at the junction of Harrow-road with Edgware Road. The tour was continued through Maida Vale, Kilburn, Cricklewood, Child's Hill, Finchley Road, St. John's Wood Road, Baker Street, and Park Lane to the Club, where luncheon was taken.

Later in the day a similar inspection of the roads of north-east London was made, Sir J. Wolfe Barry taking the place of Lord Ribblesdale, and it was soon apparent that the road com-



The Duke of Devonshire's 20-h.p. Welsley Car. As will be seen, the rear wheels are fitted with Parson's non-skid arrangement.

by the Club that in order to relieve the pressure of traffic in Piccadilly, Pall Mall ought to be continued through the Green Park so as to converge upon Piccadilly at the widened portion near Hyde Park Corner. The policy of providing alternative routes as opposed to widening existing roads deserved further consideration. The attention of the Commissioners was directed to the widenings at Knightsbridge and Hammersmith Road, and to the difficulties of traffic at Hammersmith Broadway. It was pointed out to the Commissioners that it was proposed to link up the tramway line terminating at Hammersmith Broadway with the line on the south side of Hammersmith Bridge, but the Club thought that as that bridge was already insufficient for the traffic upon it a special bridge ought to be constructed on the eastern side of the existing bridge if the tramway scheme was agreed to.

The opportunity was taken at Brentford of suggesting to the Commissioners that the old trunk roads were insufficient to bear the local traffic, apart from the through traffic, and the opinion was put forward that one of the best means of relieving congestion in the central parts of the Metropolis would be to

munication into Essex is worse than to any other of the home counties. The Commissioners were taken along Shaftesbury Avenue to the junction of Tottenham Court Road, Euston Road, and Hampstead Road, as one of the most dangerous in London. The proposal to spend a quarter of a million on widening it will not meet the circumstances, and the Club suggests that a tramway should be built, carried to an underground tube, and so under Tottenham Court Road and Shaftesbury Avenue to the Embankment. From Euston Road the cars ran to the Angel, through Essex Road, Kingsland, Clapton, Lea Bridge Road, Leyton, Stratford, Bow, Whitechapel, and back again to the offices of the Traffic Commission. Through Leyton, Stratford, and Bow the Commissioners realised the bad road surface, which is really a disgrace to London. If the great Mile End Road, one of the widest thoroughfares in the Metropolis, could be adequately attended to, and the rude surface dealt with by modern methods, motorists would not be long in making their way to Epping Forest and other resorts in Essex now rendered impossible owing to the difficulties of getting there

CONTINENTAL NOTES.

By "AUTOMAN."

THE "cock and bull" motor-car accident story quoted by the Earl of Camperdown in the House of Lords the other day, as a reason for adding further penalties to the "bill for the persecution of motorists," has had a suitable pendant at the meeting of "the provincial council of Western Flanders," whatever that august body may be. The meeting took place on the 17th ult., and naturally the question of finding further means of annoying automobilists was on the tapis. One of the provincial Dogberrys, Mr. X., said "The organised running over of pedestrians cannot be tolerated, chauffeurs are getting speed mania. Their temerity goes even as far as death (translated *la mort*). Why one of them has even named his automobile *Mors*." Mr. Y. replied, "That is the name of the maker." Mr. X. retorted, "He is appropriately named, he makes deadly machines."

motor-cars in Paris. M. Rives tells me that he is busy organising the 6^e Exposition de l'Automobile, du Cycle et des Sports, which will open its doors on December 10th and finish on December 25th. Already the applications for space are very numerous. The largest stands last year were 100 square metres in superficial area; this year the space will be reduced to eighty square metres. M. Rives also tells me that there will be this year a much larger number of foreign exhibits than last year.

THE Exhibition will of course be held, as before, in the Grand Palais on the Champs Elysees, and comprise fifteen classes. Applications for space must be addressed to the "Commissariat General de l'Exposition," 6, Place de la Concorde, before the 20th September next, accompanied by a declaration as to the class in which the applicant desires to exhibit, the exact designation of the objects proposed to exhibit, and the space required.



The Chinese Ambassador to Austria and his suite on a Lohner-Porsche Electrical Car.

[Allgemeine Automobil Zeitung.]

QUOTATIONS from the Motor-Car Bill are appearing in the French press, and our trans-Channel neighbours are sorely puzzled to understand "ces Anglais," who have always had the reputation on the Continent for having such sound practical common sense, especially where a question affects commerce. We are put down as a nation of shopkeepers, of course, who know better than anyone else how to nurse and cultivate trade and free it from the ridiculous barriers from which it suffers under French bureaucracy. The Motor-Car Bill, however, is doing much to ruin our reputation on this side of the Channel. Such a killing of the goose that is about to lay golden eggs is completely beyond the blindness and folly of even French ultra "red-tapeism."

I HAD the good fortune to pass the afternoon of Thursday last with M. Gustave Rives, the well-known Paris architect, who was the chief organiser of the last exhibition of

THE allocation of the various stands will be decided by casting lots, in the case of all those whose applications have been made before the 20th September. The largest spaces will be balloted for first. Applications for space made after the 20th September will be allotted in order of receipt, and according to the space which remains unlet.

THE Laffrey meeting begins to-day by the weighing in the market at Grenoble. To-morrow, Sunday, the hill-climbing contest takes place in the morning, and in the afternoon there will be an exhibition of the competing cars in Grenoble. On Monday there will be an excursion to Uriage-les-Bains, a gymkhana, a banquet, and a theatrical performance, and the meeting will be brought to a close on Tuesday by an excursion to the "Lautaret," 2,075 metres above sea level. There are upwards of 30 competitors.

THE Austrian Automobile Club is organising a hill-climbing competition from Schottwein up the Semmering for Sept. 13.

L'AUTOMOBILE CLUB DE LA COTE NORMANDE has just been formed at Trouville.

THE newly-formed Automobile Club de Spa proposes to hold a hill-climbing competition at Malchamps next month.

A RUMOUR is current to the effect that Messrs. Eugen and Richard Benz are severing their connection with the Benz Co., of Mannheim, and are about to start new motor-car works at Ladenburg, near Mannheim.

THE German Automobile Club is already busily engaged on finding a suitable course for the 1904 Gordon Bennett race. Several routes have been suggested and runs are shortly to be made over them with the view of ascertaining their suitability for the Cup race.

THE Automobile Club of Marseilles will hold a competition of tourist and public-service vehicles at the end of October. The cars for the conveyance of tourists must be capable of carrying eight passengers and 80 kilog. of luggage exclusive of the driver and conductor. The public-service vehicles are to accommodate at least 12 passengers and 360 kilog. of luggage, as also the driver, a mechanic and a conductor. Marks will be awarded for (1) consumption of fuel and lubricant; (2) regular and easy working of the mechanism; (3) behaviour of tyres; (4) ease of evolution and control of the vehicles; (5) accessibility of working parts and facilities for carrying out repairs quickly; (6) elegance and comfort; (7), average speed over varying routes. The trials will consist of five different runs of about 150 kilometres each. Entries will be received up to the 15th October at the rate of £4 per vehicle.

A PROJECT is under consideration to construct a motor racing track round the Forest of Fontainebleau. It would be about 55 kilometres long and from 12 to 15 metres wide.

THE Mayor of Antwerp has followed the example of his Brussels confrere, and has issued a regulation limiting the speed of motor-cars in certain parts of the city to five kilometres (3½ miles) per hour. The Automobile Club of Antwerp has held a special meeting, when it was decided to send a protest to the Mayor, urging that motorists should be allowed the same speed as drivers of horse-drawn vehicles.

THE Lanchester car has been much in evidence at Cowes during the yachting week.

MR. O. C. SELBACH has opened a retail branch for the sale of motor accessories at 67 and 68, South Audley Street, London, W.

AN attempt is being made to arrange a match race between Mr. L. P. Mooers and Mr. Percy Owen, each to use the car which competed in the Gordon Bennett race.

"PUNCH" has a report of an imaginary meeting of the motor-car trade, at which Mr. Slaughter, representative of the firms of Mors et Vita, Panique, and the "Massacreur" Gesellschaft, presided.

MR. JOHN B. HULTON and Mr. G. H. Smith, of Warrington, have had an exciting experience at Sutton Weaver, nine miles from the town. They were returning from a motor-car run and did not notice that the bridge spanning the Weaver Navigation Canal was open to allow a steamer to pass. At a speed of about ten miles an hour the car dashed into the gateway and thence fell into the water, a distance of 15ft., with both occupants. They managed to cling to a rope until rescued. The car was much damaged.

THE "JACKSON-COVERT" VOITURETTE.

IN the report of the Exhibition at the Agricultural Hall (see issue March 28th, 1903) we gave a general view and a brief description of the motor-car recently put on the market by Messrs. R. Reynold Jackson and Co. We are now able to give some further details of the little vehicle, which is fitted with a 3-h.p. vertical motor located in the rear of a tubular frame. The

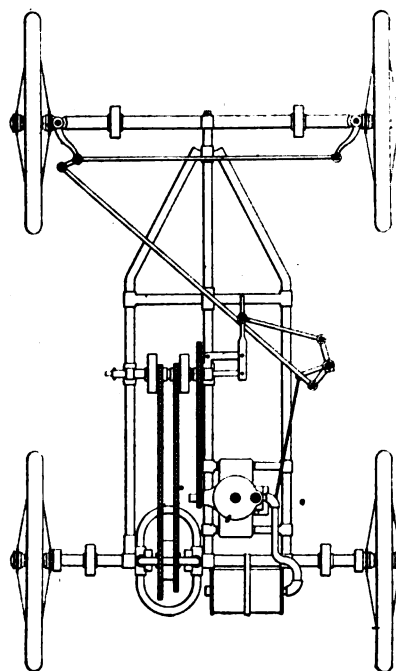


Fig. 1.—Plan of "Jackson Covert Car."

cylinder is air-cooled, but a water-cooled head is provided, the circulation being on the thermo-siphon system. Two speeds are provided; as will be seen from the plan (Fig. 1), the engine transmits its power by a chain to a short countershaft about the centre of the frame. On this are mounted two combined sprocket wheels and clutches, the power being conveyed to

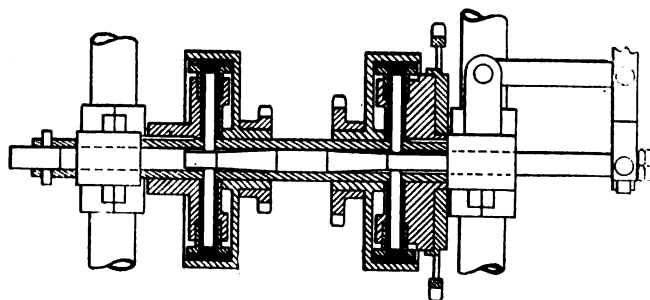


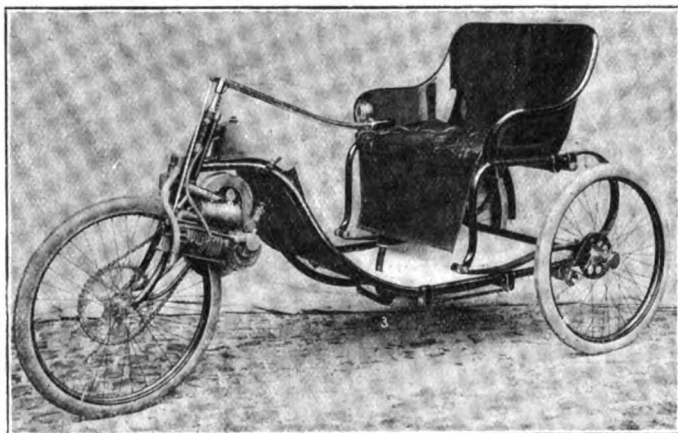
Fig. 2.—Section of Change-Speed Gear Shaft.

the rear live axle by one or other of the two chains provided. A sectional view of the change-gear shaft is given in Fig. 2. Steering is controlled by a side tiller, on the pillar of which the change-speed and advance ignition levers are mounted. The vehicle complete weighs only about 4 cwt. The speed of the car ranges from 5 to 20 miles per hour.

THE value of the automobile for everyday use has received clerical recognition in Michigan, where the Rev. E. J. Blekkink, pastor of the Second Reformed Church in Kalamazoo, has purchased one to use in making his pastoral calls. Mr. Blekkink has the distinction of being the first clergyman in Michigan to own a motor-vehicle.

THE DICKINSON "MORETTE."

A NEW motor-vehicle known as the "Morette," and adapted to seat two persons, has just been put on the market by Mr. B. E. Dickinson, of the Toledo Engineering Works, Birmingham. As will be seen from the accompanying illustration, the body and seat are entirely built of steel tube firmly braced together, the floor of the vehicle and seat being of wood-fibre carried on cross tubes. The vehicle is made in two forms, one being propelled by a $2\frac{1}{2}$ -h.p. motor and the other by a 4-h.p. engine hinged on a strong bracket behind the crown of the front wheel fork, of which it forms a part. This bracket also carries a rubber-covered pulley, with which the driving pulley of the motor engages frictionally, and which carries on one of its sides a sprocket connected by chain with a sprocket fixed on the hub of the front wheel. To reduce vibration in the frame due to the motor, wood-fibre or other suitable material is interposed at the hinged joint of the bracket. The steering is by tiller, a part of which projects in front of the head and is connected by a rod to the cylinder head of the engine, so that by an upward movement of the tiller the driving pulley of the motor may be disengaged from the intermediate pulley, thus giving a free engine. The current is switched on and off by the handle-grip, and the tank (which contains sufficient petrol for a 70-mile run) carburettor,



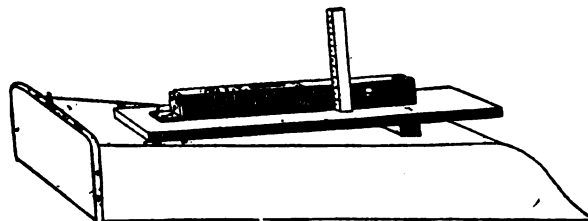
accumulator and coil are all placed in the front part of the carriage close to the motor. The latter is started from the seat by the pulling of a flexible cord fitted in a groove of the fly wheel.

The vehicle starts and runs very smoothly and with very little vibration, as much of this is absorbed by the rubber covered driver and intermediary pulleys. The steering is easy, as the weight of the motor being behind the front fork has a steadying effect. The "Morette" is designed to run from 12 to 15 miles per hour, and is specially adapted for the use of ladies, doctors, clergymen, and others who require a light handy vehicle capable of travelling at a moderate pace. Band brakes are fitted to drums connected with the hubs of the rear wheels. The overall width of the vehicle is 3 ft. 2 ins., and the wheel base is 5 ft. 6 in., the weight complete being about 140 lbs.

THE Minneapolis Automobile Club, of Minneapolis, U.S.A., has issued a circular to the public in which its co-operation is requested in checking reckless driving. The club appreciates the fact that chauffeurs are not complying with the law, and in the circular attention is called to the fact that the automobilists have secured all they have asked for in the way of legislation. No accidents have as yet occurred, and the club is anxious to avert any. The closing paragraph of the circular is as follows:—"The public is requested to report the number of any machine which is being carelessly operated to the secretary of the Automobile Club, and the owner will be dealt with according to the rules of the club, which are designed to prevent unsafe operation of machines."

SOME USEFUL NOTES.

MOTORISTS may sometimes wish to find out the approximate grade or grades of some particular stretch of road, and have no ready means at hand for the purpose. If this happen only once or twice in a season, good guesswork may do, but if one has a disposition to follow up this sort of investigation, a simple home-made device may answer the purpose fairly well. Take a board about five inches wide and of appropriate length, and attach a



good carpenter's level to it by means of a hinge at the rear end, as shown in the accompanying sketch. At a distance of $12\frac{1}{2}$ inches from the centre of the hinge set a foot rule upright and at exactly right angles to the plane of the board.

To use the instrument, take it from its place in the body of the vehicle (where it can be carried most conveniently), and arrange it upon the bonnet covering the motor, using a stick or stone under the forward end, if necessary, to let it rest evenly. From the top of a hill or slope sight along the board to some object at the bottom; raise the front of the level until the bubble is in the centre and note the measurement upon the rule. This gives one per cent. grade for every one-eighth inch noted on the rule, or a fall of one foot in every hundred for each one-eighth inch. Then measure the distance to the object sighted at the bottom of the hill, and the height of the hill can easily be calculated. Let us say, remarks Automobile Topics, that the measurement noted on the rule is two inches. This indicates, then, a fall of sixteen feet in every hundred. Suppose the distance to the bottom of the hill is 225 feet; then the height of the hill is two and one-fourth times sixteen, or thirty-six feet. At first thought it might seem that the foot rule on the instrument should be a circular scale, conforming to the axis of the hinge; but this is not the case. The upright measure corrects the departure from the perpendicular in the ground slope and gives the true height. The device is, of course, removable and can only be used when the car is at rest.

FROM the booklet issued by the Continental Caoutchouc and Gutta Percha Company, "Motor Tyres; how to treat and repair them," we notice that a recommendation is given to every driver to carry at least one back and one front spare tube with him. Great care should be taken with these spare inner tubes, as they



are easily damaged, either by nipping or nails, etc. Many drivers have the unfortunate habit of keeping their spare tubes in the tool-box, which is the very worst place in which they can put them, as the moving of the tools, etc., when the car is in motion may easily damage the tubes. To avoid this the Continental Company have placed on the market a special waterproof canvas-covered bag, illustrated herewith, made to hold two tubes, which are placed therein deflated and rolled up. The bags look very neat, they take up very little space, and their use will save much trouble and annoyance.

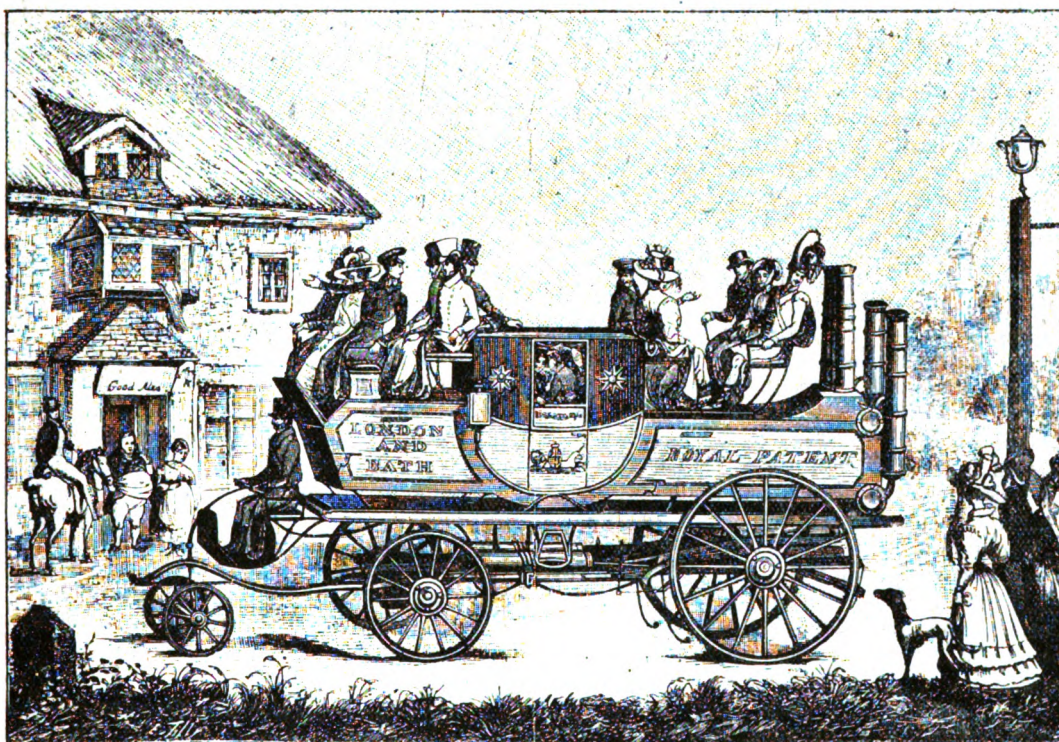
THE EARLY DAYS OF MOTORING.

IT was Fair Day at Melksham. The streets of the little English town buzzed with country people bargaining for cheap finery at the peddlers' booths or staring at the Punch and Judy shows at the corners. Suddenly a hum of astonishment, swelling into rage, rose on the outskirts of the crowd, and as it grew in volume and fierceness, Punch found himself perpetrating his direful deeds without an audience. With open mouths the crowd stared at an apparition advancing slowly down the main street. First came a carriage and pair, the horses panting in a white lather of foam, a postboy sitting limply on the back of one of them, a grimy mechanic on the box with the driver, and a couple of spruce gentlemen inside. Next, an astonishing puffing monstrosity—a thing on four wheels, with fire glowing beneath, a mist of steam rising behind and a couple of engines wheezing between the wheels. Two men were riding on the box, but instead of reins, one of them was gripping a horizontal wheel with which he seemed to be guiding the devilish contrivance.

Not only were there no horses to pull the infernal machine, but it was itself drawing an open barouche in which some men

No further invitation was necessary. The air was speckled with flying "remnants of a paleozoic age." An engineer had his scalp laid open with flints and stones. The stoker had the same experience, and in addition was knocked off his seat into the road. Thereupon the rest of the sixteen mechanics and passengers formed in line of battle, and, after desperate deeds of daring, succeeded in securing the caravan in the yard of a friendly brewer, where it was guarded by constables during the night. The steam carriage was taken to Bath the next day under the escort of the officers, and on the return trip it was smuggled through Melksham at midnight, drawn by horses.

Such were some of the diversities of life among the pioneers of automobilism. Most of us do not appreciate how much energy, ingenuity and courage were devoted to the development of mechanical carriages more than seventy years ago. When Gurney made the trip that so stirred the wrath of the conservatives of Melksham, England seemed at the beginning of an automobile age. The system appeared more promising then than it did as recently as ten years ago. Gurney's carriage was a wonder for its time. It was intended to be used exclusively as a motor, drawing behind it another carriage for passengers. As first designed it was steered with a lever, but in its improved



Gurney's Steam Carriage on the way to Bath in 1829.

sat with an insolent nonchalance most exasperating to a free-born Briton. Behind this outrageous contraption came another carriage with four lathery horses and two postboys. Eight gentlemen of leisure and as many engineers and mechanics were distributed among the various vehicles. So, to the amazed and indignant inhabitants of Melksham, appeared on July 30th, 1829, the steam automobile of Sir Goldsworthy Gurney on the first long journey ever performed by a locomotive at a sustained speed, either by road or rail. Sir G. Gurney had been scorching between London and Bath at the appalling rate of ten miles an hour or more, but on approaching Melksham he had slowed down to a walking pace to avoid exasperating the crowds at the fair. But the popular wrath at his unsightly innovation was not to be so easily disarmed. The hum of anger swelled to a roar. "I, Bill!" shouted one conservative citizen, "Wot is it?" "Give it hup," Bill responded, "but 'eave 'arf a brick at it anyway for luck."

form it had a horizontal wheel, such as is used on the modern motor-car. It had a pair of high-pressure engines whose use was made practicable by several ingenious inventions of Gurney's, which have proved of fundamental importance in all subsequent engineering practice. There was a tubular boiler instead of the old kettle, and the famous Gurney steam jet, whose subsequent adoption by Stephenson doubled the speed of the Rocket and made that pioneer rail locomotive a practical success. The Gurney carriage was driven by cranks attached to the axle of the hind wheels, and it was so arranged that power could be given to one hind wheel or both. It was about 10 ft. long, most of its space being required for machinery, coke, and water. It had the disadvantage of having to stop often for supplies. Every half-hour its thirsty boiler called for more water, and every hour its hungry firebox insistently demanded coke.

On the trip in question an extra supply of coke was taken along in one of the horse-drawn carriages, but even at that time

the idea of making a steam vehicle depend upon one drawn by horses to keep it going was considered open to criticism. The difficulty was obviated later by having fuel stations at regular intervals along the road. On the journey between London and Bath, the inventor would stop whenever he saw water and fill up his tanks, not knowing when he would have another chance. It made the machine puff with justifiable pride to rest in dignified ease while eight mechanics and eight gentlemen in tall hats and long frock coats ranged themselves in line and passed buckets from a pond on the other side of a hedge. This journey was undertaken under the auspices of the Quartermaster-General of the Army, who wished to test the value of the steam carriage for military purposes, and the Army authorities considered the experiment supremely successful. All the arguments against the new device were disproved at the outset. A complication with a mail coach and a pile of bricks broke part of the machinery, and almost the entire journey was made with the power of only one wheel. At the first stage of the trip, the motor vehicle met and passed twenty-one carts, seven wagons, two post chaises, four mail coaches, seven stage coaches, one two-horse dray, three gigs and six horses, and the report triumphantly asserts that not a single horse started or was disturbed except in the preliminary mix-up. An average speed of ten miles an hour was maintained with ease, and in spurts the machine went at the rate of between twenty and thirty miles an hour.

Coke was sometimes not obtainable, and it was necessary to use coal. In such circumstances, as even Lieutenant-Colonel Sir C. W. Dance, the enthusiastic inspector and subsequent patron of Gurney, admitted, the steam carriage might be a nuisance. It poured out clouds of smoke, and in the dark "some sparks flew up the chimney which made the appearance of a beautiful firework. This would be highly objectionable and dangerous to thatches or haystacks, but it can never happen with coke." It is noteworthy that Gurney, whose fertility of mind made him an Edison of his time, regarded the clumsy fuel he was compelled to use, and even the whole system of steam propulsion, as a passing makeshift. He distinctly foresaw the improved motors of to-day. In his testimony before a Parliamentary Committee in 1831, he was asked:—"Do you apprehend much decrease in the price of your engines?" He responded: "I do, and I also anticipate that steam will be supplemented by the use of other elementary power; but I do not think that will take place in our day. I think that steam will be generally introduced, and that the public will feel the importance of it; and that scientific men will be directed to examine and employ in its stead other substances, and new compounds are continually turning up, and some will eventually be applied to mechanical purposes. . . . I do not specify any particular compound at this moment; I state those generally which are known to produce power by chemical change; some peculiarly explosive and aeriform bodies, for instance."

On this memorable trip in July, 1829, the Gurney steam carriage covered the two hundred miles from London to Bath and return with complete success. It ran up the steepest hills with ease, drawing another carriage behind it, at from seven to ten miles an hour, and it covered eighty-two miles in eleven hours, including all stops. Gurney's success was so impressive that within two years from twenty to forty different motor carriages were under construction by different persons, some of them built, as the inventor testified before the Parliamentary Committee, by men "who previously had laughed at the idea and considered it chimerical."

Gurney seems to have anticipated every possible objection. He was asked, for one thing, what would happen if the guide or director fell asleep, or dropped off his seat, or met with some other accident. "I have provided for all these casualties," he replied, "by making the valves of the engine only remain in gear while the guide is in his proper situation. The moment he is thrown off his seat by accident or otherwise, the engine instantly stops." He explained that the engineer's foot held the

valves down, so that simple neglect to attend to his business would stop the machine. The same contrivance enabled the driver by merely lifting his foot to prevent the carriage from running too fast down hill.

In 1831, Sir Charles Dance ran the Gurney carriage between Gloucester and Cheltenham uninterruptedly for three months, as a business arrangement, without a single accident. It covered the distance of nine miles regularly in fifty-five minutes and often in forty-five. Other inventors were working along similar lines, and some of their carriages were also accomplishing profitable commercial work. The sun of the "Automobile Age" seemed rising in a clear sky, when it was suddenly eclipsed by the uprising on all hands of a stubborn prejudice. Turnpike companies discriminated against motor-carriages on their roads, and when the matter came before Parliament, that body, notwithstanding a warmly favourable report from a select committee of the House of Commons which had fully investigated the subject, passed laws which, by means of excessive tolls and absurd regulations, made it impossible for a self-propelled vehicle to be successfully operated on an English highway.

The British lead in automobile construction was abandoned. to be taken up sixty years later by the inventors of France. Gurney, suppressed by the laws that ought to have encouraged him, gave up the subject of motor vehicles in disgust. Long before, he had invented the oxyhydrogen blowpipe and the Drummond light, had anticipated the idea of the electric telegraph, and had made suggestions concerning heat, electricity and gases which secured an acknowledgment of indebtedness from Faraday. Now he took his steam jet which he was not allowed to use on the highways and employed it to put out fires in coal mines, one of which had been burning for thirty years. He ventilated sewers with it. He invented the Gurney stove. He ventilated and lighted the Houses of Parliament on new principles. He devised a flashlight system for lighthouses. He was knighted in 1863 for his services to science, and died in 1875 full of years and honours, but still debarred by the laws of his country from developing the great invention which he had carried so far a half century before. In 1829, grave fears were expressed that the horse might be driven from the highways, to the ruin of British agriculture. When Sir Goldsworthy Gurney died in 1875, the horse as a beast of burden survived him, but it might not have done so if there had been a fair field and no favour. In 1875, the horseless carriage was practically no further advanced than in 1829. But if the inventors of the earlier age had been allowed to go on, there might have been a race of English Fourniers sixty years ago, and the whole history of the world's transportation system might have been written differently.

THE San Francisco Fire Department has just purchased a fast electrical motor-car for the use of its chief.

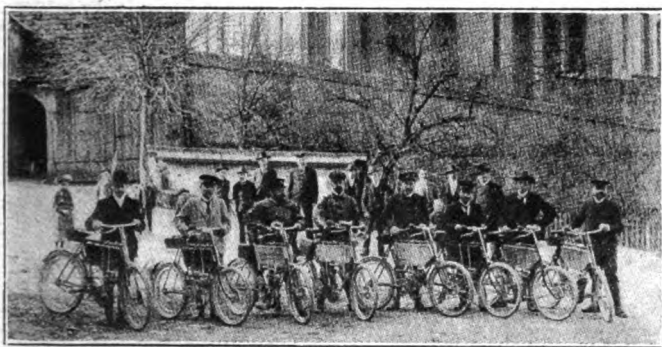
THE Park and Estates Committee has decided to recommend the Birmingham Town Council to restrict the speed of motor vehicles when being driven through the park to eight miles an hour.

WE hear that tenders are about to be called for the supply of a number of public service vehicles for Mysore, India. The cars are to be propelled by steam or petroleum engines and be capable of carrying six passengers and 1,000 lbs. of luggage.

IN a recent issue of the *Motor-Car Journal* we find, says the "Surrey Advertiser," a list of 128 prosecutions for furious driving during a single week, and an editorial note states that space could not be found for about 50 more. Of these 128 cases only seven were dismissed, and the fines (exclusive of costs) imposed upon the remaining 121 totalled £364! Surrey contributed 48 of these 128 cases, and the fines amounted to £135. The cases were heard at the following places: Chertsey, 19 cases, total fines £50; Oxted, 18, £36; Kingston, 4, £15; Epsom, 3, £13; Guildford, 3, £13; Richmond, 1, £10. The highest alleged speed was 32 miles an hour.

MOTOR-CYCLING NEWS.

MOTOR-CYCLE racing again formed interesting items at many of the sports meetings held on Bank Holiday. Some fine riding was seen at the Canning Town track at West Ham, where three events were run off. In the three miles motor-cycle match, J. F. Crundall beat H. Martin by a quarter of a lap. Time (with a flying start), 3 min. 25 1-5 sec. In a one mile motor-cycle match H. Martin beat J. F. Crundall by a yard. Time (with a flying start), 1 min. 9 4-5 sec. The five mile motor-cycle race resulted as follows:—T. Tessier, 1; J. F. Crundall, 2. Time, 5 min. 44 2-5 secs. Tessier, who succeeded in lowering the world's record for the flying mile by one-fifth of a second in his heat, carried the final in easy fashion, again breaking the world's record on his "Bat" machine, this time by two-fifths of a second. A three mile motor-bicycle race at Eastbourne was won by H. H. Frowd, while at St. Albans, F. W. Chase beat T. C. Newman in both a mile and a two mile match, his time for the former being 1 min. 37 1-5 sec., and the latter 3 min. 2-5 sec. At Littlehampton, a three-mile handicap was won by G. Atkins (15 secs. start) who on 2-h.p. Minerva covered the distance in 8 min. 29 secs.



A Group of Motor-Cyclists at Nuremberg, Germany.

THE Motor Cycling Committee of the Cyclists' Touring Club are contemplating the organisation of a motor-cycle tour from Land's End to John o' Groat's, to start towards the latter end of September.

THE Auto-Cycle Club's reliability trials will be held from the 10th to the 22nd August, starting daily from the Crystal Palace to such well-known resorts as Brighton, Eastbourne, Folkestone, Canterbury, Worthing, etc. The distance covered during the trials will be not less than 1,000 miles, and failure to climb certain hills will entail a loss of marks, as will also failure to maintain a speed of 12 miles an hour. Forty-eight entries have been received.

AFTER the speed tests of the machines engaged in the 1,000 miles reliability trial the annual motor-cycle race meeting will be held on the Crystal Palace track on Saturday the 22nd inst. As last year, there will be three events. The first is an hour's race for the Autocar Cup, won last year by Mr. J. van Hooydonk. The race will be an invitation one for motor-bicycles only. The cubic contents of the cylinder must not exceed 343,000 mm., and the weight limit is 114 lbs. Silencers must be fitted, but mudguards need not be used. The second event is a five mile handicap for the "Motor-Car Journal" Cup, at present held by Mr. S. C. Holloway. Entries will be unlimited, but the race is confined to motor-bicycles. Weight limit 170 lbs., and cubic contents 440,000 mm. The third event is for the Automotor Journal Cup, also held by Mr. S. C. Holloway. In addition to the cups, gold, silver, and bronze medals will be presented by the Auto-Cycle Club to the first three riders in each event.

THE Edinburgh and Glasgow Motor Cycle Clubs are organising a joint run to Lanark for Saturday, the 15th inst. A large muster from each city is expected.

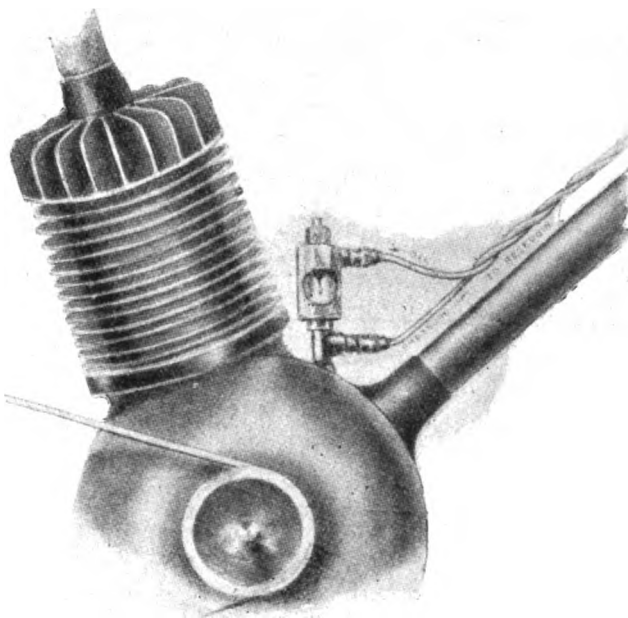
MAJOR VON PROHAZKA, one of the Austrian delegates to the recent congress of touring clubs at the Hague, Holland, journeyed thither by road from Passau, Austria, on his 2½-h.p. Laurin-Klement (Hewetson) motor bicycle, travelling via Regensburg, Nuremberg, Wurzburg, Frankfurt, Wiesbaden, Mainz and Coblenz. The Major also intended to return by road by a different route, but bad weather prevented him from getting further than Frankfurt-am-Main, where, after riding over 800 miles, he had to have recourse to the train.

As an illustration of what the up-to-date motor-bicycle is capable of, the performance of Mr. A. W. Money on his Rex 3-h.p. is worthy of record. This gentleman recently rode his machine from London to Leicester in six hours and ten minutes, pulling a ten-stone man in a trailer. When it is considered that this time includes a stoppage of 45 minutes for refreshment, etc., and that it was an ordinary tourist run without any pre-meditated attempt at record, the ride was undoubtedly a good one.

ALBERT CHAMPION, the erstwhile professional cycle racer, recently covered a mile on his Clement four-cylinder motor-bicycle on the Charles River track, near Boston, Mass., in 58 4-5 seconds.

As showing the growing popularity of motor cycling in America, it may be mentioned that of 3,101 automobile licenses so far issued by the Secretary of the State of New Jersey, upwards of 400 are for motor-cycles.

AN American concern, the Automatic Lubricator Company, of Caxton Building, Chicago, have recently brought out an automatic lubricator for motor-bicycles, which they have named the "Cycoplex." The sight feed shown in the illustration is attached to the crank case by means of a special T-piece, which has a check valve at its upper end, to prevent oil from splashing up the glass, and a back check valve at the side to admit pressure to the oil tank, which may be directly connected by means of small flexible tubes, as shown. The operation is as follows:—During the stroke of the piston there is pressure in the crank case, which is communicated to the oil tank through the lower tube and retained by the back check. From the tank the



oil is forced through the upper tube into the sight feed, and thence through the needle valve, from the point of which it drops into the crank case, being further assisted by the vacuum which occurs at the return stroke of the piston. When the motor stops, the oil ceases to flow automatically, thus doing away with the necessity of a shut-off to be turned by hand, and perhaps forgotten.

THE FOUILLARON PETROL CAR.

WE are this week able to publish illustrations and particulars of a petrol-car which attracted considerable attention at the last Paris Salon. We refer to the

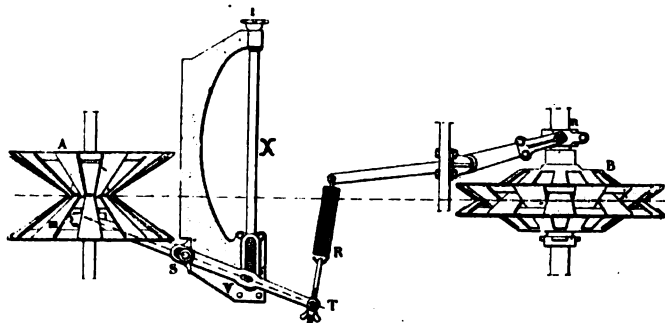


Fig. 1.—The Fouillaron Expanding and Contracting Pulleys.

vehicle made by M. G. Fouillaron, of Levallois-Perret (Seine), the main feature of which is the system of transmission adopted—that of expanding and contracting pulleys. In the Fouillaron car the idea seems to have been worked out in a practical form, and has already won many advocates. The arrangement of two pulleys—one on the motor shaft and the other on the driven shaft, of which one expands in diameter automatically when the other is contracted, and *vice versa* seems the ideal one for petrol vehicles, because it permits a given amount of power to be converted into speed by merely expanding the pulley on the motor shaft, and, obversely, also permits the power actuating the driven shaft to be greatly increased when the motor-shaft pulley is reduced in diameter and the counter-shaft pulley correspondingly enlarged. The arrangement renders all speed gearing superfluous. The tension of the belt is not affected by the operation of the device, but much difficulty has hitherto been experienced with the belt, owing to the fact that it must run on its outer beveled edges, corresponding in their angle with that of the V-shaped pulley face, and in order to get sufficient adhesion to the pulley these edges must be made rather thick, which means that the belt must be stout. Further, as a belt always works toward the position on the pulley where its tension will be at maximum, the two edges will tend to crawl upon the edges of the pulley, and if one of them happens to get the best of the other in this tendency the chances are excellent for the belt stretching, or leaving the pulleys entirely.

M. Fouillaron has, however, tackled this question thoroughly,

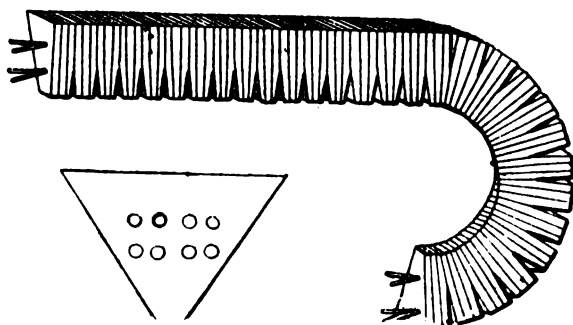


Fig. 2.—The Fouillaron Driving Belt.

and has apparently got over the difficulty by using a specially-designed articulated belt. Fig. 1 shows the pulleys in high-speed position, that on the motor shaft having its largest possible diameter, while the other is contracted, its two component halves being pulled apart to their limit so as to let the belt down between

them. The pulleys are each built up in the shape of two cones formed of interlacing blades. One of the cones of each pair is fixed, while the other can be displaced laterally, giving a variable effective diameter. The driving pulley is fixed directly on the crank shaft of the motor, while the rear one is connected with a pedal-operated clutch. The belt (Fig. 2) is formed of a series of small pieces of leather strung upon three strong cords slightly twisted between each two of the leather pieces so as to prevent them from crowding each other and rendering the belt thick and inflexible. It is triangular in section and angle, and fits the angles of the expanding pulleys. It cannot slip, and is noiseless, while heat and moisture are said to have no effect upon it.

The operation is simple. Under the steering wheel another hand wheel controls by a bevel-gear shaft and a chain the sprocket wheel I on the end of the shaft X. This shaft is screw-threaded at V and engages a nut with a lug, the latter entering a short slot in the lever S T, turning this lever round the fulcrum S according to the direction of the movement of the screw nut. When in this manner the point T descends, the point m rises; that is, the pulley at this end is pushed together, thereby increasing its diameter. At the same time the other pulley is opened partly by the pressure of the belt and partly by the lever Rn. By means of the thumb-screw at T the tension of the belt may be regulated, the helical tension spring at R permitting the pulley B to expand without corresponding contraction of pulley A. The reverse

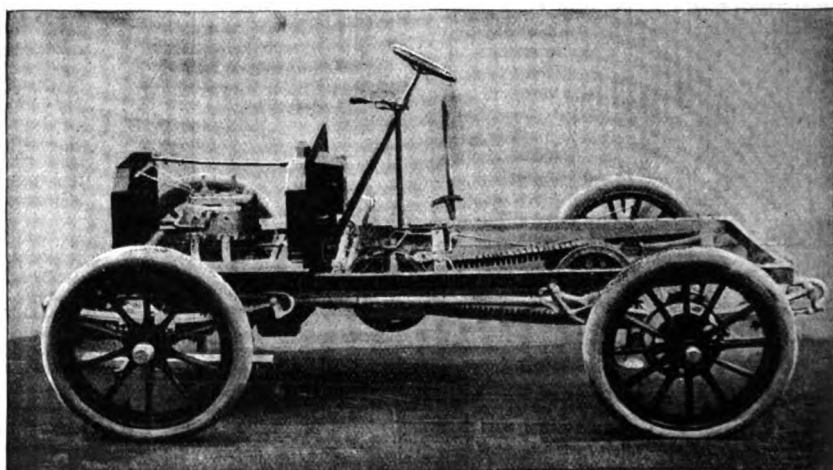


Fig. 3.—Chassis of Fouillaron Car.

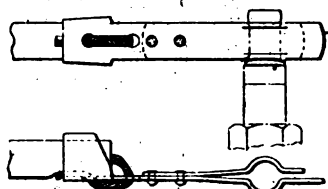
motion is obtained by first disconnecting the clutch; by pressing down a pedal a jaw clutch connects the driven clutch with the left-hand shaft of the differential. This movement causes the sprocket on the shaft to run free; the brake on the differential is then applied, the clutch pedal being still kept down; the power is thus transmitted through the rear expanding pulley, now fast on the left hand of the shaft, to the bevel pinion on the inner end of the latter; thus the other gears in the differential box run in a reverse direction, so causing the car to travel backwards.

The Fouillaron car is made in a number of sizes, ranging from 6-h.p. to 16-h.p. The illustration on page 448 shows the two-cylinder 12-h.p. tonneau. The frame is built of wood and steel, the motor being carried in the fore part under one of the latest types of motor bonnets. By means of the expanding pulley device any desired rate of speed may be obtained. The ignition, water-cooling, steering, brakes, etc., all follow the standard lines. The vehicle is not merely an experiment, for early last year one successfully made a 2,500-mile tour of France, while at Deauville a speed of 56 miles an hour was attained.

At the Grand Hotel, Herne Bay, Mr. E. M. Thierry has established a garage with workshop and inspection pit. He has a qualified engineer to attend to repair work, and will also supply petrol, accessories, etc.

HERE AND THERE.

MR. JOSEPH TRACY, of 513, Seventh Avenue, New York, has sent us particulars of the new device he has brought out for connecting the high tension wire to the sparking plug, illustrated herewith. The advantages claimed are that the connection can be made by simply slipping the connector in place, and that there is no danger of breaking the wires at the joint. When used in association with a De Dion sparking plug a small brass plug is secured to the top of the sparking plug proper by means of a screw, as shown. The brass plug has a cylindrical central portion and a ridge or enlarged portion at each end. The con-



connector proper consists of two strips of sheet brass riveted together and pressed to form a collar or sleeve near the outer ends, to fit round the brass plug referred to. One of the strips is made of spring brass and the other of soft brass, in order that they may be bent together again if they should become separated. It will be noticed that the stranded conductor of the cable is not soldered to the connector. The larger one of the two brass strips is clamped round the rubber insulation of the wire and the bared end of the conductor is passed through a hole in the strip and elased between the strip and the rubber.

AT Kington, Herefordshire, Mr. George Fryer has established a garage and is well equipped for the repair of cars. He has also several agencies and supplies petrol, spare parts, etc.

RUMOURS of a malicious kind having been circulated with reference to the Road Carrying Co., Ltd., we are requested to state that they have no foundation and cannot be substantiated.

ACCORDING to a Continental contemporary the Austrian Daimler Company, Neustadt, Vienna, has received an order from the British War Office for a number of petrol motor-wagons.

FROM Messrs. Siemens Brothers and Company, Limited, comes an interesting pamphlet in which the Schiemann system of electrical vehicles is described, the necessary current for their propulsion being taken from an overhead conductor, the same as electric tramways.

MESSRS. DURHAM, CHURCHILL AND CO., of Sheffield, are now devoting themselves to the production of motor-car parts, comprising live axles, change-speed gears, steering axles, etc., for the trade. A special plant for the cutting of spur and bevel wheels has been put down.

THE F. H. Smith Patents Company, Limited, has been registered with a capital of £6,000 to acquire from Mr. F. H. Smith, of Datchet, the benefit of certain inventions relating to carburettors for petrol motors and otherwise, and to carry on the business of manufacturers of and dealers in carburettors for petrol motors, etc.

MESSRS. JULIUS HARVEY AND CO. have just shipped a special 6-ton steam motor wagon for use abroad. The vehicle was thoroughly tested before despatch with a full load, one trial being on a long hill with gradients of 1 in 7, which was successfully negotiated both up and down. With a trailer this vehicle was found capable of taking a load of 9 to 10 tons.

SINCE the Bailey law came into effect in April last 6,410 persons have certified to the Secretary of the State of New York that they own automobiles, and 1,698 have made applications for operators' certificates, which have been granted. As each applicant for an owner's or operator's certificate is required to pay one dollar, the State derives considerable revenue from the operation of the law.

A BURST tyre has caused a serious accident to a party of Yorkshire motorists touring in Shakespeare's country.

THE German Automobile Club is presenting gold medals to the drivers of the German cars in the Gordon Bennett race.

MESSRS. J. B. CORNEY AND CO., of 20, John Street, Adelphi, W.C., are about to open a garage and repairing shop in the West End.

ON Wednesday next the Cheltenham and Gloucestershire Club will have a run to Bourton-on-the-Water and to Andoversford.

THE Rhenish Automobile Club will hold a hill-climbing competition up the Kutzenbuckel, the highest hill in the Odenwald, at the end of September.

AT Burwash, Sussex, Messrs. S. Hyland and Co. have a workshop always open for the convenience of motorists in trouble. They also stock motor spirit and spare parts.

THE street commissioners of San Francisco, Cal., are making investigations in connection with a proposed regulation which will make it a misdemeanour to operate a petrol motor-car having a leaky fuel tank.

MR. O'CALLAGHAM, of Swords, Co. Dublin, was committed for trial at Dublin on Tuesday on a charge of causing the death of a boy by knocking him off his bicycle with a motor-car in Phoenix-park and driving over him.

ON another page we reproduce an article by Mr. S. B. Moffett in the "Automobile Magazine," in which some interesting particulars are given of the Gurney steam carriage which made its appearance in the early part of the last century.

THE American Automobile Association and the Automobile Club of America have both adopted club buttons of new design. The A. A. A. button is a miniature gold gear wheel, while the A. C. A. design shows a miniature automobile wheel in gold.

MR. H. F. JOEL has completed arrangements for the charging and for the garage of electric cars at 51, Wilson Street, Finsbury, E.C. Current can be supplied at any pressure up to 150 volts, and in any quantity to 100 amperes. Charging can be carried out at any time between 8 a.m. and 6.30 p.m., and repairs to batteries or cars can be undertaken.

NEW arrangements designed to provide an external gap in the high-tension ignition circuit continue to make their appearance, three new ones being illustrated herewith. Fig. 1 shows that introduced by the Ormonde Motor Co., of Well Street, W.; as will be seen, one end is adapted to fit on the plug, while to the other is attached the high-tension wire. The gap is surrounded

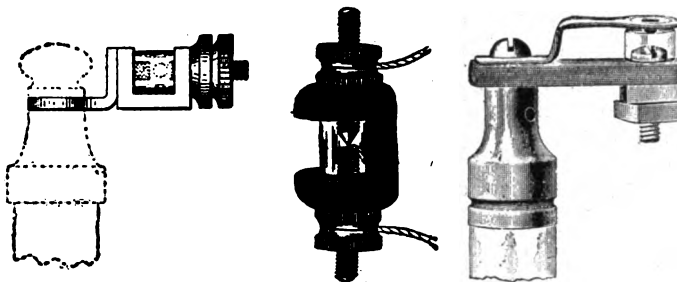


Fig. 1.

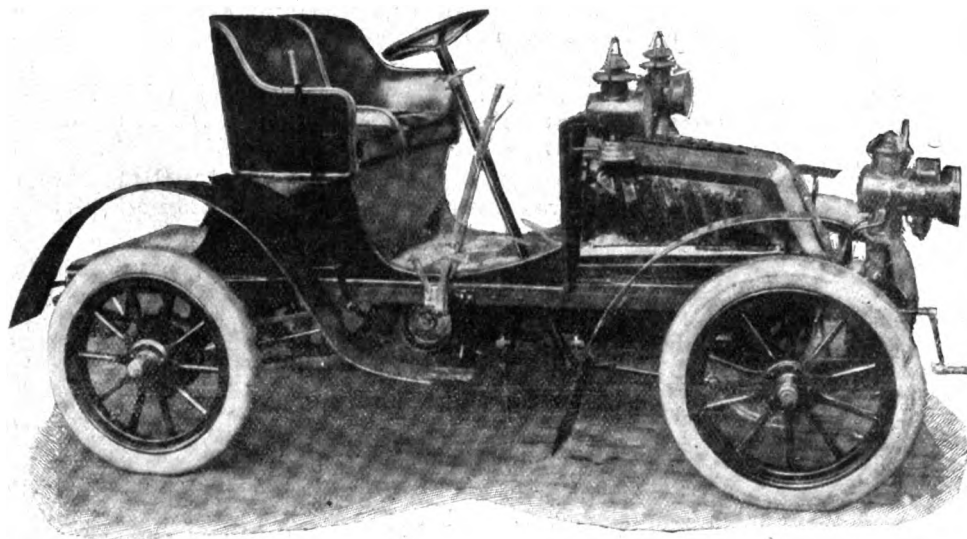
Fig. 2.

Fig. 3.

by a small glass tube. Fig. 2 illustrates the E. J. intensifier made by Mr. E. J. Willis, of 8, Park Place, New York. A wire from the coil is attached to one end, while to the other is fastened a wire leading to the plug. The gap is adjustable and is enclosed in a small glass tube. Fig. 3 shows another device which is attached to the plug and in which the gap is enclosed. It is made by the Star Supply Co., of Attleboro, Mass., U.S.A.

MARIN COUNTY, California, has secured a place on the list for the enactment of freak automobile regulations, by issuing an order prohibiting motor-cars from using the roads between sunset and sunrise. The Automobile Club of California has decided to test the legality of the regulation in the case of one of its members who was arrested for being out at 9 o'clock one evening.

THE accompanying illustration shows the little car which the Canterbury Motor-Car Company has lately introduced to meet the demand for a reliable little vehicle at a popular price. The motive power is supplied by a 6-h.p. De Dion, or 6½-h.p. Aster engine set in the forepart of the frame under the bonnet. The water circulation is normal and maintained by a pump and radiator, but is so arranged that should the pump fail it will continue



The "Canterbury" Light Car.

on the thermo-syphon system; the water tank being placed well above the engine. Three speeds forward and a reverse, controlled by a lever at the side, are provided, the power being transmitted through a clutch, gear box, cardan shaft, and bevel gear to the rear live axle. On the high gear the power is transmitted direct, and it is claimed that by means of the throttle any desired speed from 6 to 20 miles per hour can be obtained with the third speed in gear. A pedal-actuated band brake is fitted on the countershaft, while a hand lever controls internally expanding brakes inside drums connected to the hubs of the rear wheels. All the brakes are of the double-acting variety, and are so connected that the first result of applying either the hand or foot brakes is to withdraw the clutch and thus disconnect the engine from the transmission mechanism. The car is furnished with a two-seated body as illustrated, or can be provided with a tonneau. Mr. H. Pavillet, of the Canterbury Company, informs us that since the exhibition at the Agricultural Hall in March last he has driven one of these cars several thousand miles, with no more trouble than the breaking of a trembler.

MOTOR vehicles were shown at the South Kildare Show by Messrs. Duthie and Large, of Athy.

THE Wolverhampton and District Automobile Club will hold a run to Kinver to-day (Saturday).

A NEW catalogue of the White steam car has been issued which should be of interest to motorists generally. It is arranged and produced in an effective style, letterpress and illustrations alike being good.

A COMMITTEE of local residents has been formed at Gohren, near Leipzig, with the object of organising a public service of motor-cars between the two places.

THE Cleveland Trust Company, a leading banking institution in Cleveland, O., has placed in service an electric motor delivery wagon for carrying packages of valuables to and from the storage and safe deposit vaults of the company.

PRINCE FRIEDRICH VON HOHENZOLLERN has lately acquired a 10-h.p. Benz-Parsifal car.

THE Bournemouth Corporation has recently put a motor street watering cart in service.

TO-DAY (Saturday) the members of the Sheffield Automobile Club will hold a run to Matlock Bath.

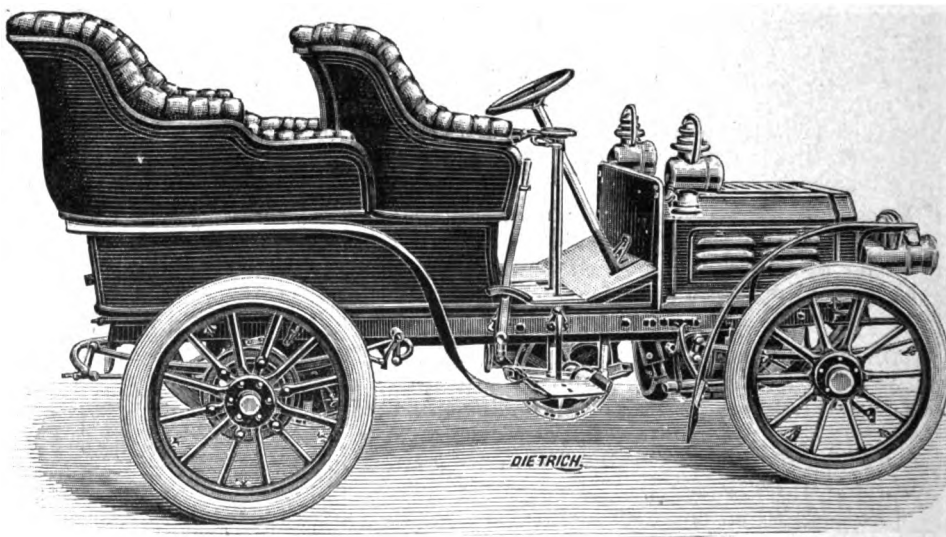
Mr. T. H. HOLDING's specialities in motor clothing can be obtained from Messrs. Farman and Co., Long Acre, W.C.

A PIT for automobile inspection has been established at the White Hart Hotel, Banbury.

LORD FITZHARDINGE regards automobiles as "hateful, stinking murder cars." No wonder there is a good deal of scepticism among motorists as to the kind of justice with which they are likely to be treated.

IN the course of the discussion of the Motor-Car Bill in the House of Commons on Tuesday, Mr. C. J. Murray said the motor industry had taken root in his constituency (Coventry), and employed some 2,500 workmen, who produced last year 8,000 motors.

SINCE the Irish Fortnight Mr. A. Govan, of the Hozier Engineering Company, has been touring on the 16-h.p. Argyll car which ran in the Phoenix Park Races, and during twelve days covered just on 1,400 miles. Leaving Glasgow, he ran south *via* Carlisle, Kendal, Leeds, Nottingham, London, to Littlehampton, where he stayed a few days, using the car to run backward and forward to London. From Littlehampton he returned to the north *via* Brighton, London, Reading, Southsea, Bristol, Cardiff, Gloucester, Worcester, Birmingham, Manchester, and Bowness (where a day was spent), Carlisle and Lockerbie. This test amply proves that although the new Argyll car, for its horse power, is exceedingly fast, it is also reliable.



The Foulmaron Motor Car. (See page 446.)

THE Crabbe Brake Company, Limited, has been registered with a capital of £35,000, to acquire that branch of the business carried on by Components, Limited, which relates to the manufacture of Crabbe Brakes; to adopt an agreement between Components, Limited, of the first part, F. Warwick of the second part, C. T. B. Sangster of the third part, and H. Witton (for this company) of the fourth part; and to carry on the business of manufacturers of and dealers in the Crabbe Brake and all kinds of motor-car and other brakes.

THE HORSE POWER OF PETROL MOTORS.

THE article we published on this subject in our issue of the 25th ult. is attracting considerable attention. In our last number we published the views of the Star Engineering Company and the Duryea Motor Carriage Company on this important question, and below will be found the opinions of two other well-known British automobile designers.

Mr. Maudslay Brooke, of Messrs. J. W. Brooke and Company, Limited, Lowestoft, writes:—"I have read with very much interest the article in your issue of the 25th ult., on the h.p. rating of petrol motors. I am very glad indeed to see that you have introduced this subject, and hope now that it may be carried to an issue, for there is not the slightest doubt that it is one that requires to be put on a firm basis. It will have two results: first, the purchaser will know what he is buying, and second, it will not give one manufacturer an unfair advantage over another.

"With our own cars I have had a difficulty and have not the slightest doubt other manufacturers have had the same. Our early motors at normal speed gave 13½ h.p., we called them 10; our new motors gave 14 to 14½ h.p., we called these 12. Messrs. Wellington come along and take our output and call the motors by their actual h.p., viz., 14, but all the time the purchaser is none the wiser and possibly thinks that there is an actual difference in the powers of the motors. My object in understating the h.p. was that a 10 h.p. Brooke should be a little better than a 10 h.p. something else, and of course I know for a fact that other makers were understating their h.p.

"It is difficult to know exactly how to overcome the difficulty, but it appears to me that the system suggested by M. Hospitalier is the correct one, except that his standard would not be in accordance with modern practice. I find that the Brooke motor works out 155 litres per min. per h.p. piston displacement, which you will see is below the average given in your table, and is no doubt accounted for by the fact that I have taken the actual h.p., whereas the others are evidently the assumed h.p., which are generally understated.

"If the Automobile Club would insist that the h.p. of all cars taking part in their trials should be stated on a basis originated by them, I have no doubt it would soon become a standard in this country, and if carried out on the lines suggested by M. Hospitalier it would be a simple matter to make the calculation for any foreign cars brought into this country. Of course it would be necessary for the manufacturer to give the normal speed of his engine—that is to say, the speed at which the claimed top speed is obtained."

Mr. Alec Govan, of the Hozier Engineering Co., Ltd., writes:—"With regard to your article on the horse power of petrol motors, you are opening up a very wide question full of controversy. I do not consider it possible or desirable at the present stage of the industry to lay down a formula to determine the horse power of motors, my reason being that different makers have arrived at various speed maximums, each one maintaining that the firm who run their engines faster than they do are knocking the engines to pieces. While this argument is getting a bit antiquated, it still flourishes in some quarters, but the fact remains that, generally speaking, the average speed at which motors are being run is gradually being accelerated, and what was considered a fast speed yesterday is to-day accepted as being a reasonable rate. So long as the controversy continues, both the cylinder capacity and the cylinder displacement would be misleading to the public, because it has been amply demonstrated that where one firm has failed to make a satisfactory high speed engine another firm has made it a great success, and of course, generally speaking, the greater the speed the greater the efficiency, providing that the engines are properly made to stand the speed.

"The two remaining factors in connection with the motor are weight of the vehicle and efficiency of transmission. Here again opinions widely differ, and the popular fallacy still exists that weight means reliability; nothing could be more

misleading. A slow running engine means a heavy engine, a heavy engine means heavy frame and axles to transmit the power at the slow speed, the result being an inefficient car, and, owing to its own weight, although the factor of safety might be the same as in the lighter vehicle with the higher speed engine, it is not a bit more reliable. In conclusion, my views therefore are that the designer who can get the most out of a given cylinder capacity deserves the greatest credit. The history of engine speeds proves that it is mere presumption on the part of any man to say that any speed is too fast. With regard to the efficiency of transmission, this can only be tested on mechanism designed for the purpose, but there can be no doubt that the



Count and Countess Poninski on their Renault Car on which they recently toured from Nice to Dresden

[Automobil Welt.]

light vehicle makes the most efficient car, and is the least expensive to run. Still further, a greater efficiency can be got out of a given cylinder capacity, and this is the factor that would make any formula devised misleading to the public."

MESSRS. RAWLINGS BROS., LIMITED, inform us that at their establishments at 82, Gloucester Road, South Kensington, and at 165, Sloane Street, Chelsea, facilities are now available for the charging of batteries of electric vehicles at all times. Current up to 400 amperes can be supplied at any pressure not exceeding 200 volts.

THE Engineering Standards Committee have decided to form a sub-committee, with Mr. Worby Beaumont as chairman, to deal with the question of the standardisation of the size, weight, power and E.M.F. of the boxes of accumulators that are necessary to drive electrical motor vehicles. Lieut.-Colonel R. E. Crompton considers that the electromobile in its present form only requires careful management in one point, that is as regards the care of the accumulators, and that in our present state of knowledge all that is necessary to deal with this defect is that the users should have as little to do with the charging, care, and upkeep of the accumulators as possible; in other words, that the future of electromobilism is at present solely a question of the establishment of suitable organisations for the furnishing at many charging centres of properly charged accumulators, which can be readily put into any vehicle at a few minutes' notice.

CORRESPONDENCE.

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 25th July the Duryea Motor Carriage Company are wrong in saying that I am getting away from the original argument with regard to motor-car racing. I should like to have the Duryea Company's proof that the firms I mentioned in my last letter have given up horizontal engines in place of vertical ones "because the latter is fashionable."

They say that they would like to know where I get my figures from, namely, £4,320,000 as a result of France winning the Paris-Berlin race. I refer the Duryea Company to page 240 of the "Motorist's Year Book." I will quote the sentence:—"Consul-General Inglis has officially stated that the actual result of the Paris-Berlin race was the placing of orders with French firms to the value of £4,320,000." Surely he would never put this into print if it were not true.

I never said that in a race any car was silent. What I said was, that a fast car need not be noisy. Look at Mr. Cordingley's 40-h.p. Mercedes? Surely this would be considered a fast car, and at the same time a very silent one. Compare the car I have just mentioned with a 40-h.p. Panhard (Paris-Berlin type). Both cars the same power, one like a steam car, the other like a Gatling gun. Manufacturers saw the Mercedes at last year's Nice week, copied it, and consequently we have fast, high-powered cars to-day, and at the same time silent ones.

I don't doubt for one minute that Jenatzy's car was very noisy,

There will in all probability be a conference of provincial clubs (attended by representatives, as agreed upon to date, of eight clubs from all parts of England, and possibly of more), held in London in October, to debate this question and make, with all due deference, suggestions to the A.C.G.B.I. about the terms of affiliation. It is very much to be hoped that the time, trouble, and expense incurred will receive the attention its representative character will warrant.—Yours truly,

EDWARD CRAGG,
Hon. Sec. Lincolnshire Automobile Club.

EXAGGERATED REPORTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should like to draw the attention of the readers of *The Motor-Car Journal* to the infamous reports of accidents which happen to cars in the daily papers. Being a driver in the employ of a well-known doctor in Leatherhead, I was driving last Saturday week toward Effingham, and in coming to a cross road which leads from Leatherhead to Guildford, by the "Blucher Inn" at Effingham, I was requested to slow up by my employer and I did so. I had blown the horn a few seconds before and was just about to cross the road (which was chalky and greasy at the time) at about six or seven miles an hour, when a pony trap coming from the direction of Guildford came out in front of me. The pony was trotting as fast as it could go, and the driver, instead of going on as he should have done, slowed up in front of me. Up to this time I did not apply the brake, because of the nature of the road and thinking that the trap



A "Maurer-Union" Car in the Austrian Tyrol.



Auto mobil Welt.

TOURING SNAPSHOTS.

but get the car ready for touring and then hear the difference, although it is 60 odd horse power. Do the Duryea Company mean to insinuate that because the Mercedes Company have adopted throttle control, it is a copy of their cars? Why do they say that as much credit goes to England as to Germany in connection with the Goraon Bennett race? Germany won, England lost, and therefore let us own up like men and acknowledge that the German car was faster and more reliable than ours, and don't let us go looking round for excuses that are "non est," and say that if the tyres, etc., had been all-right we should have won. This, in my opinion, is a very un-English and unsportsmanlike way of taking a beating.—Yours truly,

ST. J. C. NIXON.

AFFILIATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have had opportunities in the past few weeks of talking over the affiliation question with one or two members of the A.C.G.B.I. who are not members of this club. The reply in each case made to my statements on the question has been, "But do you not have various privileges, such as the use of the club or garage for certain limited periods in return for your affiliation fee?" It is obvious that some members of the A.C.G.B.I. at least are in favour of a reasonable settlement of this burning question.

We disclaim any idea of opposition to the A.C.G.B.I., which would be a mistaken attitude to assume when the Club is doing so much for automobilism. But there is a very general feeling among provincial clubs that there should be some recognised terms of affiliation, where, if something is given on one side, an adequate return is made on the other.

would go on; but when I saw it pull up I applied the brake rather hard; when about a yard and a half from the trap the wire which operated it broke and the car slowly collided with the back wheel of the trap. The starting handle of the car caught in the felloe of the trap wheel and the pony in trying to get away bent it round, so releasing the car from the trap. I noticed, as the car was released, that the driver was still in the trap, then, being on a slight gradient, the car ran on a few yards, my side brakes slipping. I stopped the engine and walked back to see if any damage had been done. The owner of the trap was walking round, the axle was bent, but everything else was intact. After this the owner drove the trap five miles without it being touched, although he seemed to be, well—very much shaken. I did not notice any mud on his clothes to denote that he had been thrown out, but the report which appeared in the local paper ran like this:—

"A NARROW ESCAPE.—On Saturday morning last an accident occurred, which might have possibly resulted in very serious consequences, between a motor-car belonging to Dr. A. R. S. Freeland, and a pony trap belonging to, and driven by, Mr. T. J. Leavey, of Leatherhead. The scene of the accident was the cross roads at the 'Blucher Inn,' on the Effingham Road. Mr. Leavey was proceeding toward Leatherhead when the motor-car shot out from the cross road and dashed into his trap, smashing it to pieces and throwing him into the road, only just escaping from striking his head against a brick wall, but happily he was only shaken, and was able to walk home all right."

I am sure this is only one case out of hundreds, but it is this reporting business that makes people absolutely frightened of motor-cars.—Yours truly,

J. E. SCALES.

DE DION GEAR QUERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—When the high-speed clutches of a De Dion gear are put into action a peculiar singing sound is produced, this varying in intensity in different cars. In my little car the sound is, I should think, ten times louder than that produced by any other I have ever heard. Can any of your readers tell me the cause of this and the remedy?

The fibre bands upon the clutch blocks have never been renewed. They appear to be quite good after running about 19,000 miles, and they grip quite well. If the fibre requires renewal, how can the strips sold for the purpose be bent into shape? I have tried boiling water, but it does not make them sufficiently pliant. When the fibre strips have been bent and fixed in place I suppose they must be turned up on a face plate?—Yours truly,

G. WASHINGTON ISAACS.

"AUDIBLE WARNING."

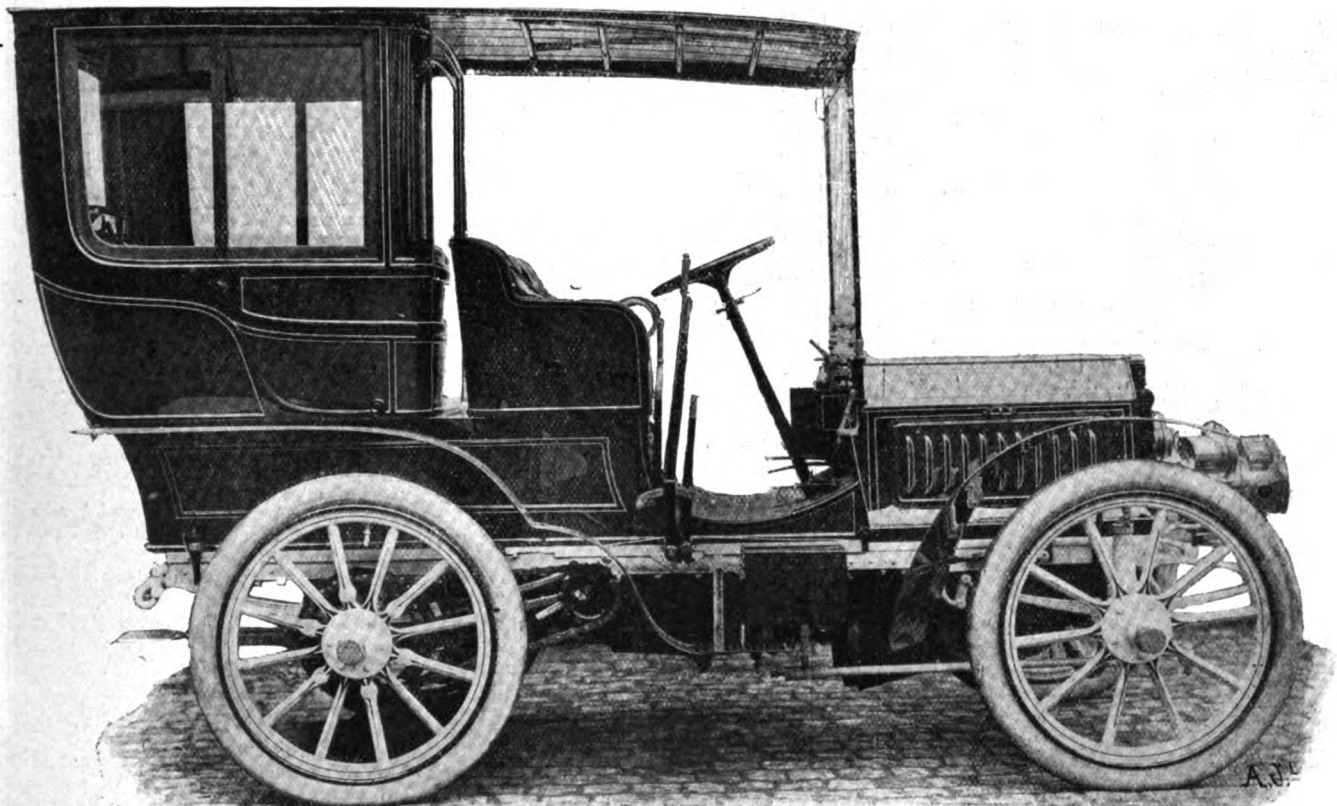
DR. LAWTON, Birkenhead, was summoned at the Neston (Cheshire) Petty Sessions, under the Light Locomotives Act, for being in charge of

police. Witness was the owner of three motor-cars and a motor-bicycle. Other witnesses who did not witness the accident, but who were in the vicinity, gave evidence that defendant continually sounded his horn. The Bench dismissed the case.

MOTOR VEHICLES AT THE ROYAL LANCASHIRE AGRICULTURAL SHOW.

At the show of the Royal Lancashire Agricultural Society, which concluded this week at Manchester, one of the most interesting departments was undoubtedly that devoted to motor vehicles. It has been for long alleged that to have seen one agricultural show meant to have seen all, but this criticism no longer obtains. In passing over the ground at Old Trafford our representative made one or two notes, as follows:—

Messrs. Cockshott and Co., Limited, of New Bridge Street, Manchester, had an excellent display of the "Stanley" steam cars, and "Rex," "Velox," and "Northern" petrol vehicles. Messrs. J. A. Lawton and Co., of Liverpool, also showed a "Velox," with aluminium body, as well as examples of the latest Daimlers and Panhards. Petrol cars were also shown by the Vulcan Motor Company, of Southport. Messrs. Hayes and Son, Scotgate Works, Stamford, had on view an electric-propelled cart, adapted



The Germain 15-h.p. four-cylinder Limousine.

a motor-car and failing to give audible and sufficient warning when necessary of the approach of the car on July 15th at Barnston. W. Williams, gardener at Oxton, said he was walking along the Barnston road when he was knocked down from behind by a motor-car. He heard no alarm or warning. Esther Newby said she was in company with the last witness, and she too was knocked down. She heard no bell or horn, or sound of warning. Witness was walking next to the road. The motor-car went into the ditch. Sergeant Dorrick said he saw Williams, who had a cut on the head. The place referred to was right on the top of Barnston Dale. At this point witness measured the road, and found that it was 4½ yards wide. The road was perfectly straight, and there was nothing to prevent a person observing the road for some distance in front. For the defence Dr. Lawton said he came through Barnston between seven and eight o'clock. Witness sounded his horn continually coming through the village, and all the way up the hill. When he got to the top he saw the couple walking along, and he sounded his horn 20 or 30 yards from them. Just as the car was passing them the young lady, who was nearest the hedge, gave the man what appeared to be a playful push, causing him to step out into the road. The splash-board of the car caught him, and carried him some distance, the car eventually landing in the ditch. Witness was not going at more than eight miles an hour. The young lady was not knocked down. Witness took the man home and put him to bed, and afterwards compensated him, before he heard of any proceedings being taken by the

for bread delivery. A large and interesting display of heavy vehicles was made, the exhibitors including the "Hercules" Motor Wagon Company, Manchester, who had on view one of their steam wagons, which will readily carry five tons and draw a trailer carrying three tons; Messrs. C. and A. Musker, Ltd., Liverpool; the Lancashire Steam Motor Company, and Mann's Patent Steam Cart and Wagon Company, Leeds. A novelty was the motor lawn-mower, shown by Messrs. Thomas Green and Sons, Leeds.

CLAIM FOR DAMAGES.

AN action for the recovery of damages for personal injuries alleged to have been caused through the negligence of the defendants in the driving of a motor-car was brought by Thomas Guest, collier, of Glasshoughton, against Messrs. Wharam and Barland, of the Grove Engineering Works, Claypit Lane, Leeds, at the West Riding Assize Court. The ground of the claim was that in consequence of the negligent and unskilful driving of a motor-car by the defendants the plaintiff was knocked down and received severe personal injuries. The defence was a denial of negligence, the contention being that if the plaintiff had suffered any damage it was due to his own want of care. In summing up his lordship said if the case was a specimen of what the courts were to deal with, it was clear that motor-car accidents were going to be most difficult problems to solve. The jury returned a verdict in favour of the plaintiff for £250, and his lordship gave judgment accordingly.

FURIOUS DRIVING CASES. MOTOR-CARS.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Winchester	L. D'Oyley Carte, Savoy Theatre	—	£5.
"	A. J. Bird, Birmingham	—	£5.
East Grinstead.....	F. C. Hoyles, Grosvenor Square, W.	26	£3, etc.
"	P. Seal, Enfield	21	£3, etc.
Henley-in-Arden	A. D. Isaacs, Sutton Coldfield	25	£1, etc.
"	A. Lewis, Small Heath	—	Adjourned.
Tonbridge ...	A. E. Creese, Peckham	23	£5, etc.
Alresford.....	T. S. Brewer (driver to Colonel Craddock)	30	50s., etc.
Guildford ...	Earl of Ilchester, Kensington	23	£3, etc.
"	Capt. W. Smith, Chichester	20	£3, etc.
"	S. F. Lynch, Kensington	16	£1.
Daventry	T. B. Browne, Earl's Court	17	£5, etc.
Corwen	G. Chapman, Maidenhead	—	£10.
"	Dr. Lehewess	30	£5.
Windsor	G. Chapman, Maidenhead	—	£5.
Grantham ...	E. Estcourt, Wroxham	—	£5, etc.
"	G. Hughes, Doncaster	—	£3, etc.
"	A. J. C. Farle, Lanark	—	£3, etc.
"	J. Bandy, Newcastle-on-Tyne	—	£3, etc.
"	C. A. Schenck, Wallingford	—	£3, etc.
"	P. Kidner, Maida Vale, W.	—	£3, etc.
Odiham	C. S. Sadgrove (driver to Mr. E. Williamson)	—	Dismissed.
"	W. Hobbs (driver to Mr. Lionel Phillips)	18	Dismissed.
Birkenhead...	W. Duckworth	25	Dismissed.
Richmond ...	G. Villot, London, W.	20	£1, etc.
"	Grahame White	19	£1, etc.
"	G. Hubert, London, W.	21	£1, etc.
Garstang	J. G. Kitchen	16	£1, etc.
"	G. H. Bryant	21	£5, etc.
Wiston	J. W. Hayton, Carlisle	—	28s.
Marlborough St., London	Mrs. S. F. Edge	18	£3.
Winchester...	W. Brewer, Windsor	29	£5, etc.
"	H. A. Cox, Southampton	22	£2, etc.
"	H. Ashley, Southampton	25	£3, etc.
"	J. Oakley, Kensington	24	£5, etc.
"	W. B. Avery, Windsor	23	£5, etc.
Otley	S. Dixon, Bradford	—	40s., etc.
Kingston	J. F. Champion	23	£4.
Croydon	B. G. Askew, Forest Hill	22	£1, etc.
"	W. Archer, Penge	19	£1, etc.
Marylebone	P. Walker, Walthamstow	14	£3.
Norman Cross	W. Talbot, West Brompton	24	£5.

MOTOR-CYCLES.

Garstang	N. Roberts	16	£2, etc.
"	R. Coates	20	£2, etc.
Neath	C. Russell, Port Talbot	18	10s., etc.
Croydon	H. A. Graydon, Croydon	45	£1 9s. 6d.
Henley-in-Arden	A. H. Darlston, Birmingham	—	8s. costs.
Wexford	J. Kilroy, Wexford	12	20s., etc.
Southampton	R. C. Pearson, Southsea	—	20s., etc.
Leicester ...	H. O. Parker, Melbourne	—	£2, etc.

Where no alleged speed is given it is understood to be above the legal limit.

GERARD CHAPMAN, of Maidenhead, appeared before the Windsor magistrates on Monday for driving his motor-car at a greater speed than twelve miles an hour. The defendant, who answered a warrant, said that he did not appear in answer to the summons as his car broke down on the way to the court. Head-constable Nicholls stated that according to the newspapers, the defendant was fined £10 and costs on Friday last in Wales for a similar offence. The defendant: I am afraid that was so. It would have cost me about £4 to go down to defend the case, so I let it go by default. The magistrates fined him £5 including costs.

THE adjourned hearing of the charge against the Earl of Ilchester of driving a motor-car at excessive speed at Stoke-next-Guildford on June 12th took place before the Guildford County Bench on Saturday, when his Lordship was fined £3 for the speed offence and £3 for endeavouring to get away from the police. Sergeant Jarrett, giving further evidence, stated that his measured distance of 176 yards included the dangerous

Boxgrove Road, which was in the middle of the course. The speed was twenty-three miles an hour. When the uniformed constable at witness's signal stepped into the road to stop the car it ran backwards in an attempt to rush the police at about twelve miles an hour. The Earl of Ilchester was cross-examined by the redoubtable Sergeant Jarrett, who asked:—Do you think I should have hung on to the car if I had been satisfied?—You ought to have been satisfied. Jarrett: Is it usual for an innocent man to run away from the police? His lordship hesitated, and Jarrett added, "Answer my question, please." Lord Ilchester: I was not running away from the police. Did you not think it very disrespectful to call a policeman worse than a crossing-sweeper?—I did not say so. If I said anything of the kind, it was with reference to the setting of motor traps. Viscount Knutsford (a magistrate): The sergeant was stationed there, and it was his duty, and I can't see why he should be abused for doing that. After a short consultation, the Chairman (Sir William Chance), in passing judgment, said that Lord Ilchester was not, as stated, exactly rushing the police, still they thought he was trying to get away. Sergeant Jarrett was perfectly right in trying to get the driver's name.

THE MIDLAND HILL CLIMB.

THE official results of this contest are as follows, although at the moment of writing the actual winner of the President's Cup had not been made known:—

Car.	Weight. Lbs.	Net Time. Secs.	Score.
1. 20-h.p. Napier	3,864	115.8	599
2. 10-h.p. Lanchester	3,110	265.8	854
3. 10-h.p. Lanchester	3,052	264.6	866
4. 20-h.p. Wolseley	3,612	165	913
5. 20-h.p. M.M.C.	2,968	141.8	955
6. 10-h.p. Lanchester	3,108	297.6	957
7. 6½-h.p. Cadillac	1,708	252.8	982
8. 10-h.p. Lanchester	3,164	309.6	972
9. 15-h.p. Panhard	3,024	194.4	1,028
10. 16-h.p. Rochet-Schneider	3,052	197.4	1,034
11. 10-h.p. Lanchester	2,908	308.6	1,039
12. 12-h.p. Wolseley	2,716	236.4	1,044
13. 22-h.p. Daimler	3,052	153.6	1,107
14. 24-h.p. Wolseley	Doubtful	175.6	Doubtful.
15. 24-h.p. Panhard	2,800	152	13
16. 18-h.p. James and Browne	3,024	277.6	1,652

POLICE TRAPS.

MOTORISTS travelling between Llangollen, Corwen and Cerrig-drudeon should be careful of police activity.

THE police have laid a motor trap of a measured ¼ mile in Wakefield Road, Halifax, about half-way between Edward's Mill and Copley railway arches.

SERGEANT JARRETT is in charge of the trap at Artington, near Guildford.

THROUGH the main street of the town of Alresford the police have a measured distance.

A POLICE trap has been established between Ruabon and Trevor station

CLUB NEWS.

SCOTTISH.

THE Eastern Section of the Scottish Automobile Club has secured a club room for the use of the members. This is in the North British Station Hotel, and the courtesy of honorary membership is extended to all members of the Automobile Club who may pass through Edinburgh.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

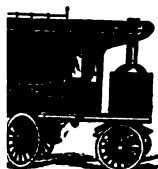
VOL. V.]

LONDON, SATURDAY, AUGUST 15, 1903.

[No. 232.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE Post Office motor-van, which is running every night between London and Epping, has had many narrow escapes through the tendency of hay carters to go to sleep on the road and leave their horses to take their own way. At last the Postmaster-General has had to address a letter to the Essex police asking them to warn the carters. One result has been that eighteen drivers were fined small sums the other day at the Epping Police Court for being asleep or without lights. Frequently have we experienced the inconvenience and danger caused by drowsy drivers, who have no regard for others, and who will have to be taught many such salutary lessons as those recently given these Epping carters at the suggestion of the Postal authorities.

The Motor-car Bill.

FOR a whole day and away into the early hours of the morning the members of the House of Commons have been discussing the rights of motorists on the public highways, and how assiduous some have been in their attention to the subject may be gleaned from the calculation of a contemporary that Mr. Scott Montagu has made no fewer than eighty-three speeches in the course of the Parliamentary controversy. This number may be an exaggeration, but in any case we fear he has spoken too frequently to have impressed the House with the seriousness of the subject. In fact, if he had spoken less and said more, it would have been better. There is no doubt that the want of a clear, definite policy was felt by the friends of motorists, and it would have been wiser if they could have agreed to urge the postponement of the matter.

The Scotch View.

THE tone in which the Scottish Automobile Club has consistently opposed motor-car legislation, and the way in which the wisdom of their attitude has been demonstrated, should give that organisation greater standing in the automobile world in the future than in the past. The Lord Justice Clerk of Scotland, as president of the Club, Mr. Dawson Turner as vice-president, and Mr. Norman D. Macdonald as chairman, all wired to M.P.'s last week, urging the Bill to be blocked if the speed limit was brought below 25 miles. The Club always urged that in a few short years the position would right itself, and that there was no need for such premature action, and, as events have proved, such precipitate disaster. Our own view is that Scottish motorists will not suffer so much as those of this country. Scotland may be depended on to keep calm and cool, and the legal procedure north of the Tweed will probably be less irksome to motorists than here.

The Speed Limit.

A SPEED limit of twenty miles an hour has been inserted in the Motor-Car Bill, and thus the promised relief to motorists has been lost. We were to submit to all sorts of indignities which were to be cheerfully borne, and, in return for this, the vexatious and senseless speed

limit would be withdrawn. Such was the line of special pleading adopted in the early days of the agitation. But the limit has been re-enforced and although raised slightly will not make us any more content with the position than we were before legislating motorists trailed possible concessions before our eyes. Now, if any motorist goes beyond twenty miles an hour he will be liable on summary conviction in respect of the first offence to a fine not exceeding £10, in respect of the second offence to a fine not exceeding £20, and in respect of any subsequent offence to a fine not exceeding £50.

Identification.

THE clause dealing with the identification question now provides that—(1) Every motor-car shall be registered with the council of a county or county borough, and every such council shall assign a separate number to every car registered with them. (2) A mark indicating the registered number of the car and the council with which the car is registered shall be fixed on the car or on a vehicle drawn by the car, or on both, in such manner as the council require in conformity with regulations of the Local Government Board made under this Act. (3) A fee of £1 shall be charged by the council of a county or county borough on the registration of a car, and 5s. for a motor-cycle. (4) If a car is used on a public highway without being registered, or if the mark to be fixed in accordance with this Act is not so fixed, or if, being so fixed, it is in any way obscured or rendered or allowed to become not easily distinguishable, the person driving the car shall be guilty of an offence under this Act, unless he proves that the mark had been obscured or rendered not easily distinguishable by unavoidable causes arising from natural conditions over which he had no control. Provided that a person shall not be liable to a penalty under this section if he proves that he has had no reasonable opportunity of registering the car in accordance with this section, and that the car is being driven on a highway for the purpose of being so registered. Power is also given to a county council or county borough in which the business premises of any manufacturer or dealer are situate, on the payment of an annual fee not exceeding £3, to assign to such manufacturer or dealer a general identification mark which may be used for any car on trial without penalty.

Inland Revenue.

INCIDENTALLY the foregoing clause will be of great value to the Inland Revenue authorities, enabling them to easily obtain the names and addresses of owners of cars, thus facilitating their work and preventing motorists escaping the present tax. In view of the new legislation, motorists will be well advised in giving attention to this individual aspect of the matter.

Fine and Prison.

CLAUSE 9 as originally brought from the Lords read as follows:—"A person guilty of an offence under this Act for which no special penalty is provided shall be liable on summary conviction in respect of each offence to a fine not exceeding £20, or in the discretion of the Court to imprisonment

for a period not exceeding three months, or in the case of a second or subsequent conviction to a fine not exceeding £50, or in the discretion of the Court to imprisonment for a period not exceeding six months." This fortunately proved too much even for the most rabid anti-motorists, and an amendment was agreed to fixing the term of imprisonment which it was in the discretion of the court to inflict at a period not exceeding three months, instead of six.

Signposts and Servants.

THE signposts to be put up at dangerous corners, cross roads, and precipitous places are to be subject to regulations as to size and colours to be made by the Local Government Board, which will, we hope, secure uniformity both in text and colour, so that there may be no confusion on the part of motorists passing from one county to another. It has also been agreed that the Act shall apply to servants of the Crown—an important and necessary clause in view of the rumoured motor developments in the Post Office.



Chan Lye Mue, of the Chinese Consulate, Hong Kong, on his Georges Richard Volturette. *[La Vie au Grand Air.]*

Small Amendments.

THE final reading of the Bill in the Commons was marked by a significant incident in the courteous but firm rebuke of Mr. Long to Mr. Sinclair, who had put down a series of pettifogging amendments, and who, said the President of the Local Government Board, if he persisted in moving amendments of this kind, would be doing a greater injury to the motor traffic of the country than he could think of. Mr. Sinclair, we were glad to observe, quickly learned the lesson and refrained from moving several amendments he had framed.

The Licensing Question.

ON Tuesday the third reading of the Bill was carried in the Commons. Mr. Long proposed a new clause, which provided that any Court before whom a person was convicted of an offence under the Act, or of an offence in connection with the driving of a motor-car, other than a first offence, which consisted solely of exceeding any limit of speed fixed under the Act, might suspend a license of the driver, and declare the person convicted disqualified from obtaining a license for such time as the Court thought fit, and might cause the license to be so endorsed. In the case of a person who did not hold a license the Court might declare him disqualified from obtaining a license. A disqualified person might appeal in the same manner as a person ordered to be imprisoned without the option of a fine. After some

discussion Mr. Long admitted that so far as the clause applied to the professional driver there might be hardship in depriving him of his license for a first offence, which might conceivably be that of exceeding the speed limit by only a small extent. He accepted an amendment to that effect, which was subsequently agreed to. No one will be allowed to drive a motor-car without being licensed for the purpose, and drivers will be required to renew their license annually for a fee of five shillings. The age at which the licenses will be granted to drivers of motor-cars has been fixed at seventeen years, but licenses limited to driving motor-cycles may be granted to persons over fourteen years of age.

The Right of Appeal.

IN the midst of all the attacks that have been made on the position of the motorist one small mercy has been given. There is to be a right of appeal against the decisions of magistrates in cases where the fine is above twenty shillings. All along we have urged the necessity of adequate opportunity for appeal being given, and now that Mr. Long has recognised the point and dealt with it in quite liberal fashion, we would impress upon motorists the necessity of using the power thus given. A plethora of appeals with probable chances of reversions of judgment would do much to bring magistrates to a proper sense of the fitness of things.

Hopeful Mr. Long.

SPEAKING at Trowbridge on Saturday, Mr. Walter Long said they had been quarrelling over motor-cars in Parliament the previous night, but he hoped, whether they made mistakes or not, their legislation would be beneficial in two respects. He hoped it would foster a great and growing industry, and bring home to people who enjoyed the delights of motor-riding that they must use their cars in such a manner as to inflict the least possible inconvenience to the people of this country. He hoped motors would have a great future, both commercially and for purposes of enjoyment. There is no doubt as to the prospect of the latter hope, although we shall wait for its universal realisation until after the expiry of the Bill of the present year.

Only Three Years.

SOME idea of the want of finality that characterizes the Bill may be gleaned from the eagerness with which the House agreed to the clause proposed by Mr. C. Murray, the member for Coventry, who has rendered good service during the discussions. He suggested that the Act should continue in force till December 31st, 1906, and no longer, unless Parliament should otherwise determine. Seeing that the Bill does not come into operation till January next, it is only intended to have a three years' operation, by which time we anticipate the motorists in Parliament will be sufficiently numerous to make their arguments effective and their strength felt. How lukewarm has been the much-vaunted Automobile Party of a hundred members is clear from the fact that Mr. Montagu, in submitting a new clause at the end of the discussion, found only eighteen supporters. Had the motorists been keen in defence of their rights they could easily have secured some significant victories during the committee stage.

Official, and too Late.

AT a joint meeting of the Automobile Club and Legislative Committees of the A.C.G.B.I., held on Monday evening, the following resolution was unanimously passed, viz.:—"That although the Automobile Club has favoured, and does favour, any legitimate legislation which will prevent inconsiderate or dangerous driving of motor-cars at excessive speeds, and consequently agreed to identification, the Club still adheres to the opinion expressed by Mr. Long and supported by the County Councils' Association and the majority of the chief constables,

viz., that a specific limit of speed tends more to the public danger than to the public safety, and they are therefore opposed to a 20 mile per hour or any other specific speed limit, since it cannot fail to be vexatious and inefficient, and will undoubtedly seriously injure the automobile movement in this country, which if allowed free growth will undoubtedly, as in the case of the bicycle, lead to the evolution of vehicles suitable for general use by the professional and industrial classes." Why did not the spokesmen in the House give strong voice to this view?

What will the Lords do?

Now that the Bill, with all its harassing of the small motorist and the inconveniences it will impose upon the owner of means, has emerged from the Commons, there remains only one chance of improvement. We look to the Duke of Portland, Earl Shrewsbury, Earl Russell, Lord Hastings, and other noble motorists, to secure some reasonable concessions. It may be too much to hope that any alteration will be made in the principles of the measure, but there are a few points which well deserve fuller consideration. At the last moment a new clause was added giving the Local Government Board power to

A Reminiscence of Luther.

THE accompanying illustration shows a couple of Wartburg cars, of 8½ and 5½-h.p. respectively, ascending a road in the vicinity of the famous Wartburg Castle, near Eisenach. The castle, standing in lonely dignity on an elevation, is interesting because of its associations with Martin Luther, who was confined there for nearly a year at the instigation of Frederick, Elector of Saxony. His incarceration was really a device to save him from worse dangers, and during its continuance he began the translation of the Bible, which, however, was not completed till thirteen years later.

The Magistrates and the Law.

GREAT uncertainty seems to prevail in the magisterial mind as to what to do with motorists in view of the legislative action of Parliament. At Havant, the magistrates have inflicted nominal penalties of a shilling in three cases, in view of the Bill now before Parliament. At the West London Court, however, the suggestion that the police might stay their hand against motorists, pending the passing of the Bill, was scouted by the magistrate as unconstitutional. Mr. H. Pierron, who made the



Two "Wartburg" Cars on the way to the Wartburg Castle.

close to motorists any roads in the country not more than 16ft. wide. Why was such a clause added without previous notice and when discussion was practically impossible?

Closed Roads.

THIS is not a question affecting public safety or convenience, but Mr. Long's proposal will seriously affect tourists and consequently the hotel-keepers and others who are looking to the motorists to restore their chances of prosperity. In Devon and Cornwall, and in many parts of the Midlands, are roads which could be closed without any reason but that supplied by the prejudice of a couple of bucolic opponents of automobilism. As we have previously pointed out, local authorities have neglected their duties with regard to this matter, and it is possible that this neglect will be an important factor in the campaign against motorists. Certainly we are now at the mercy of anybody and everybody.

suggestion when appearing on behalf of the Earl of Carnarvon, pointed out that Mr. Balfour had suggested that the magistrates might stay their hands at the next Brewster Sessions until a Bill for the compensation of publicans was brought into Parliament, and he naturally thinks that principle ought to be applied to motor-car drivers. The magistrate offered no comment, but imposed a fine of £5, and thus ended the plea for suspension of operations.

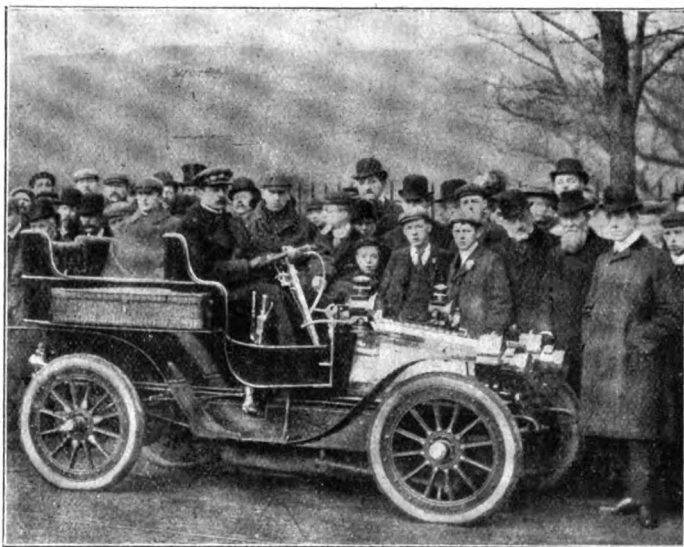
Motor-Car Imports and Exports.

THE imports of foreign automobiles into this country continue on a very large scale, no less than 722 cars and cycles being imported last month, the value of the same being returned at £210,518. The value of the "parts thereof" is given as £25,429, so that we get a combined total for July of £235,947, as compared with £258,578 in June last, and £118,926 (representing 419 cars) in July, 1902. Some of the imports were only of a temporary character, being reshipped to foreign destinations. Thus last month the reshipments comprised 65

vehicles, amounting in value to £36,102, and £1,396 of parts, bringing down the net imports in July to £198,449, as against only £115,540 in the same month a year ago. For the first seven months of the year the net imports of motor-cars, cycles, and parts stand at no less than £1,221,492 (representing nearly 4,000 vehicles), more than double those during the same period of 1902. As regards the exports of automobiles of home manufacture, the shipments during the past month amounted to 59 vehicles of a value of £27,553. Of parts the exports attained a value of £5,589, making a combined total for July of £33,142 as compared with £22,364 in June last, and £12,799 (representing twenty-nine vehicles) in July, 1902. To the end of July 391 vehicles of British manufacture had been exported this year, these, together with the "parts," representing a sum of £166,031.

Our Hedgerows.

We have already mentioned that the jury adopted a verdict of "accidental death" in the case of the unfortunate accident on Sun Rising Hill. At the suggestion of Mr. H. C. Matthew, of Northampton, they have requested the County Council to improve the road by widening it at the corner where the accident happened, and by cutting the hedges, so that drivers can better see the danger ahead. This cutting of the hedges is a problem to which county councils and other local authorities will have to give earnest attention. Whilst the



Mr. P. W. Fawcett, of Sheffield, on his 12-h.p. Humber.

hedgerows may be the pride and glory of our English landscape, they are certainly a source of danger to motor travellers on the highway, unless they are kept properly in subjection and consistently trimmed. It is to be hoped that those responsible for other hills, besides those in Warwickshire, which have been the scene of motor mishaps, will take the warning that this accident has given.

Look to the Brakes.

IN connection with this unfortunate accident we would warn motorists to always see that their brakes are in good working order, especially when intending to tour in an unfamiliar district. The day is past when cars fail to climb hills or run safely down them, and after seeing Mr. Austin negotiate Patrick's Hill, Cork, no one should need assurance on that point. The Wolseley Company asked Mr. H. Sturme, of Coventry, to inspect the car which figured in the fatal mishap on the Sun Rising Hill, and he found that with the exception of the right hand driving wheel, the hub only of which remained, a burst tyre and smashed lamps, very little damage was done to the car, although it had rolled right over. He gave particular attention to the brakes, and found that the unfortunate driver

had apparently neglected to adjust his foot (countershaft) brake, which showed no signs of having been used; the drum was smothered with oil and the lever came down on the footboard without the brake going full on, so that little, if any, power could have been obtainable from it. The driver had evidently trusted to the holding powers of his side brakes for the negotiation of any steep hills he might encounter. These were leather-covered blocks working on the inside of the wheel flanges. They showed no sign of excessive use, the brake blocks not being worn away to any appreciable degree, though the surfaces were just charred over.

The Cause of the Accident.

THE brake would be subjected to great heat in descending such a hill as Sun Rising, which would account for the charring, but whether freshly charred leather, whilst hot, has any deterrent effect on the power of brakes, Mr. Sturme was not in a position to say. That these brakes were, however, in good order, and of ample power, was clearly shown by the fact that, when a new wheel had been put on, they without adjustment, held the car upon the hill. Not only so but as both engine and gear were in perfect order, the car was reversed up to and around the fatal corner, and was afterwards repeatedly taken round it, and finally down the hill on these brakes alone. It seems to the expert, therefore, that the driver attempted the descent of the hill without seeing that both brakes were in full working order, and apparently commenced the descent too fast. Whatever the cause of the speed, too high a rate for the road conditions was undoubtedly the reason of the accident, and if, as is surmised, the car struck a hump in the road, caused by a water gully, the added stress suddenly thrown on to the wheel on the other side would amply account for the tyre being forced from the rim and the wheel collapsing and overturning the car. So far as the brakes are concerned Mr. Sturme is convinced that, kept in order and applied with reasonable judgment, they were amply sufficient to hold the car down any hill.

The Colour of Cars.

AT Winchester, where the police have some well-prepared traps for wayward motorists, the Rural District Council has been assuming some sort of knowledge with regard to what is safe and convenient to the public so far as the speed of motor-cars is concerned. Not content with this, however, they have resolved that "cars which emitted smoke, vapour, or smell should be licensed seventy-five per cent, higher than those free from such nuisances, also that the Local Government Board should inform motor-car builders that cars painted a dull or dark colour were safest for horses to pass." This, we believe, is the first time that local authorities have attempted to dictate the colour in which owners of cars shall have their vehicles painted. It is becoming the custom for military people to advise that troops shall be dressed in khaki hue, to avoid too conspicuous an appearance in open country, and naval men are advising a greyish tint for the fleet, but that privately-owned motor-cars should also have their hues and colour dictated by an Official Department is quite an innovation. Probably the insistence with which the numbering crusade has been carried on both inside as well as outside the ranks of motorists is responsible for the ridiculous suggestion of the Winchester Council.

For Surveyors' use.

RECENTLY we have shown how useful the motor-car has proved to some surveyors of the Eastern Counties. Now it would appear that the utility of the automobile is being officially proved in the south-western district. At a meeting of the Wiltshire County Council, just held, Mr. Pinckney, in moving the report of the Finance and Parliamentary Committee, said that the new motor-car purchased for the Surveyor had already been of good service, for he found he could do his work much more expeditiously since he had had a car. The vehicle is an 8-10-h.p. Benz-Parsifal, supplied about a month ago by Messrs.

Eastmead and Bigg, of Frome, and it has been doing long journeys from Bradford-on-Avon to remote villages on the other side of the county. Several County Councillors have accompanied Mr. Abye, the surveyor, on his tours of inspection, and, on one occasion, the Chief Constable of the county took a trip across Salisbury Plain. We can thus reasonably hope that purchase of a motor-car for a County Surveyor will prove an educational influence on members of local authorities, as well as an economy for the county itself.

Numbering in Canada.

MR. H. C. BLACK, of the Provincial Secretary's Department, has met the members of the Toronto Automobile Club to discuss the operation of the new law requiring each automobile to bear a registered number for purposes of identification. Mr. Black suggested a black enamelled leather groundwork, with the figures in white leather, stitched on, and the seal of the department at the bottom in gold letters. Those present approved of the idea of the department, and this scheme will be adopted. The owner of every automobile will then be registered in the department. Another matter discussed was the entry into Canada of American machines for touring purposes without the owners having to pay the duty at the frontier. The suggestion was made that the different automobile clubs of the United States should work under a national association, the latter to put up a fund of, say, 5,000 dollars, with the Dominion Government. Automobiles then could enter Ontario, receive the identification numbers of the Ontario Government, and if they were not returned to the States the duty would be paid out of the fund. This suggestion will be placed before the Dominion Government.

Ireland's Scheme.

THE Iveagh-Pirrie scheme of motor transit for Ireland is being carefully thought out, and, as already announced in these columns, three commissioners are now travelling the country with a view to studying the lines upon which the final report will be made. Mr. Malcolm is the engineering expert who will consider the nature of the cars required, their freight-carrying capacity, the nature of the roads to be traversed, and other matters dealing more particularly with the motor-car aspect. Mr. Bailey, who has had considerable experience with the South-Eastern Railway Company, is investigating questions of transportation, packing, etc.; whilst Mr. Callaghan will fix the rates to be charged upon the various classes of freight. All this is very satisfactory, but we wait with considerable interest their report and the promise of a definite date for starting the scheme.

Save us from our Friends.

JUST before going to press we learn that the indignation and alarm with which motorists view the Motor-Car Bill as it now stands were reflected at the joint meeting of the Legislative and Club Committees held on Monday last. The Committees were unanimously of opinion that automobilists were better off under the existing law, even with the twelve mile per hour limit, than under the new one that is now before the Lords. The chairman and administrative secretary reported that they had endeavoured to secure the withdrawal of the measure upon the introduction of the twenty mile per hour speed limit, but their efforts had been nullified by reason of the fact that Mr. Montagu's Parliamentary Committee had agreed to accept the Bill, and to facilitate its passage through the House. The joint committee thereupon passed a resolution calling upon "Mr. Scott Montagu, as a vice-president of the Club, to make known to the House of Commons that the acceptance of the speed limit was expressed without the sanction of the Automobile Club, and that the Club entirely dissents from the views of those who, on this question, were considered to be acting as the representatives in the House of Commons of that organization." Later in the evening a deputation consisting of Mr. Wallace, K.C., Col. Crompton, and Messrs. Calthrop, Staplee Firth, C. A.

Pearson, and Rees Jeffreys, went to the House to ascertain what opposition could be offered on the Report stage. They found little encouragement in the attitude of the recognised representatives of automobilism, but Mr. Dalziel and Major Jameson, M.P., however, who have already established a very great claim upon automobilists for their vigorous opposition to the Bill in the previous stages, kindly consented to continue the fight during Report. Altogether the position is aptly summed up in the title of this comment.

The Lords Adopt the Amendments.

THE House of Lords held a special sitting on Wednesday afternoon, when Lord Balfour revived the engaging topic of speed-limit on the consideration of the Commons amendments to the Motor-Car Bill. In explaining the changes that the Lower House had made, he said the only important alteration was the speed limit of twenty miles an hour. This he feared was a tactical mistake. The outstanding objection to a speed limit was that it must tend to obscure the real importance of the provisions of the first clause, which enacted heavy penalties for furious driving. Taken by itself a twenty-mile limit was not of much importance for the protection of the public. Speaking for himself, he would have liked to see the Bill without any arbitrary speed limit, but in face of the strong feeling in the Commons he felt that it would have been difficult to pass the measure without it. Earl Spencer expressed the opinion that the imposition of a speed limit would be exceedingly difficult to carry out. Nevertheless the Commons amendments were agreed to en bloc.

A word to Horse Drivers.

A CORRESPONDENT calls attention to a growing practice of horse drivers stopping motor-cars merely because they are somewhat nervous. Invariably the horses take no heed of the automobile until the driver notifies its presence by violent tugs at the rein, and in other ways alarming the animals. Care and intelligence should be exercised by horse drivers as well as by drivers of automobiles.

BARON DE REUTER, Mr. J. Hozier, M.P., and Mr. C. T. Yerkes have been elected members of the A.C.G.B.I.

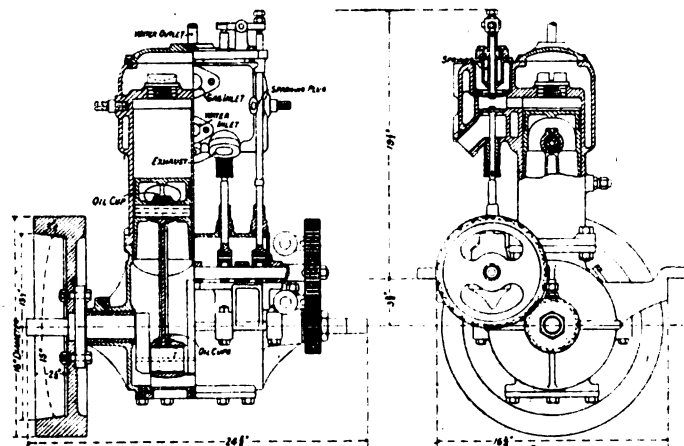
THE directors of the Motor Manufacturing Co., Ltd., report that for the year ending May 31st, 1903, the net profit on the trading is £10,045. The gross sales have increased 61.84 per cent., and the cost of production has been very considerably reduced. The directors recommend that a dividend at the rate of five per cent. per annum be paid, and that the balance—£6,882—be carried forward.

THE official view with regard to the Parliamentary Committee on Automobilism formed to conduct the automobilists' case in the Commons is that it was little in evidence, and some of the hardest fighting for the A.C.G.B.I. was done by men who are not members of the Club, nor, in all probability, motorists themselves. Mr. Dalziel, in particular, made a most earnest effort to protect automobilists against vague charges of exceeding the speed limit, while the militant Mr. "Tim" Healy and the downright opposition of Major Jameson succeeded in winning some small concessions.

UNDER the auspices of the Derby and District Automobile Club, a hill-climbing competition was brought off on a road between Ashbourne and Belper on Saturday. Turnditch Hill was selected, a mile in length, which exhibits a variety of gradients, making it an ideal one for testing cars. The final acclivity in which the hill terminates is very steep, and represents a gradient of about one in six. Sixteen cars and some eight or nine cycles competed. In the car class the fastest time was recorded by Mr. Astle, of Wilne, who drove a De Dion up the hill in 3 min. 30 sec., and next came Mr. Sayer, of Derby, on a Serpollet steam car, who did it in 3 min. 32 sec. In the motor-cycle class the Excelsiors were to the fore, and Mr. Smith made the excellent time of 2 min. 38 sec. The starter was Mr. Leech, and Mr. Allin acted as judge.

THE "ALPHA" PETROL MOTOR.

HEREWITH we give two sectional views of a new petrol motor which has been put on the market recently by Messrs. Johnson, Hurley, and Martin, of the Alpha Motor Works, Coventry. It is capable of developing 12-h.p. on the brake at a speed of 800 revolutions per minute. It has twin cylinders standing on an aluminium base chamber which carries suitable brackets or attachments for fixing the motor to the car frame. The two cylinders are of cast iron, water jacketed; they are each 4 3-16 in. diameter by 4 1/2 in. stroke. The inlet and exhaust valves are mechanically operated and interchangeable. The inlet and exhaust valve lifters are also interchangeable. A carburettor of the Phoenix float-feed type, with throttle in the gas



outlet, is employed to furnish the mixture. The crank case is of aluminium and the brackets carrying the enclosed valve gear are in communication and lubricated from the same, the whole being oiltight. Large gun-metal bushes are fitted to the crank case, these being lined with "Hoyt" white metal. The crankshaft is of mild steel with a collar carrying a fly wheel 16 in. diameter, with conical space bored for the driving clutch. The cam-shaft is of mild steel and is fitted with a gun-metal toothed wheel actuated from the crankshaft by a pinion of vulcanised wood fibre half the size. The pistons and the bearings of the connecting rods, camshaft and crankshaft are lubricated in the usual way by splash.

MESSRS. EVART-HALL AND COMPANY have just supplied a 24-h.p. Darracq car to the Duke of Portland.

FROM the Lytham Ratepayers' Association comes a small but useful guide to Lytham, one of Lancashire's increasingly popular seaside resorts.

AT the forthcoming meeting of the British Association, a paper entitled "The Problem of Modern Street Traffic" will be read by Lieut.-Col. Crompton.

AN automobile club has just been formed in Havana, Cuba. The club will make a special effort to induce American automobilists to visit Cuba next winter.

A NEW garage, capable of accommodating twenty cars, has been established by Mr. E. Mens, in Palmerston Road, Boscombe. The garage is equipped with inspection pit and all the necessary plant for carrying out repairs.

THE Bournemouth Town Council has decided in favour of a new bye-law requiring hooded vans used in the town to be so constructed that the approach of vehicles from behind or from either side can be seen by the driver.

THE Electromobile Co. recently asked the Town Council of Maidenhead to provide housing accommodation at the electricity station for electrical cars when charging. As the electrical engineer reported that the business of charging the batteries of electrical vehicles was a growing and profitable one, it was decided to comply with the request.

LINCOLNSHIRE MEET.

JUST now the Lincolnshire Club is having a series of meets holding them weekly almost, to-day's (Saturday) run being to Skegness. On Saturday last, Dr. W. Gilpin, Bourne, entertained the members, and in acceptance of his invitation there was a very strong muster, some thirty-five cars and about twelve motor-cycles turning up at Grimsthorpe Castle, the beautiful seat of Earl Ancaster, near Bourne, the park having been placed at the disposal of the club by his lordship. Several of the members were conducted over the castle, and inspected its treasures and beauties, and then all the cars, etc., were driven through to the Red Deer Park, where, in the chestnut avenue, Dr. Gilpin had arranged a very nice picnic. Prior to sitting down to tea there was a hill-climbing competition for a prize offered by Dr. Gilpin, and the climb proved very interesting. The cars were sent off from a standing start at the hollow at the foot of the hill, so that, though the gradient was not particularly steep—on the whole it averaged 1 in 18—the cars could get no "way" on. We understand the handicapping to be the weight \times 10,000, divided by the h.p. \times by the time in seconds. Dr. Gilpin was the starter, Dr. Husband was timekeeper, and Mr. E. Cragg, M.D., the hon. sec., was at the finishing point.

The times were as follows:—

Entrant.	Car.	Mins.
W. S. Foster, Lincoln ...	9-h.p. Clement ...	1-275
W. R. Pennell, Lincoln ...	10-h.p. Locomobile ...	—
C. Holland, Boston ...	5-h.p. Baby Peugeot ...	2-185
Dr. Miller, Wrangle ...	—	2-235
R. M. Wright, Lincoln ...	6-h.p. De Dion ...	1-245
B. Smith, Horbling ...	—	3
(stopped too soon.)		
J. D. Sanders, Gainsborough ...	16-h.p. Siddley ...	2-100
Capt. H. E. Newsum, Lincoln ...	12-h.p. Richardson ...	1-200
Dr. Reckett, Boston ...	5-h.p. Baby Peugeot ...	2-125
M. Tryon, Stamford ...	6-h.p. Pick ...	2-075
A. A. Padley, Market Rasen ...	6-h.p. De Dion ...	1-230
(Driven by R. M. Wright).		
M. Tryon, Stamford ...	10-h.p. Pick ...	1-275
Dr. Benson, Deeping ...	6-h.p. Pick ...	1-275
F. Richardson, Sibsey ...	10-h.p. Wolseley ...	1-230
Dr. Gilpin, Bourne ...	8-h.p. Peugeot ...	1-275
M. Smith, Horbling ...	—	2-175

In the handicap F. Richardson was declared the winner with 223 points. The next three were Dr. Gilpin, 215, C. Holland, 192, and Capt. H. E. Newsum, 182.

After tea there was a motor-cycle hill climb, the start being from a little way up the hill, beyond the starting point of the cars, and thus gave a bit of a send off. The cycles were run off in pairs, and in the final Mr. Pogson, Sleaford, 2 1/2-h.p. Minerva, was the winner by a short distance from M. Gilbert, Billinghay, also 2 1/2-h.p. Minerva, but as Mr. Pogson was not a member of the club he had to be content with the honour, Mr. Gilbert taking the prize. No times were taken.

The picnic was a most enjoyable function, but there was so much to do that the meeting of the committee could not be held. The tables were laid out in the chestnut avenue and the tea was altogether *al fresco*. The journey home, to almost all parts of the county, was commenced about 7 o'clock, after a very pleasant time.

SOME trials with motor fire engines are about to be made at Charlottenburg, Germany.

TO-DAY (Saturday), the Kent Automobile Club will hold a run from Maidstone to Sevenoaks.

MESSRS. HUMBER, LIMITED, have opened a motor-car depot at 13, Cambridge Place, Paddington, W.

THE Empress Eugenie, who is at present in Paris, has taken to the motor-car, and went out in one last week to St. Gratien.

DURING the September Reliability Trials a Chelmsford steam car will be used as the official "supplies" car, carrying 200 gallons of water, a supply of spare parts, tyres, etc., for sale to competitors.

TOURING BY MOTOR-CAR.

FOR the automobilist who, having come to a mastery of his car, discovers within himself a desire for new worlds to conquer, there arrives a new and interesting plane of experience. He bids adieu to much that he has been accustomed to in other forms of travel, and takes up a round of new things. It is, first of all, a far step from the innate intelligence and companionship of the horse to the mute power and mere possession of the road motor. To accustom one's self to the change—with the radius of operation multiplied in the process—may often call for preliminary mental discipline, as well as for additional practice of the more tangible sort.

This is due in large part to the greater demands made upon the driver of a motor-car. One may share the ecstasies and the dangers of a trip with a fleet four-footer; relax attention now and then; feel that the responsibilities of the journey are not wholly his, and trust to a discriminating sense in avoiding the perils of street and highway too clever to be merely automatic. But the power-driven vehicle is wholly and directly in the care of the person at the wheel or lever. So long as all goes well, he is the most independent and the most absolute monarch locomotion ever produced, for even the railway engine-driver with the right of way in his pocket is subject to "orders" and signals. But when anything serious happens to the lone motorist, no wayside beggar is, for the time being, so poor or so helpless. Nowhere else is the personal equation of such large relative importance.

Recognising these essential qualifications, and working in league with them, rather than in ignorance or recklessness ignoring them, many special benefits at once appear. One has at his command a means of far-and-wide travel more rapid than cycling, more exhilarating than carriage driving, and—so far as operating cost is concerned—less expensive than railway transportation. The only limitations are those general ones of good roads, fair weather and time.

Travellers by motor-car have unexcelled opportunities for the study of nature and places, and for sightseeing in general. They are independent of time tables, and need not hasten from that which satisfies, or stay when interest flags. Wherever the tourist guides his car, by copse or cliff, in modern village or through ancient town, midst abbey ruins or along secluded valleys, on the borders of lake or mountain tarn, by the side of fringed streams, along gloomy defiles, or to some quiet seaside resort, he cannot fail to be benefited physically and mentally by the ever-changing environment of his holiday.

To be enjoyed to the full, a long journey needs a few preliminary runs, if necessary alone, but better in company with others, since companionship and conversation tend to an even pace and more interesting miles. These preparatory runs are especially desirable if one's vacation be taken in the spring. To come directly from a winter's inactivity to a week or month's continuous outdoor exercise is not always wise. The man who can go and come from business on his vehicle more or less regularly through the year is perhaps the best fixed of all in this respect; he is always ready, and needs only to arrange for his absence.

To lay out a motor-car tour, first determine upon a route through a section of country sure to yield sufficient interest and variety to pay for the time, work and expense involved. If this has been covered by some responsible party and maps and descriptions published, procure same, and use for general information and for suggestions. But, no matter how many helps the motor tourist has, he should travel by his own intuition, aided by a preliminary sketch, pencilled from the most acceptable map available. Then, from this map and all other sources of information combined, make entries beforehand in a convenient sized notebook of the principal towns and villages passed through or by, with the main distances of each from the starting point; and in a parallel column the approximate distances between the principal intermediate points. This will provide a daily working memorandum, giving possible stopping places for meals and lodging. More detail than this is not necessary, but optional with the tourist, who will soon discover that he can safely leave a great deal to be determined in the course of the trip. After each entry it is well to leave sufficient space for remarks, carefully avoiding, however, any not "fit to print."

As a rule, each person should work out for himself the best way to get from his home to the line laid down for some tour which he is anxious to undertake. Then, using the description or some of the maps already published, he will have a very practical suggestion of the best roads open to him.

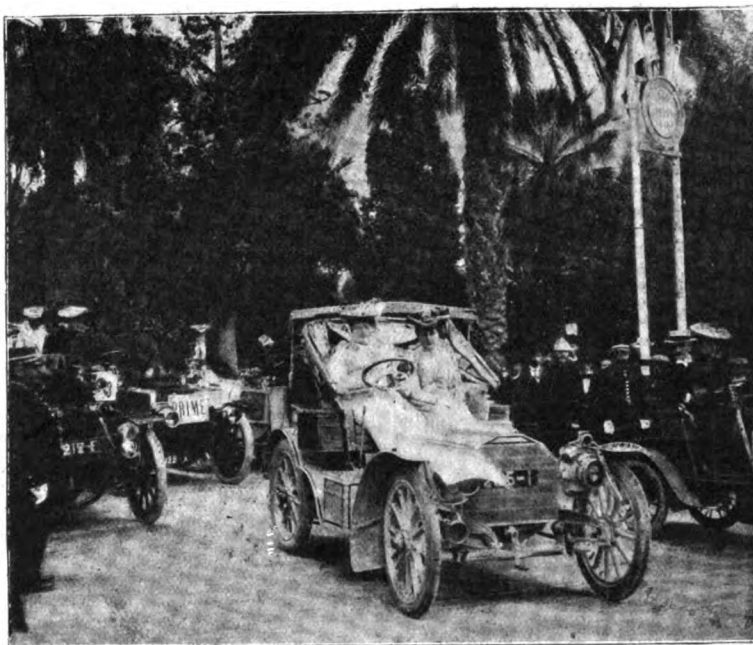
The motor-vehicle already in satisfactory everyday service is ready for any ordinary tour after a careful inspection, especially of the motive parts and tyres. It is well not only to do this personally but also to have a competent mechanic or repairer do it, as a double safeguard. Opinions differ as to what should be included in the tool-chest, many motorists being content to go along with what is provided for them when the vehicle is purchased. Sufficient wrenches are supposed to go with the car, but the addition of a larger "pipe" wrench is

worth while. A hammer, screwdrivers, cutting pliers and a file ought to be included in the equipment; also a small vice for use in the emergency which sooner or later is sure to arrive.

A goodly supply of nuts, bolts and split pins will be carried, and care should be taken to replace them as fast as used. Spare sparking plugs, valves and valve springs, ready cut packings, cloths and cotton waste will come in handily sooner or later. Lubricants should consist of an oil can and grease injector, with an ample reserve of oil, grease, graphite, resin, French chalk and paraffin, all of which ought to be kept apart from the tools. Screw top cans make the best receptacles for these things. The petrol tank, or tanks, should, of course, be filled full at the start, and care taken thereafter to replenish it on the road well ahead of exhaustion, for, though almost universally procurable, the exception to the rule and the stranded vehicle will connect on the slightest provocation. It is well to go over all connections, as a loose wire is likely to give an irregular current, especially under vibration, and lead to a missing of explosions. In case of ignition by battery, the safest way is to use one fresh from the charging station, with an additional battery wired for use in the event of the first one giving out from any cause.

(To be continued.)

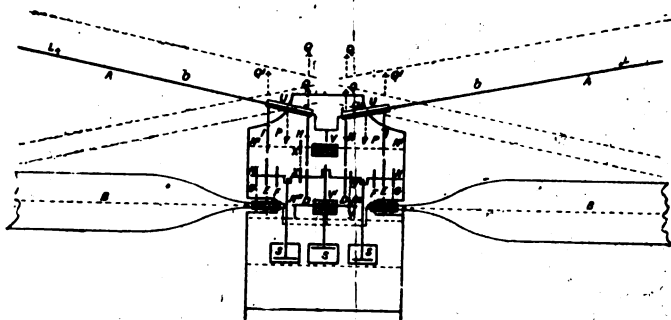
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The Paris-Madrid Tour—Baroness de Zuylen on her 28-h.p. Mercedes.
(La France Automobile.)

THE DELPRAT FLYING SHIP.

THE articles on "Mechanical Flight" which appeared in the columns of the *Journal* about a year ago attracted considerable attention, and brought under our notice several designs for new air-ships. Of one of these we are now able to give a diagram, together with some brief particulars. Its designer is M. A. Delprat, who has for many years given much study to the question of aerial navigation. After making many experiments with balloon-sustained and screw-propelled air-ships, he has abandoned these in favour of a machine with mechanically-operated flapping wings. Referring to the diagram, which is not drawn to scale, the section of the ship and the part of the wings within the same being enlarged relatively to the wings themselves, in order to show the disposition more clearly, A A are flat wings or blades, the flapping movement of which is in a vertical plane. B B are similar blades, having a to-and-fro movement in a horizontal plane. The inner ends of these blades are supported by, and are free to be rotated on, ball bearings, in sleeves which are themselves suitably supported. The alternating to-and-fro movement is mechanically given to the sleeves, and from them to the blades. S S S represents a three-cylinder motor, preferably actuated by petroleum-spirit. N is the engine shaft, on which are mounted the eccentrics or cams, D E F G, for operating the wings or blades. H I are sliding or rolling rods, the lower ends of which rest on the cams D E, while the upper ends bear on the sleeves U of the blades A. The rods are not



mechanically connected to either the cams or sleeves, but move to and fro under the action of the oppositely-set cams; thus, when the cams E are pushing up the rods I, and consequently the outer ends of the sleeves U, the inner ends of the latter are pushing down the rods H on to the cams D. Similar rods, not shown in the diagram, are provided to give a to-and-fro motion to the blades B. These rods are, of course, somewhat differently arranged, owing to the blades B being at an angle to the upper ones, A, and are actuated by the cams F G. Mounted on counter-shafts N' N'', above and below the main shaft, by which they are driven, are cams V V', of a special variable-incline form, and mounted so that while these must rotate with their shafts they can be moved laterally along them. It is by this means that the inclination of the blades, one to the other, can be varied; suitable connection being made between the special cams V V' and the inner ends of the blade. The mechanism is so arranged that as the blades A are being lifted by the rods I, those marked B are being pushed forward, the claim being made that the double-acting effect of oars in ordinary rowing is thus obtained.

M. Delprat argues that for a flying machine to raise itself and transport a person or persons in space, the proportion of the length of the part *a* of the blades to that of the portion *b* (the point of support of the sleeve U being the dividing line) must be smaller than the proportion between the number, *M*, of kilogramme-metres per second than that represented by the formula $4 P V + 2 M$, in which *M* is the power of the motor in kilogramme-metres per second, *V* the speed of the centre of action of the blade, and *P* the resistance to be overcome, the latter being the resultant of the total weight of the machine and the resistance of the air to its progress. By means of suitable levers, acting on the cams V V', the conductor

can set his flapping wings at any desired inclination, while a rudder is also provided for steering purposes. The weight of a flying machine, with its passengers, as above outlined, would be equally divided between (1) motor, (2) the hull of the ship, wings, etc., and (3) the passengers.

M. Delprat, who is a French civil engineer and a mathematical expert, has made some careful calculations as to the pressure of flying machines on the air during the action of flying, and the power required for their propulsion, and is incorporating these in an extensive treatise on the subject.

THE TENDENCY OF THE MODERN AUTOMOBILE.

LEAVING out the question of very high-powered cars, there can be but little doubt as to the three leading classes of cars, which now appear to have come to stay. Let us take these classes separately. Firstly, there is the two-seated single-cylinder voiturette of about 5 or 6-h.p., with or without a hood, eminently suitable for travellers and medical men, the price being between £150 and £200. This type of automobile is becoming more *en evidence* every day, and nearly all firms, whether large or small car manufacturers, are turning their attention in this direction, and are producing a reliable vehicle well within the reach of the pocket of "the man of moderate means."

Secondly, there is the medium-sized car. This takes the form of a comfortable four-seated car, propelled by a double-cylinder engine of about 8 or 9-h.p., its price being from £300 to £350. It is designed to carry four people with comfort, and is capable of averaging a good twenty miles an hour over average roads. If we glance at the lists of most manufacturers, whether English or foreign, we find that this type of car is a prominent feature.

Thirdly, there is the high-powered class of car designed essentially for touring. It is a four or five-seated car propelled by a four-cylinder engine of about 12-h.p., and it has these very desirable points:—It is capable of a good speed on the level, say thirty-five miles per hour, and it is speedy uphill—that is, it will surmount the average hill at about sixteen miles per hour, thus enabling a very good average to be maintained during the day's journey. The price of this car will be found to be between £500 and £600, and, although not within the reach of everyone, it is unquestionably the modern touring car. Users of the type of car in the second class mentioned above will, after a year or two's use of the same, dispose of it, and purchase the four-cylinder type. If legislation is going to limit us to twenty miles per hour, it is certainly useless to own a higher-powered car than the last mentioned. After all is said and done, for a good touring car one surely cannot wish for more than an average speed of about twenty-eight miles per hour, and absolute comfort.

R. A. C.

No less than 23 motor-cars will be engaged in the forthcoming manoeuvres of the 4th and 12th Army Corps in Saxony.

THE American Motor League estimates that the number of automobiles in use in the United States amounts to about 51,000, and is increasing at the rate of about 1,200 to 1,500 per month.

Of the American team who competed in the Gordon Bennett race, the first to reach home is Mr. I. P. Mooers, of Cleveland, who, on landing in New York, fell into the hands of the inevitable interviewer. Asked as to his opinion of the Cup race, Mooers replied:—"We were outclassed, and that's all there is to say." The driver of the "Peerless" recounted briefly the troubles that put him out of the race, the first of which was due to a tyre pulling off about forty miles from the starting point, while a similar accident near the end of the first circuit led him to withdraw. He complained very much of his tyres, but admits that he gained much information which will be of great use to him in the design of the racer he intends building for the 1904 contest.

CONTINENTAL NOTES.

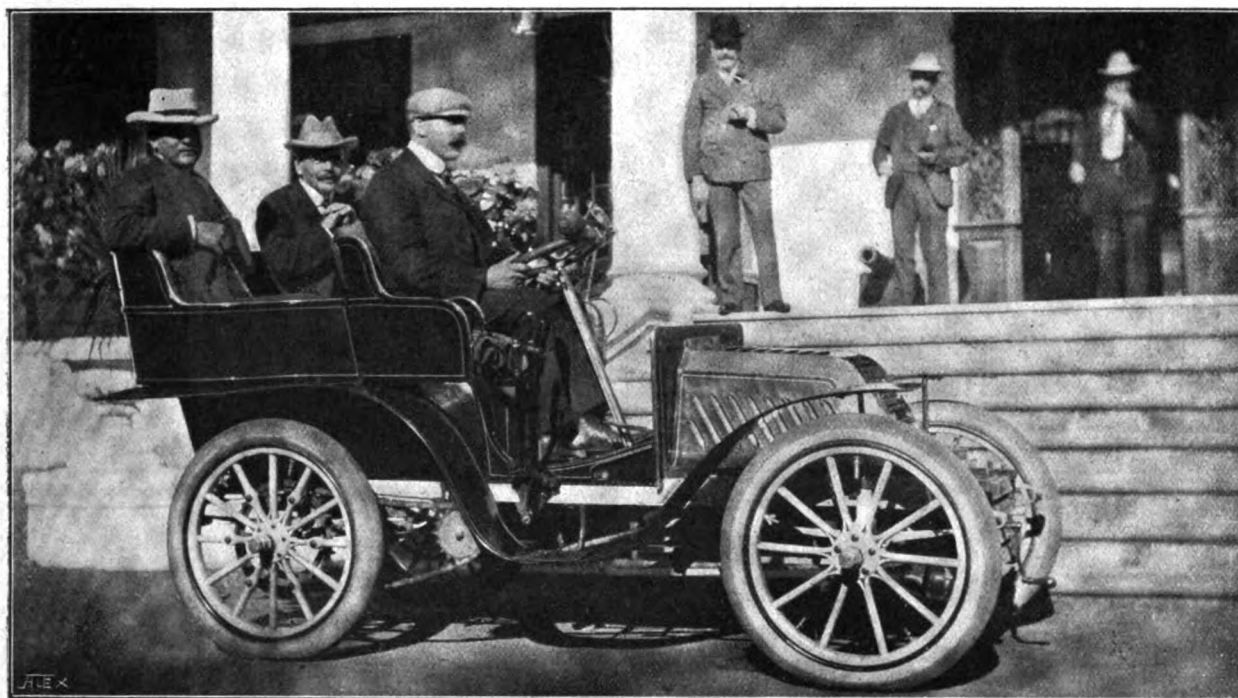
By "AUTOMAN."

ALTHOUGH Paris is emptied of its fashionable residents and visitors, who are taking their summer holidays at the seaside, or in the mountains, or in automobile tours through the length and breadth of Europe, there still remain the devotees to aeronautics, who are making the most of the summer time to complete trials of their inventions at the time of the year when the atmosphere ought to be in the most tranquil and favourable condition. I say advisedly "ought to be," for, as a matter of fact, the weather in and around Paris lately can be summed up by a succession of storms. Amongst the above mentioned devotees comes, first and foremost, the little Brazilian, Santos Dumont, whom I happened to meet dining out on the Bois de Boulogne the other night. M. Santos Dumont is hard at work on his aerial omnibus, with which he hopes to carry a large party shortly to Trouville. From time to time he takes short flights about Paris on his smaller air-ship. Amongst the experiments he made with this latter was

the Engineers, M. Hirschauer, to examine with you the measures to be taken to carry out your proposition. Lieutenant Colonel Bourdeaux, one of the heads of my department, will also assist, so that I may be personally informed of the results of your collaboration."

M. SANTOS DUMONT proposes to make the following practical experiment. His little balloon will be packed up and put in the train in Paris, with tubes of compressed hydrogen for inflating it. The War Office will choose a fortified town on which to make the trial, and the train will carry the balloon and the staff of workmen within a short distance of the chosen town. The balloon will then be unpacked, inflated, and Mr. Dumont will endeavour to fly over the town.

THE Paris municipal authorities have ordered a 30-h.p. automobile street watering cart, capable of travelling from ten to twelve miles per hour with a load of over one hundred gallons of water. In winter time it can be transformed into a cart to carry the snow away or to transport any other material. The first trials



Mr. O. E. Bush on a 12-h.p. Gladiator outside "Groote Schuur," the South African Residence of the late Hon. Cecil Rhodes. The gentlemen in the tonneau are Dr. Jameson and Mr. Abe Bailey, M.L.A.

a demonstration at the review which took place on the French National fete day, the 14th of July, on the Longchamps race course in the Bois de Boulogne.

A FEW days after the review M. Dumont wrote to General André, the Minister of War, a letter in which he offered to put his balloons at the entire disposition of France in case of a war with any country except his own, "Brazil." In reply M. Dumont received the following letter from General André:—"Sir,—During the 14th of July review I remarked and admired the ease and certainty with which you steered your balloon. It was impossible not to recognise the progress that the problem of aerial navigation owes to you. It seems that, thanks to you, it is now of practical use, especially from a military point of view. I judge that it can render great service in time of war. I therefore accept with thanks the offer which you make to place your aerial fleet at the disposition of the French republic in time of war. I thank you for your generous proposal, which gives witness to your real sympathy with France. I have chosen the head of the aerostatic battalion of the 1st regiment of

of this useful vehicle will take place in the Bois de Boulogne on the 20th inst.

A STRIKING instance of the absurdity of the numbering system has just come to light in France. M. Ernest Archdeacon was charged on July 30th for having upset a cab on the Champagne road on the 9th of September, 1902, and with having seriously wounded three persons and taken flight. The reason of the delay in making the charge is easily to be understood when it is known that one witness said the number of the motor-car was 706F, whilst another said it was 706S, and a third affirmed that it was 706E, which happens to be M. Archdeacon's number. The magistrates have been trying them all in turn. Fortunately for M. Archdeacon he can prove that he was in Switzerland at the time, and that his car was in the repairers' hands at the time.

THE Laffrey hill climbing trial took place last Sunday for the third time under most favourable conditions. The weather was bright and sunny, and the surface of the roads in good condition. A great crowd assembled to see the race, including

many well-known Parisian enthusiasts. The laurels of the meeting fell to Gobron-Brillie, for not only did two of these cars head the heavy car class and also the general classification, for the hill climbing contest, but the de Caters cup for the kilometre with a standing start fell to a Gobron-Brillie driven by Rigolly in 50 1-5 seconds, beating Serpollet's record last year by just 9 seconds, and also beating a Paris-Madrid Mors car by 7 3-5 seconds.

RIGOLLY climbed the hill in 5 min. 33 sec. at a speed of nearly forty-four miles per hour, and Duray on a sister car was 35 3-5 seconds after him. In the light car class Beconnais on a Darracq headed the list in 6 min. 12 3-5 secs., and another Darracq driven by Osmont took the second place. Two Darracq voitures carried off first and second places in their class, and the first of the two, driven by Wagner, took the fourth place in the general classification. The third, fourth, fifth and sixth places in the general classification fell to Darracqs. In the motor-cycle section, Dorny, on a Clement, was first in 7 min. 58 sec. from a standing start. In the tourist class a 60-h.p. Mercedes was the winner, driven by the Count de Rougemont.

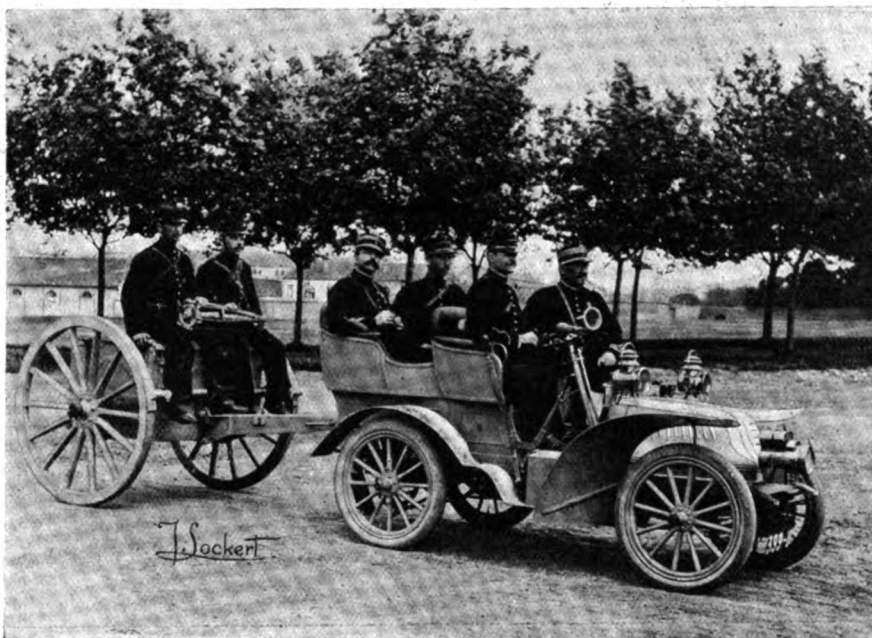
ON Monday a novel competition was decided at Uriage in connection with the Laffrey meeting, viz., a series of trials over

events, namely, one for the heavy class, 100 kilometres, and one for the light class, 40 kilometres.

ON September 13th there will be held at Schottwein-Semmering the annual Austrian hill climbing trial organised by the Austrian Automobile Club, and generally known as the "Semmering Hill Climbing Trial." There will be the usual four classes, namely, heavy cars, light cars, voitures, and motor-cycles.

IN automobile circles the question of next year's racing programme is being actively discussed, and widely differing opinions as to the most interesting course to be followed by the chief organisers are held by various sections. One thing is certain; racing there will be, and probably the chief event of the year 1904 will be the eliminatory trials for the choice of the Gordon Bennett cars, for an arbitrary choice such as has hitherto been made by the racing committee of the A.C.F. will no longer be tolerated. One idea is to have a great eliminatory race, in which each manufacturer will be permitted to enter three representative cars, the three cars which win the race to compete for the Cup.

A MONUMENT in memory of the late Marcel Renault is



An Ader Car in use in connection with the French Military Manœuvres.

[Le Chauffeur.

a 500-metre course, the competitors to make a standing start and a stopping finish—that is to say, the cars had to be brought to a stand on the finishing line. Le Blon, on a Serpollet, and Rougier, on a De Dietrich (Turcat-Mery), shared the honours of the day, both tying for the first place in the general classification and the heavy car class, the time being 39 sec.

A PROPOSITION is on foot to institute a race from Paris to Trouville, down the river Seine, for motor-boats; there are, however, many difficulties, and not the least of them will consist in the question of pilots, for there are parts of the river where sand-banks abound where the channels are continually shifting, and where only an expert pilot can find the way and avoid running aground. These spots are already marked by many wrecks. It remains to be seen, however, whether motor boats with small draft and great ease of manipulation will be better able to negotiate these shallows. The race is, however, to take place on September 6th, and there are already twelve entries.

A WEEK later the "Auto" will hold a motor boat race on the upper reaches of the Seine, above Paris. There will be two

shortly to be erected in Billancourt, on a site granted by the local authorities, near the Renault works.

TROUBLE is brewing for motorists in Vienna. In a circular to the municipal authorities, signed by a number of citizens, and calling for restrictive regulations, the motor-car is described as "an infernal vehicle," which runs about snorting, rattling, clattering, and the occupants of which are rendered unrecognisable by their ridiculous clothing. The chauffeurs drive recklessly, without any consideration for the foot passengers, and it is therefore proposed that automobiles should be silent and odorless, and should be numbered. They should also on all occasions be driven slowly, and women should be strictly forbidden to drive."

THE 5-kilometre per hour regulation in the crowded parts of Brussels is likely to continue in force for some time. The Lord Mayor is at present away holidaying, and in answer to a deputation of the Chambre Syndicale de l'Automobile, on the subject, the deputy-mayor said that nothing could be done in the matter until October.

MOTOR-CYCLING NEWS.

THE 1,000-miles reliability trials for motor-cycles organised by the Auto-Cycle Club were started by a run to Canterbury and back on Tuesday, the weather being anything but favourable. Forty-eight machines have been entered, including most of the best-known makes, but it is to be regretted that in consequence of the objection to certain points in the marking, a few of the leading manufacturers are not taking part. However, among the entries are the Ormonde, Bat, Kerry, Peugeot, J.A.P., Noble, Booth, Roc, Griffon, Ariel, Brown, King, Lagonda, Castell, Jehu, Chase, Matchless, Regina, Evart-Hall, Alldays, Werner, Phoenix, F.N., Weller, Bradbury, and R. and P. The trials will comprise nine journeys in all, making up a total of 1,034½ miles. A minimum average speed of twelve miles an hour must be maintained, but the routes are divided into sections of ten miles, and a minimum and maximum time is fixed for each portion. A rider will render himself liable to disqualification if he arrives at a stopping-place ahead of time more than once on any day or more than four times in the course of the trials. Marks will be awarded for a speed test on the track at the Crystal Palace, accessibility, petrol capacity, style and finish, efficiency of brakes, and other points which enter into the requirements of a motor-bicycle. Hill-climbing tests will be held on two severe ascents, but no marks will be awarded, a record being simply made of the performances, and of the amount of pedalling, if any, which was required. Marks will, however, be deducted for failure to ascend a third slope of average gradient.

THE Rex Motor Manufacturing Co. write us as follows:—"You will doubtless have been surprised to notice that, although we are one of the firms which protested against the rules governing the 1,000-miles motor-cycle trials, a Rex motor-bicycle is nevertheless entered in the trade section. In case this entry may put the trade under the impression that we have not acted fairly in this matter, we shall take it as a favour if you will allow us to state that Mr. H. W. Stones' entry was entirely private, and that we had no knowledge of it until we saw it in print. We immediately took this matter up with Mr. Stones, and when he became aware of the reasons why we, in conjunction with other firms, had refrained from competing in these trials, he immediately decided not to start."

At the Canning Town track on Friday, last week, T. H. Tessier on his Bat motor-bicycle beat world's motor-cycle records from six miles to 15 miles inclusive. His time for the full distance was 16 min. 47.3-5 sec. Tessier also lowered the five miles flying start world's record to 5 min. 3.1-5 sec.

As mentioned last week, the annual race meeting will be held on the Crystal Palace track on Saturday, the 22nd inst., when three events are to be decided: 1, one hour invitation scratch race; 2, a five miles handicap; and 3, one mile time trials (flying start). The entry list closes to-day (Saturday). In the official notice of the meeting sent us by the Auto-Cycle Club, we observe that the name of Mr. D. Citroen is given as the holder of the *Motor-Car Journal* Challenge Cup, in place of that of Mr. S. C. Holloway, who won it last year.

THE Circuit de l'Herault, for motor-cycles, which was to have been held on the 10th inst., did not take place owing to the Prefet declining to give the necessary permission.

At the Celtic Football Club's sports at Celtic Park, Glasgow, on Saturday last, H. Martin, on his Excelsior, beat the five miles motor-cycling record, doing 5 min. 53.3-5 sec., or 29.3-5 sec. faster than the former fastest from a standing start.

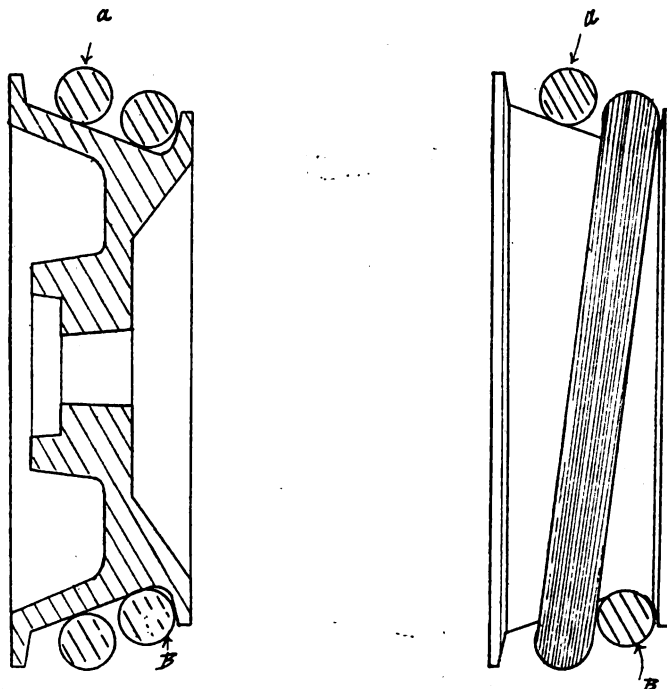
A LIEUTENANT in the Russian Army, Nicolas Griboiloff, is at present engaged on a ride from St. Petersburg to Paris on a

4½-h.p. Peugeot quadricycle. The lieutenant, accompanied by his wife, passed through Berlin a few days ago.

EFFORTS are being made to form a motor-cycling club for Manchester and district.

By the use of a motor-cycle a rural postman in Pennsylvania is covering his route in one-third the time it required with a horse and cart.

THIS week we give illustrations of a new driving pulley for motor-bicycles which has been introduced by Mr. F. Brittain, of Twickenham. It is known as the Duplex Pulley, and has been designed to reduce the liability of driving belts to stretch and slip. The drum of the pulley is made cone shape and of sufficient width to allow the round belt to be wound round one complete turn in addition to the amount that would run on an ordinary pulley; this additional winding tightens up at each impulse of the motor and thus gives, it is claimed, the elasticity required to take off the sudden shock at each impulse of the motor. The cone shape of the pulley gives the belt a transverse movement across the pulley as it turns around, equal to the thickness of the belt, each revolution of the pulley. At A the belt is shown running on the pulley, and at B running off. Mr. Brittain informs us that he has ridden his 2-b.h.p. motor-bicycle, with a



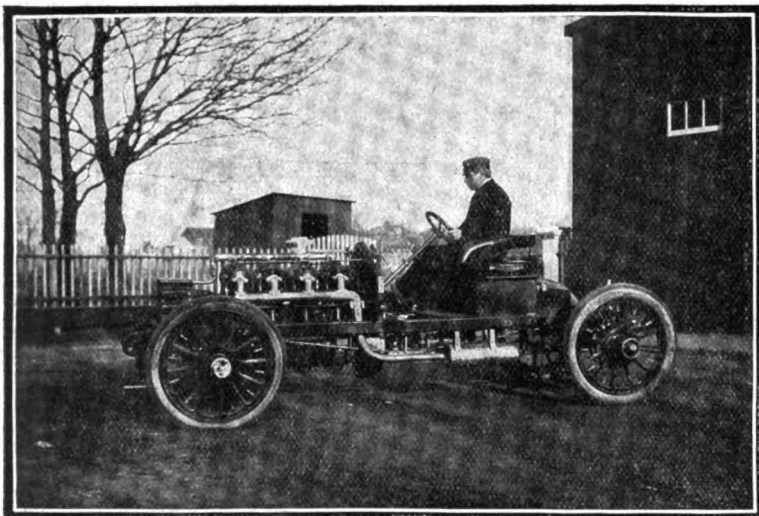
Duplex Pulley and a ¾-in. twisted hide belt, several hundred miles many times doing a journey of thirty miles on the road under 1½ hours without dismounting from the machine, the stretch on the belt not being sufficient to need tightening. Mr. Brittain claims for his pulley that the impulse of the motor is automatically eliminated and thus the life of the belt and hook is lengthened many times. The belt is also prevented from slipping by reason of the locking action, which increases as the power of the motor increases. The favourite round hide belt is most suitable for the new pulley, a ½ inch one being ample for 2½-h.p. motors. Oil on the belt is said to rather improve the running than otherwise, there being a reserve of grip with the pulley bright and the belt well oiled.

THE "Auto" is organising a race for motor-cycles based on a limit of quarter of a litre as the cubical contents of the cylinder. The meeting will take place in Paris between the 14th and 20th of September, and the course will be 100 kilometres. The weight of the rider and his saddle must be 75 kilos. at least, that is to say, 1 cwt. 1 qr. 25 lbs. No pedalling will be allowed.

SOME USEFUL NOTES.

A CONSIDERABLE portion of the prejudice which still exists against the petrol car arises from the necessity of having to start the engine by hand. Many automobile motors are, of course, arranged to be started from the seat, and some of the four-cylinder engines which use high-tension ignition are practically self-starting after short stops by the simple operation of moving the spark timer to the position where the sparking circuit of the proper cylinder is closed. The majority of engines, however, must be turned by hand after the preliminary operations are completed.

It is an advantage to have the handle permanently attached to the engine shaft through a ratchet mechanism, as the trouble of attaching it and removing it and of storing it away in the vehicle is thus avoided. The danger of its being lost is also obviated. The necessity of flooding the carburettor in order to secure the first explosion is, remarks Mr. A. L. Clough in the "Horseless Age," one of the steps of the starting process which ought to be done away with, if possible. If it cannot be dispensed with it should be so conveniently arranged as to be the work of an instant, not to necessitate the laying back of any part of the machine or to require stooping under the vehicle or



Mr. L. P. Mooers on his Gordon Bennett "Peerless" Racer.

soiling the hands. In order to prime the carburettor of some machines the bonnet must be lifted before the operation can be performed. The turning on of the lubricating oil is a necessary part of the starting operation unless splash lubrication, a mechanical force-feed system, or cups actuated by the pressure of the exhaust are employed. If a magazine lubricator is used the trouble of turning on the supply is minimized, but where there are several independent cups the operation of starting is correspondingly complicated. Mechanical lubricators are certainly very convenient in this respect.

AN attempt to start the engine with an early spark is likely to result in a sprained wrist, if nothing worse, especially if the cylinder be large. There is nothing more "jarring" to the system than to have a large engine "kick back" when the whole strength of the *chauffeur* is acting in the opposite direction, and the provision of means to automatically set the spark late in the stroke, before starting can be attempted, is a valuable point in any motor-car. An interlocking device connected with the spark timer and acting to prevent the attachment of the crank, unless the spark be in the late position, forms a useful feature of one well-known vehicle. In some cars the spark is normally set at a position sufficiently late for safety in starting, and is advanced by means of a pedal acting against a spring which serves the purpose

of an "accelerator" in speeding up the engine only so long as it is pressed down. The provision of relief cocks conduces to ease in starting, but their use is by no means general except upon single cylinder engines, which, if of any considerable size, should pass compression only with great difficulty.

A PERSON who has just acquired a motor-car is almost sure to make "bad breaks" when attempting to start his engine unless he is very cool and methodical by nature. Too often one sees an owner step jauntily up to his car at the kerb for the purpose of making an exhibition for the benefit of the assembled throng. After making a few passes at the car he gives the crank a smart twist, but the expected does not happen, even after several breathless attempts. He generally finds that the interruptor plug is in his pocket, or that he has not turned on the petrol, when he comes to the thinking stage of the performance. All this bungling hurts the reputation of the automobile as a practical conveyance.

THERE should be a regular routine of operations when starting, and one should be deliberate in performing them. For instance:—The oil may first be turned on and the relief cock opened, if one be provided. The petrol may be turned on and the carburettor may then be primed. A glance should be taken at the spark timer to make sure that it is in its late position; the engine turned, if a single cylinder affair, until it is just over compression; the switch put on and the handle given a sharp turn, when the motor will start as it passes the next spark point. A certain order of precedence, if adhered to, becomes habitual and there is no likelihood of any failure.

If a motor fails to start with its accustomed promptitude, it is folly to twist the handle exhaustively. There is a reason for the failure, which requires for its correction mental rather than physical energy. Of course, the trouble is due rather to a failure of the spark, a lack of charge, or a loss of compression. Perhaps the inlet valve has stuck and fails to operate, allowing no gas to be sucked into the cylinder. If the valve be accessible a touch will determine whether it be free or not. Sometimes in motors having an inaccessible inlet valve, a little stem is provided to allow one to test the valve's condition.

THE auxiliary spark gap, while it may not be a cure-all for ignition difficulties, does furnish ocular evidence as to whether the spark is passing or not, and assists in locating this class of troubles. Sometimes when one has had occasion to leave the machine on a down grade, it may be started without turning the handle, for as soon as the brake is released the car will move by gravity, and after it has acquired some momentum the spark may be switched on and the engine put in operation in this way.

ONE point to be remembered above all others in starting the motor is that a few quick turns of the crank will do more to start the engine than five minutes of slow turning.

FOR motor-cooling purposes always use soft water whenever possible; hard water gradually forms a deposit on the inside of the tubes, which is especially objectionable because of the fact that it soon reduces the efficiency of the radiator. In filling the tank always use a large filtering funnel—a funnel having a piece of wire gauze of fine mesh soldered inside. When the vehicle is new, and after filling the water tank for the first time, go over the circulating system very carefully to ascertain if there are any leaks; if so, repair them permanently before starting out. A temporary repair on the road is sometimes a necessity, but to avoid future trouble always make permanent repairs whenever possible. The smallest leak may develop at any time into a serious difficulty—especially if repairing facilities are far away.

THE Automobile Club of Florence is organising a race from Florence to Viareggio.

HERE AND THERE.

THE King of Portugal has acquired a C.G.V. car.

Two new motor 'buses are to be put on the road at Hastings.

A MOTOR-CAR is to be provided for the use of the Notts County Surveyor.

THE Lincolnshire Automobile Club will hold a run to Skegness to-day (Saturday).

A LONDON company is supplying men to clean the motor-cars of private owners.

ON the last Friday and Saturday in September motor speed trials will be held on the promenade, Southport.

LORD BOSTON has lately joined the ranks of automobilists, his choice having fallen on a 12-h.p. "Magnet" car.

A MOTION in favour of the speed limit being defined, proposed at a meeting of the East Sussex County Council, has been defeated.

THE third exhibition organised by the Belgian Chambre Syndicale de l'Automobile is to be held in Brussels from the 23rd January to 4th February next.

THE Birmingham Motor Express Company has been registered with a capital of £5,000 to carry on the business of motor-car manufacturers, etc.

MOTOR LIVERY, LIMITED, registered with a capital of £500 is the title of a company to carry on the business of manufacturers, repairers, and letters of motor-vehicles, etc.

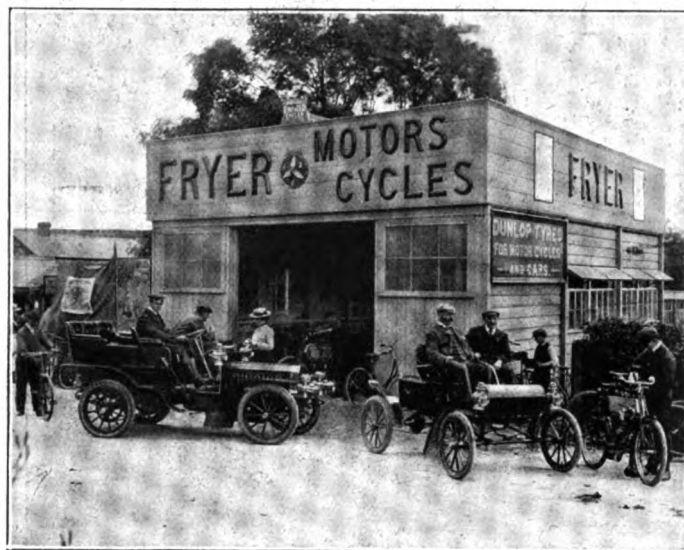
MR. J. WILSON'S protest against the timing of his car in Class D of the Phoenix Park trials has been upheld. The time was 2 mins. 14½ secs., not 3 mins. 14½ secs., as originally given.

MESSRS. BROOKE AND CO. have established a garage with an inspection pit in Parliament Street, Ramsey, Isle of Man, a few minutes from the landing stage of the Isle of Man steamers.

THE motor 'bus which was hired by the Wolverhampton Corporation has been tested by the mayor and other members of the corporation, and it has started running on the Dudley road route.

AS Captain Low, of Kilshane House, Tipperary, was motor-ing to the Clonmel Horse Show the other day, a tyre punctured, his car was overturned, and he received considerable injuries.

RECENTLY we mentioned the new garage established by Mr. James Fryer at Kington (Herefordshire) on the main road from



London to Aberystwyth. In the accompanying photograph Mr. Fryer, who is an agent for cars as well as a repairer of the same, can be seen at the helm of the Oldsmobile.

AN explosion of petrol in the shop of a cycle agent, Mr. Paley, Morpeth, has destroyed the premises and severely injured the proprietor, an apprentice, and a customer who was in the place at the time.

THE Lancashire Steam Motor Company have just received an order for eight of their Colonial 4-ton tip wagons for Cape Town. It is interesting to learn that the builders have guaranteed delivery of the eight vehicles at the rate of one per week.

THE Automobile Club of New Jersey has voted a sum of money to cover the expense of placing signboards at intervals along the road between Highland Park and Perth Amboy, N.J., for the guidance of automobilists driving from New York or Newark to the coast resorts.

THE staff and employees of the firm of Alfred Dunhill, Limited, have been entertained at dinner on the occasion of the opening of new premises for the manufacture of motor clothing, etc., at Tottenham, N. Over eighty sat down, and Mr. Dunhill, in responding to the toast of the firm, dwelt on the growth of the "Motorities" section of the business, which was materially assisted by the harmonious relationship existing throughout the firm.

MANY motorists drive up too close to the kerb stones, and in doing so the friction on the sides of the cover naturally causes it to wear out on the sides, so that sooner or later the canvas layers are exposed. Although, remark the Continental Tyre Co. in their handbook, this does not make the cover unfit for use at once, it is advisable to send it to the maker for repair immediately. In most cases it is sufficient to replace the rubber which has been rubbed off, and this can be done comparatively cheaply, but in some cases a new rubber tread may be required. This, of course, depends entirely upon the extent of the damage. If, however, the exposed canvas layers become partially or completely destroyed by continued driving against kerb stones, it may become quite impossible to repair the tyres in question. It is therefore advisable to carefully avoid driving against kerb stones.



Dr. H. Nelson Jackson at the wheel of the Winton Car on which he has just made the journey from San Francisco to New York.

MESSRS. JULIUS HARVEY AND CO. have secured an order for a steam motor vehicle with canopy, to be used for carrying hunting parties to the meet. After the hunting season this car, in the form of a light motor-wagon, will be used for general agricultural or farm purposes.

DEPICTED in the accompanying illustration is the 'motor-chemical engine which forms part of the equipment of the Liverpool Fire Brigade, with Capt. Thomas, the chief superintendent, seated at the side of the driver. The engine is mounted on an 18-h.p. Daimler chassis; the road wheels have recently been



fitted with 3 in. high-speed Royal Buffer tyres by the Sirdar Rubber Co., which enables the vehicle, notwithstanding its weight, to attain speeds up to 25 miles per hour, and consequently to reach the scene of a fire in a minimum of time.

THE Automobile Club of America has just published, for the use of its members, a handy pocket volume containing a copy of the full text of the automobile law in each of the following states:—New York, New Jersey, Pennsylvania, Connecticut, Massachusetts, Rhode Island, Vermont, Maine, and Delaware.

THE Holcar Company, Limited, has been registered with a capital of £30,000, to adopt an agreement with Mr. W. K. L. Dickson and the United Kingdom Inventions Association, Limited, to construct and deal in oil and other motors, locomotives, and vehicles, and to carry on the business of engineers, etc.

IT having been freely stated that the successful Mercedes car in the Gordon Bennett Race was fitted with 5 in. tyres, the Continental Caoutchouc Co. write to the effect that the tyres fitted to Jenatzy's car were not 5 in. throughout, but that the front wheels were fitted with 90 mm. or 3½ in. tyres, and the back wheels with 120 mm. or 5 in. tyres. The 3½ in. tyres used on the three competing Mercedes cars stood as well as the 5 in. tyres.

ONE of the new clauses added to the Motor-Car Bill on Tuesday is as follows:—"The Local Government Board may, by regulations made under Section 6 of the principal Act, prohibit or restrict the driving of any motor-cars, or of any special kind of motor-cars, on any specified highway, or part of a highway, which does not exceed 16ft. in width, or on which ordinary motor-car traffic would, in their opinion, be especially dangerous."

THE Rev. F. T. Wethered, a Berkshire vicar, regrets the poverty of the English language. In fact, according to him, "there is no language of any sort half strong enough to express

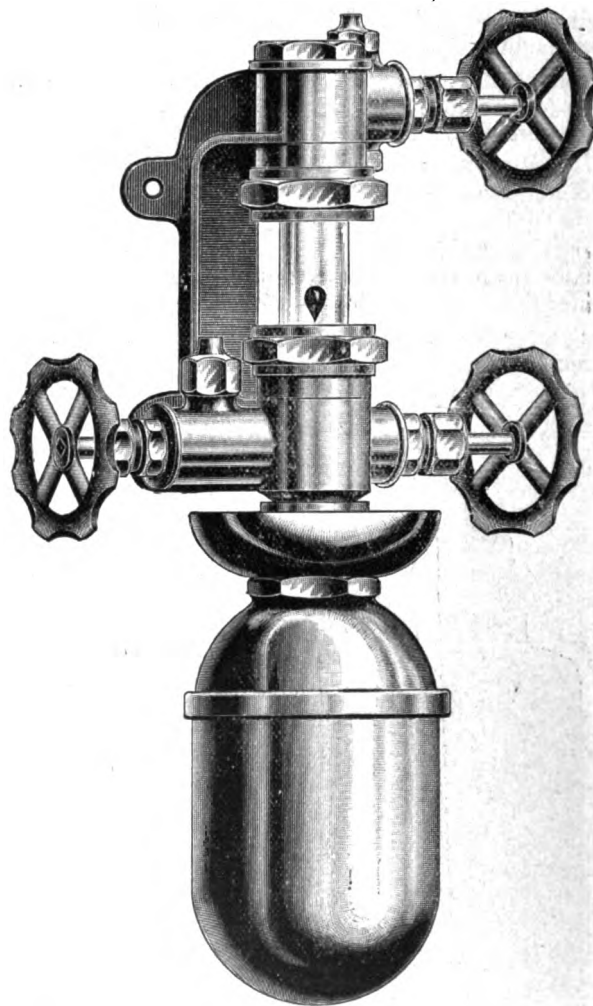
my detestation of these damnable engines of Satan." The reference is to motor-cars, and the clergyman who is anxious to find adequate expression for his thoughts has made a vigorous start on the road to success. A trip to Billingsgate might assist him.

ON another page we publish some interesting remarks on touring by motor-car culled from an article on the subject by Mr. Robert Bruce in the columns of the "Automobile Magazine."

THE Home Secretary has given notice that he has certified the manufacture of electric accumulators to be "dangerous," under the Factory Acts, and that he proposes to make regulations to apply to all factories and workshops in which electric accumulators are manufactured.

FROM Messrs. W. Butcher and Sons comes a new Primus handbook, "Photography with Roll Films," by Mr. John McIntosh. Having regard to the number of motorists who carry cameras, particularly of the daylight loading kind, this volume of nearly 200 pages gives practically everything that the amateur photographer wishes to know.

THE Albany Manufacturing Company, Ltd., of Willesden Junction, N.W., have recently introduced the automatic injector sight-feed lubricator illustrated herewith. It is specially designed for use on steam motor-cars, and is made of gun metal throughout. The reservoir is detachable from the upper part for replenishing the oil supply. It can thus be filled away from the



car, and the superfluous oil wiped off before replacing, thus preventing the oil being spilled about the vehicle. The best place for the lubricator is in front of the driver, preferably on the splash-board of the car, so that the oil-feed is always in sight; and it can be adjusted to deliver from twelve drops of oil in one minute to one drop of oil in twelve minutes to the engine cylinders, and valves.

THE FRANKLIN PETROL CAR.

ALTHOUGH, so far as this country is concerned, considerable scepticism is shown with regard to the use of air-cooled engines in other than motor-cycles, there are several American manufacturers who claim to be using them on cars with success. The accompanying illustration shows the neat two-seated car, the production of the H. H. Franklin Manufacturing Company, of Syracuse, the feature of which is that the motive power is supplied by a 10-h.p. four-cylinder air-cooled engine. The frame is made of angle iron stayed by cross supports from the same material. To this frame is attached the engine and transmission, the petrol tank, oil pump and ignition dynamo. Four full elliptic springs, thirty-four inches long, are attached to the frame and rest directly on the axles. The motor, which comprises four air-cooled cylinders of the vertical type, is located in the fore part of the frame under a bonnet. The bore and stroke is $3\frac{1}{4}$ inches, while the speed can be varied from 300 to 1,200 revolutions per minute. The valves are integral with their seats, springs, etc., and are easily removed. One oil reservoir with automatic pump supplies oil to the crank case, the lubrication being on the splash system.

The current for the ignition is generated by an Apple dynamo, the auxiliary and starting current being furnished by a small accumulator constantly charged by the dynamo. The sparking plugs are of special design, giving unusually long insulation on the sparking end and preventing short circuiting by carbon deposits. Only one coil is used for the four cylinders. Two forward speeds, controlled by a lever at the side, and a pedal-operated reverse are provided, the gears being always in mesh, the power being transmitted through the desired pair by means of clutches. The gear box is attached to the engine base on the driving shaft.

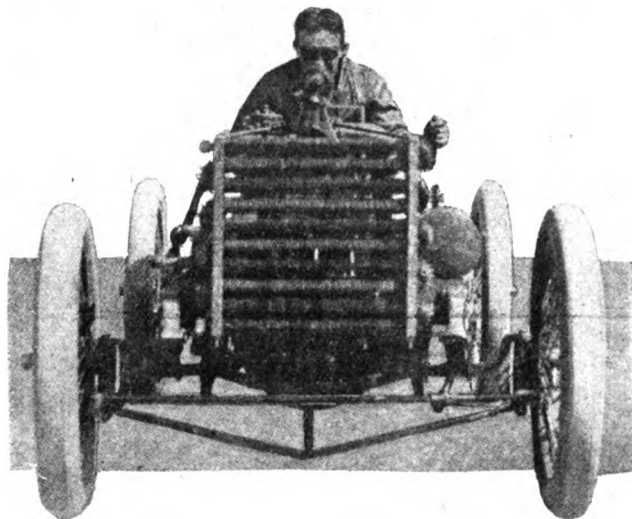
The running is almost all done on the high gear, on which, by means of the throttle and spark control, any speed from five to thirty miles an hour can be obtained. On the high gear the power is transmitted direct through a single centrally-located chain to the rear live axle. Wheel steering is provided, while a double-acting band brake is attached to the differential on the rear axle. In addition the reverse clutch operates as a brake on the transmission. Both are operated by



pedals. The low speed clutch will, it is stated, also hold the car on any grade, as the weight of the vehicle is not enough to drive it with the low clutch in if the engine is disconnected. The car has a wheel base of 6 ft. and is mounted on 28 in. artillery wheels shod with 3 in. pneumatic tyres. The weight, with petrol tank filled with seven gallons of petrol, comes out at about 10 cwt.

RECORD BREAKING IN AMERICA.

AN interesting afternoon's racing was held on the Empire State track, near New York, on the 25th ult., when a number of new records were established. About 6,000 spectators were present, a large proportion of whom had journeyed to the track by motor-car, there being over 300 automobiles in the enclosure. The first event was a five-mile race open to cars weighing less than 1,200 lbs., in which five competed. The winner was J. Wilkinson on a 10-h.p. four cylinder air-cooled Franklin, who covered the distance in 6 min. 54 secs. Following this came a successful attempt at the mile track record by Barney Oldfield on his Ford-Cooper 80-h.p. racer, with bar steering, who reduced his own figures from 56.2-5 secs. to 54.4-5 secs. A



Barney Oldfield on his Record-Breaking Car.

[Motor Age.]

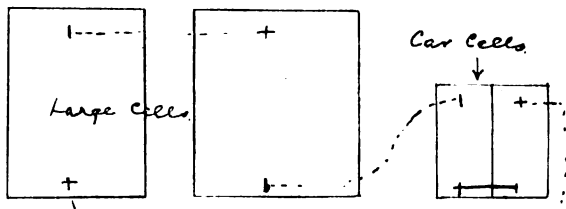
ten-mile race only brought out two competitors, J. Wilkinson on a 10-h.p. Franklin beating J. Tracy on a 10-h.p. Renault, time 15 min. 15.1-5 sec., claimed to be a record for the distance. The next event was an exciting one, being a fifteen-mile match between three racing cars—the Gordon Bennett 80-h.p. Peerless, driven by C. G. Wridgway, a Paris-Madrid 40-h.p. Decauville, driven by Henri Page, and L. Grosso on a 60-h.p. Mercedes. The latter proved to be the winner in 16 min. 10.4-5 sec., the Decauville being second and the Peerless third. A ten mile race for cars under 1,800 lbs. brought out four starters and was won by J. Sincholle on a 40-h.p. Darracq in 10 min. 52.4-5 sec., Page on the 40-h.p. Decauville being second. A five-mile match, best two out of three heats, was next decided between Barney Oldfield on his Ford-Cooper racer and F. A. La Roche. The latter had to use a 35-h.p. Darracq instead of a 70-h.p. car of that make he had intended to drive, so that Oldfield's victory was not unexpected. The best five miles was done in 5 min. 9.4-5 sec. A fifteen-mile open race brought out the Peerless racer, a 40-h.p., and a 35-h.p. Darracq, a 40-h.p. Decauville, and a 70-h.p. Panhard. This event proved a victory for Page on the Decauville, his time being 16 min. 39.2-5 sec. The afternoon's racing was concluded by a series of mile time trials, the best performance being that of Grosso on Mr. O. W. Bright's 60-h.p. Mercedes, 1 min. 3.1-5 sec. The afternoon's racing resulted, according to "The Automobile," in the breaking of the world's track record for one mile by Oldfield; all world's track records from one to ten miles for petrol cars weighing less than 1,200 lbs. were broken by the Franklin, while Grosso, on the 60-h.p. Mercedes, broke Bostwick's records for eleven, twelve, and thirteen miles made at the Empire City track in October, 1901, and Henri Fournier's records for fourteen and fifteen miles made at Fort Erie, Can., in September of the same year, for cars weighing more than 2,000 lbs.

CORRESPONDENCE.

QUERIES RE ACCUMULATOR CHARGING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have a 15-h.p. Panhard, with two 40-A.H. accumulators. I have also an electric light plant with fifty "E. P. S." accumulators for lighting the house. Can I charge the cells for my car from the lighting cells without a resistance? The lighting accumulators have seven positive plates each, and measure 16 in. by 12 in. What I mean is: If I disconnect two of these large cells which give 2.5 volts each, can I connect them up to the little car cells without any resistance, or will the current be too great? Must I reduce the amperage by some means, or will the small



cells just take enough and no more? I enclose sketch of the method of charging I mean,—Yours truly,

NEILAGE CURRIE.

MOTOR-CAR LEGISLATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Might I, as a member of the Bar and one who has driven motor cars since 1898 at least 60,000 miles, suggest the following way of dealing with the question of speed? It seems to me perfectly simple: (1) No speed limit; (2) every driver or owner who drives to have a licence (the fee to be paid for such licence is immaterial, but might reasonably be much lighter in the case of an owner than in that of a paid driver); (3) any one convicted of driving to the danger of the public to be liable to a fine and suspension of licence (i.e., absolutely prohibited from driving any car) for, say, twelve months, under penalty of imprisonment.

This I think should settle the whole difficulty—the paid driver will have his livelihood taken away, and the amateur or owner his pleasure. The new law as framed will give power to prejudiced magistrates to inflict imprisonment without the option of the fine, and I fear that a few benches will not be slow to take advantage of it.—Yours truly,

W. PLAYER BRIGSTOCKE.

THE HORSE-POWER OF PETROL MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the article which appeared in your issue of 25th ult. as to the horse-power of petrol motors, we are afraid it will be difficult to arrive at any satisfactory means of standardisation for the reasons we give below, and we think that probably the best plan would be for the buyers to insist upon being told the diameter and stroke of the engine, and the speed at which the stated horse-power is developed. We think that the brake horse-power given in the description of the car ought to be the brake horse-power which the motor will comfortably develop at the stated speed continuously for at least half an hour at a stretch; not more and not less.

As to the average of column nine, we would point out that, whereas the 173 litres per horse-power per minute would be ample in an engine running at a moderate speed, the probability is that it would be too small at a higher speed. For instance, in an engine running at about 700 revolutions per minute, a brake horse-power could be got comfortably for each 150 litres piston displacement per minute, especially if the engine were fitted with mechanically-operated inlet valves of ample area. At a speed of 1,800 revolutions, however, we would certainly be inclined to allow not less than 200 litres.

The question of compression has, of course, a great deal to do with it. The higher the compression the greater the output for the same piston displacement; but, on the other hand, the higher the compression the more violent is the explosion, and consequently the greater the vibration transmitted to the car. This consideration therefore limits the increase of b.h.p. to be got by modification in that direction.—Yours truly,

ALBION MOTOR-CAR CO., LTD.
F. B. MURRAY, B.Sc., M.I.E.E., Managing Director.

THE MIDLAND HILL CLIMB

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice that on page 452 of your last issue you give the official results of the Midland Hill Climb, but I regret to observe that they give the incorrect time, score, and position in the handicap for the 18-h.p. James and Browne car which I drove in the contest. The previous week you gave the correct gross time of the car as 3 min. 57.3-5 sec., from which it will be seen that the net time, after deducting one

minute for the two official stops, is 177.3-5 sec., and not 277.3-5 sec., as published, and from which the results have been deduced.—Yours truly,
T. B. BROWNE.

HORSE DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I would like to ask your readers if there is any law against what is now becoming a prevalent practice amongst horse drivers, viz., holding up their hand, signalling motor-drivers to stop the car when they have horses that do not even look at the car and trot by as quietly as if the motor was not near them.

I was driving a friend of mine to Maybole from Ayr (he is a horse driver) the other day, when we met a horse and trap coming in the opposite direction. The driver at once held his hand up. When he was passing, my friend asked him why he stopped the motor, and he replied, "restive horse." My friend told him it was not a restive horse, as he had himself driven the same animal for three years.

Horse drivers of this class cause a great many motor drivers to rush madly on, paying no heed to signals, simply because they think it is mere horse bluff on the part of the driver of the horse. We would have more careful motor drivers if we had more (in most cases) respectful horse drivers. Another point I would like to be made clear in, when a driver overtakes a horse vehicle and the horse driver holds up his hand, is the motor driver compelled to keep behind, or is he supposed to pass him (as long as it is not a restive horse or horses)? Hoping some reader will make these points clear.—Yours truly,

MOTOR DRIVER.

MOTOR-CAR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We have no desire to prolong this discussion on the lines it is now taking, as it does not bring us any nearer the point we want to get at. We do not suppose we shall alter Mr. Nixon's views by anything we can say, and up to the present he has not convinced us, so this will be our last communication on the subject.

Mr. Nixon asks for proof that Benz and Peugeot adopted vertical engines because they were fashionable. We can only say that, knowing the opinions held by the firms named on the horizontal engine, we assert it is so. We may, of course, be wrong, but we think not; and Mr. Nixon on his part produces no proof to the contrary. We do not take the statements of Consuls-General as proof upon all points. Just think what £4,320,000 means, and how many cars it represents. We are just hearing similar stories about the Gordon Bennett and Germany. In fact, £3,000,000 statements were flying about the day after the race. The Mercedes people will undoubtedly benefit by the win, but they are the only firm in Germany that will, to any appreciable extent, and they could not turn out the value named in three years. It means nearly 4,000 £1,000 (retail) cars, which, in the words of Euclid, "is absurd." We think we know as much of the motor trade as Mr. Nixon, and we say that, in the light of that knowledge and of common sense, such statements are absurd, whether they be made by Consuls-General or by newspapers, from which the Consuls-General obtain them.

Mr. Nixon said that it was to racing that we owe the silent car, and now he says he never said that in a race any car was silent, which is right. If he had said that the people who make racing cars have also shown they can make quiet ones, he would be right, but racing has had no effect upon it. Mr. Nixon says Jenatzy's Mercedes was very noisy, "but get the car ready for touring and see the difference." In this he proves our case. If racing has done anything at all, it has made cars more noisy.

We do not say that because the Mercedes firm have adopted throttle control they have copied our cars, but we do say they have adopted a system which we had been using five or six years, and that in doing so they made their cars quiet; and we do say that, because the firm named and other makers of racing cars did not adopt it earlier, the public, who could not believe that petrol cars could be made quiet, as the "best"—i.e., the fastest—cars in Europe were noisy, were deprived for many years of the luxury of (comparative) quietness which they now enjoy, and which would have been "discovered" and appreciated earlier but for the undue prominence given to speed and the makers of it.—Yours truly,

THE DURYEA MOTOR CARRIAGE CO.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The discussion between the Duryea Company and Mr. Nixon is unprofitable. A prospective purchaser who prefers the vertical motor has an almost unlimited selection; but how about the unfortunate individual who prefers a horizontal motor, or a different design of car? He is limited to some three or four patterns. Do not endeavour to deprive him of this limited choice, mistaken though he may be.—Yours truly,

J. W. W. B.

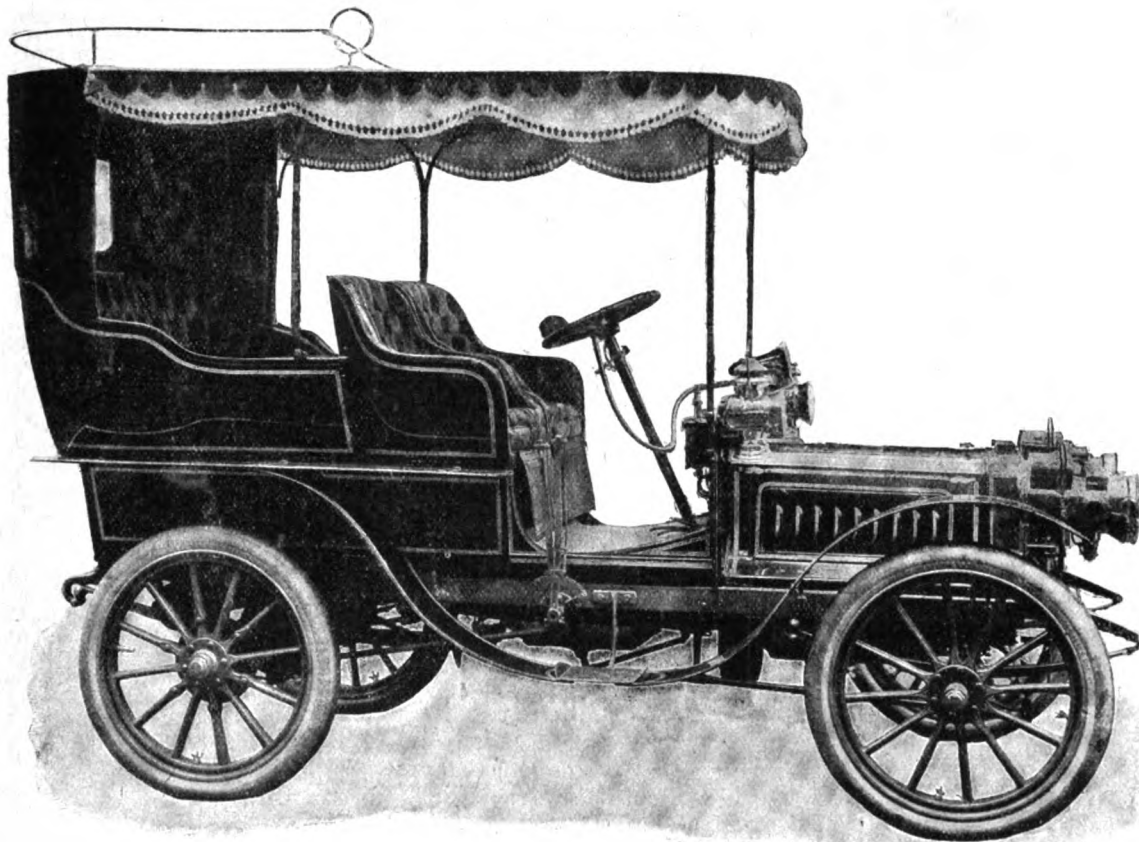
[This discussion is now closed.—ED. M.C.J.]

"FABER" writes:—I should be greatly obliged to any of your readers who have had experience of the Miesse steam car, of which I have heard curiously contradictory reports, if they would give me their opinion of it.

CLUB NEWS.

NORFOLK.

AT the invitation of Lord Hastings, the Norfolk Automobile Club had a most successful meet at Melton Constable Park last week. His lordship had made every arrangement to ensure the enjoyment of his guests, and, the weather being fine, a very agreeable time was spent. There was a large gathering of motorists and their friends, the cars and their owners including the following:—Lord Hastings, 16-h.p. Brooke; Messrs. P. Norgate, 4½-h.p. Eagle; Ray, 5-h.p. Benz; Evans Lombe, 10-h.p. Gladiator; J. A. Mills, 10-h.p. Gladiator; H. Egerton, 16-h.p. Gladiator; Perry, 5-h.p. Wolseley; Griffin, 12-h.p. Gladiator; Major A. V. St. John White, 6½-h.p. Gladiator; J. N. Brereton, 6½-h.p. De Dion; A. E. Fellowes, 16-h.p. Panhard; H. W. Bennett, 12-h.p. Panhard, driven by the Hon. C. S. Rolls; H. R. Everitt, 6½-h.p. Regal; A. E. Jarvis, 9-h.p. Dennis; E. Estcourt, 14-h.p. Brooke; H. G. Barclay, 12-h.p. Napier; A. Tritton, 16-h.p. Mors; H. L. Clark, 6½-h.p. De Dion; H. W. Williams, 4½-h.p. De Dion; B. H. Vores, 5½-h.p. Locomobile; W. C. Crawshaw, 14-h.p. Brooke, Mr. Crawshaw had also present a 6-h.p. Daimler, driven by Miss Savory of Sunrising, Warwickshire; R. Lawrence, 14-h.p. Brooke; and J. J. Dawson Paul, 16-h.p. Napier. The cars were arranged in lines in front of the main entrance to the Hall,



An 18-h.p. Clement Car fitted with special Phaeton Body by Messrs. Rothschild et Fils. The body is made entirely of aluminium; the front seat on the left swings forward, giving direct access to the back seats. The rear passengers are protected from dust by the brougham-like portion at the back, and by the aluminium canopy which forms a continuation of it.

with its splendid pillars and beautiful statuary. The guests of the day were received by Lady Hastings and cordially welcomed into the Hall.

KENT.

THE Kent Automobile Club were most hospitably entertained to tea by Mr. and Mrs. Bernard Arnold on their island in the Medway at Snoll Hatch on Saturday, over fifty members and their friends accepting the invitation. The event was all the more enjoyable as the party had to proceed up the river in boats for about a mile before the island was reached. The club have a run to Sevenoaks to-day (Saturday).

YORKSHIRE.

MANY entries are already promised for the Motor Gymkhana to be held on Monday, the 24th inst., by the Horsforth Agricultural Society, with the assistance of the Yorkshire Automobile Club. Entries should be sent to the secretaries, Messrs. T. Clough and R. B. Thackeray, High Royd, Horsforth, Yorkshire, by Wednesday next. There will be five events, comprising a bending race for motor-carriages, coach-house handicap, motor-cycle, obstacle and bending race, ladies' passenger handicap, and a legal limit contest. The full course will be about one-fifth of a mile over the grass, and the judges are Messrs. H. Briggs and W. Braithwaite.

SCOTTISH.

IN connection with the Scottish Automobile Club, a meet took place on Saturday at Coll-Earn, Auchterarder, by invitation of the Rt. Hon. Sir J. H. A. Macdonald, K.C.B., Lord Justice-Clerk of Scotland and president of the club. Unfortunately the rain came down in torrents both at Edinburgh and Glasgow, thus diminishing the number of guests by quite half. Shortly after noon the first car arrived from Edinburgh, and for an hour afterwards the road presented a stirring spectacle as the cars arrived at brief intervals. They were drawn up in line in front of Coll-Earn, and the visitors, after inspecting the lovely policies, were entertained to lunch, the Lord Justice-Clerk being assisted in receiving and entertaining his guests by his son, Mr. Norman D. Macdonald, advocate, and Mrs. Macdonald; and also by Professor Dawson Turner, M.D., one of the vice-presidents of the S.A.C., who is at present staying with his lordship.

Amongst the cars present was the De Dietrich of Mr. Geo. M'Millan, secretary of the eastern section of the club. Mr. John Adam, chairman of the western section, was on his Wolseley car, and Mr. J. Smith, general secretary of the club, was also on a Wolseley car. Major Reid and Mrs. Reid were on a Renault car, while Mr. Reid's brother, Mr. Andrew Reid, came on a steam car. General and Mrs. Alex-

ander were on an Oldsmobile car, and Mr. Douglas Croal, of Edinburgh, made a good journey on his Napier. Mr. Drummond, Stirling, was on a motor-tricycle. Professor Dawson Turner had his Delahaye present, and the Lord Justice-Clerk also had a car of the same design for inspection by the members in front of the house. The health of his lordship was proposed by Mr. Adam, and the Lord Justice-Clerk returned thanks for the hearty response which had been given to the toast. In the course of a short reference to the Motor-Car Bill, he said he had no doubt that members of the Scottish Automobile Club would act as educative instruments in their own districts and places, and that very soon the public mind would find out how absurd its fears were, and how absurd all this excitement was about motor cars. He further remarked that time was on the side of progress in automobile matters and in the education of the public mind. There was no doubt that automobilism was about to prove of the greatest possible benefit to the public. He was sure that the members of the club would make the best of anything imposed upon them by Parliament, and that the increased knowledge of the public upon the subject would soon cause a more reasonable view to be taken. Tea was afterwards served on the lawn, and, notwithstanding the unpromising weather conditions which prevailed throughout the day, a most enjoyable afternoon was spent. A large number of ladies also accompanied the motorists.

FURIOUS DRIVING CASES.

MOTOR-CARS.

MOTOR-CYCLES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Alresford.....	K. Cannon	—	£10, etc.
"	T. Biner	—	£2 10s., etc.
Weymouth.....	H. De Mattos, Weymouth	15	Dismissed.
Kingston.....	E. Smart, Newgate St., E.C.	23	Dismissed.
"	H. E. Wilkinson, Kilburn	—	£3.
"	H. Preston, Eaton Place, S.W.	—	£3.
"	W. Taylor, Gower St., W.C.	—	£4.
"	M. Braithwaite, Alwyn, Herts	—	£2.
Marylebone	T. Castell, Oxford St., W.C.	24	£5.
Loughborough	C. Clark, Mansfield	—	Dismissed.
Halifax	J. Hoyle, Halifax	16	£3, etc.
Midhurst.....	W. T. Bashford, Kentish Town	18	£5, etc.
St. Neots.....	J. D. Sanders, Gainsborough	20	£5.
"	L. Johnson, Child's Hill	24	£5.
"	E. Alderton	20	£5.
"	J. T. Bowen, Hampstead	24	£6.
"	W. B. Begg, London	23	£6.
"	E. M. Letts, Croydon	26	£6.
"	A. Rowe, Banff	25	£6.
"	A. Glover	30	£8.
Selby	H. Whitworth, Wath-on-Dearne	20	£2, etc.
Bingham.....	W. J. Foster, Edwalton	—	£1, etc.
Kingston.....	Sir R. Bulkeley, Bart.	21	£3.
"	Dr. G. H. Orton, Kensington	22	£2.
Spelthorne ...	Hon. R. Ward, London	22	£10, etc.
Greenwich ...	G. Badcock, Bexley Heath	25	£3, etc.
"	S. Norfolk, Lee	22½	£3, etc.
Mortlake.....	L. Leroy	22	£1, etc.
"	P. Dodson, Anerley	26	£5, etc.
Kesteven.....	C. Francis (Lord Londesborough's driver)	28	£5.
"	Dr. R. Purvis, Lincoln	22	£1, etc.
"	A. Allison, Derby	27	£2, etc.
"	F. Driffeld, Kettering	24	£1, etc.
Hull	C. Gaulard	27	£3.
Farnham.....	C. A. Pearson, London	22	£3, etc.
"	Lieut. J. F. Champion, Aldershot	20	£2, etc.
Woking	Baron de Forest, St. James's Place, S.W.	30	£5, etc.
Warwick.....	W. Crouch, Butlers Marston	—	£3, etc.
Reigate	E. Cunard, Cartland Sq., W.	21	£4, etc.
"	J. D. Hill, Gt. Portland St., W.	27	£3, etc.
"	J. H. Gatly, Manchester	18	£2, etc.
Croydon.....	G. Duval, Eltham	23	£5, etc.
London (South Western Court).....	F. Nicholls, London, S.W.	18	£3.
"	V. Bragden, Sevenoaks	—	Dismissed.
York	E. L. Cooke, York	—	£10.
London, Marlborough St.	G. Guignon, Twickenham	—	40s., etc.
"	C. Marshall, Hampton Wick	—	40s., etc.
"	W. Wilson, Westminster	—	40s., etc.
West London	Earl of Carnarvon	—	£5.
Towcester ...	R. F. Dickerson, Acton	25	£5.
Havant	Col. Sherwood, Southsea	—	—
Oakham	A. Mold (Earl of Harrington's driver)	—	£4, etc.
Fareham.....	F. S. Gibson	23	£7.
"	Capt. Collingwood, J.P.	—	£2.
"	Hon. Francis Agar, Chichester	—	£2.
Shoreham ...	G. Thursby	25	£5, etc.
"	"	30	£7 10s., etc.
"	A. Allday	26	£5, etc.
"	F. W. Polehampton	25	£5 12s.
"	J. Bruton	30	£5, etc.
"	R. Snelling	21	£5, etc.
"	O. Archer	26	£5, etc.
Epsom	E. Parker, Earl's Court	19	£3, etc.
"	J. Sharp, Hampstead	16	£3, etc.
"	F. Marner	19	£3.
Dorchester ...	G. E. Blanchard, Dorchester	18	15s., etc.
Retford	A. Fletcher, Addington	—	£10, etc.
Shoreham ...	Major Turner	25	£10, etc.
"	J. Lereculay	22	£5, etc.
Steyning.....	F. Jones, Wallington	20	£5, etc.
Oxted	W. Seymour, Aldershot	31	£3, etc.

Croydon	J. Greenlaw, West Dulwich	27	40s., etc.
Reigate	C. A. Smith, Westbourne Grove	—	Adjudged.
Taunton	R. Phillips	—	7s. 6d., etc.
Oakham	F. G. Kirk, Market Harborough	28	£3, etc.
Beaconsfield	J. H. Reeves, Earl's Court	—	£2.

Where no alleged speed is given it is understood to be above the legal limit.

THE driver to the Duke of Marlborough has been summoned to appear at the Deddington Petty Sessions on the 21st, for furiously driving a motor-car. The Duchess of Marlborough and the Hon. J. Choate, the American Ambassador, left Blenheim Palace on Bank Holiday for Broughton Castle, near Banbury. When near Deddington, about six miles from Banbury, the police ordered the driver of the car to stop on account of its alleged excessive speed. The automobile was afterwards allowed to proceed, on its being ascertained that it belonged to the Duke of Marlborough. The police had measured a portion of the highway, and allege that the car was going at a rate of about twenty-five miles an hour.

IN the case against Mr. W. Bashford, who was fined for driving a motor-car above the legal limit at Rake, in Sussex, the usual trap was laid and his distance was taken from a piece of paper in a tree a furlong away from where the policeman was in hiding on a down hill grade. He said the speed was seventeen miles an hour. A fine of £5 was required to settle such a rate of speed, whereas in other districts motorists whose speed is twenty-five miles and more are let off with a fine of £3.

POLICE TRAPS.

MOTORISTS around Tunbridge Wells should be careful in driving between Mark Cross and Frant, the capturing spot being between Mark Cross and Saxonbury Hill.

THE traps on the Portsmouth road and also the Hook road at Surbiton are in active working order.

AT Staups, near Halifax, five roads converge, and there the police have established a trap for motorists.

INFORMATION comes of a trap at East Grinstead, about a mile this side on the London road. It is reported that this is worked with the aid of a piece of boarding, with which the cars of motorists not stopping are threatened. Should a car not stop this may be thrown across the road.

NEWS of a Scotch police trap comes to us for the first time. This is between Kileraggan and Cove, on the north side of the Clyde. We shall be pleased to receive information of others for the benefit of motorists touring north of the Tweed.

THE police in the Crawley district are taking great interest in motorists, who should be very careful in passing the county boundary, about two miles on the London side of the town. Between that point and nearly a mile beyond the railway crossing several traps have been established.

STOP watches have been dealt out to the Barnet police. Great caution will therefore be necessary in the neighbourhood of Barnet.

MOTORISTS in many country places have been annoyed by the inconsiderate way in which strangers have driven through their streets and lanes. Lincolnshire seems to have suffered lately from this cause, and the county, which was once entirely free from police traps, is no longer innocent of such devices. The late chief constable of the county was a friend of motorists and distinctly forbade the superintendents and inspectors to lay traps, and instructed them to only take action where strong complaints were made. Now, however, in consequence of the rapid driving of one or two strangers in the county, the police have decided that the Lincolnshire roads shall not be employed for record making, and traps are no longer unknown.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, AUGUST 22, 1903.

[No. 233.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

AN "ACT" OF DISCOURAGEMENT.

THE more we think about the Motor-Cars Act which will come into operation in January next, the more we are astonished and amazed at the simplicity, if not the absolute incompetency, of those who have hitherto been regarded as the leading lights of the automobile world. Time after time have we heard it said that no new industry has been so blessed with the interest of men of intellect and good sense as the automobile movement; in fact, some have gone so far as to compare the committee of the A.C.G.B.I. with the Cabinet. Such being the case, motorists generally have been astonished that the deliberations of these wiseacres have resulted in the passing of a Bill which will have the most pernicious effect upon the motor-car industry in the future.

The Automobile Club and the so-called Parliamentary Motor Party may be expected to indulge in mutual recriminations. That this is not improbable was apparent from the resolution of the former body which we published last week, in which the Club "entirely dissents from the views of those who were considered to be acting as the representatives in the House of Commons of that organisation." Unfortunately, however, the original sin must be laid at the doors of the Automobile Club, for it was within the walls of that institution that the question was first brought forward. We declared at the time it was inexpedient, and all along have maintained that such procedure was quite unnecessary and unwise. As a matter of fact, at the moment the question of the numbering proposals and speed limit were brought forward by the Club, police persecution had mostly ceased, except, of course, in one or two counties and some other isolated instances. Had the matter been allowed to right itself, motorists and the police would probably have been on the best of terms ere now, but the inauguration of a long campaign has done much to embitter the position and to render any armistice almost impossible.

Time also was on the side of the motorists. An increasing number of cars were being sold, and it would have been the matter of only a few years before every country gentleman would have owned a car.

It is interesting, too, to know that the class of vehicle sold in recent years was of a more expensive kind than previously. Four-cylindered cars are greatly in demand, demonstrating that the "classes" have realised the charms of motoring. Had the more practical and active motorists on the club committee listened to other users of the road, it would have been better for the present day-motorist, as well as for future owners. Matters of importance might then have been dealt with in a way more in keeping with the feelings of the average man who motors.

That the Act under which Light Locomotives have been run upon public roads has not, after all, worked so hardly upon motorists is proved in the case of a gentleman who, when being fined recently, stated that he had previously driven 80,000 miles on his motor-car, and had never been summoned. This gentleman has always had the latest machines, and is by no means an exception. In fact, it has been frequently stated in evidence, that motorists had previously driven 8,000, 9,000, and 10,000

miles without having been spoken to by the police. There are a large number of owners of cars who spend nearly the whole of their time on their vehicles, and have never experienced any great hardships in this direction. For ourselves, the total fines and costs which we have had to pay do not aggregate twenty guineas, although our mileage has been considerably more than that number of miles in thousands.

It seemed to all appearances as though the prejudice against motorists was breaking down, when a bomb was thrown into the camp by gentlemen whose legislative position should, at least, have given them experience, and have taught them that in these matters the man who says least often gets his own way when those who precipitate action frequently fail. As soon as the abolition of the speed limit was mooted, the cry was raised that "these motorists want to go faster." That "they were not satisfied with the speeds at which they then traversed the roads," and the public became unnecessarily alarmed. A fit of nerves seemed to have affected rural councils, and the police were harassed into action. This was the direct result of an agitation which the Club, instead of fostering, should have discountenanced.

The Motor-Cars Act which will shortly come into operation, is quite unique so far as the Statute book of this country is concerned. Unfortunately, its application will be at the mercy of prejudiced justices who have hitherto lost few opportunities of showing their opposition to newer forms of vehicular traffic.

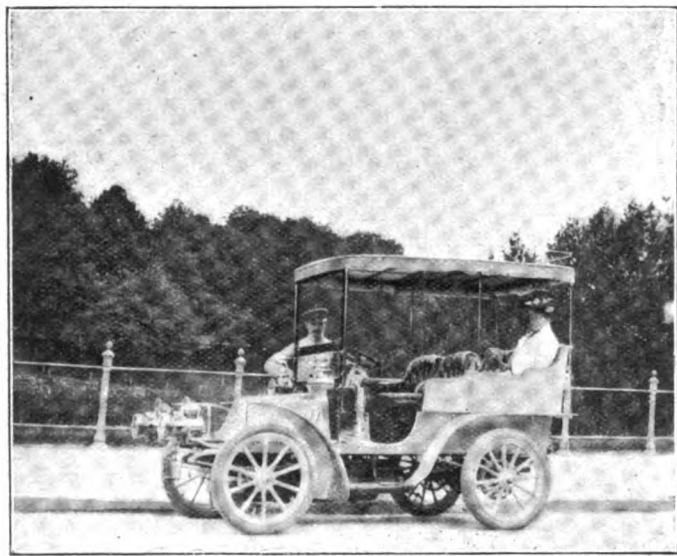
With regard to the punishments proposed by Mr. Long's measure, with the introduction of which the Club's action had so much to do, we can only say that they appear to have been admirably framed to either kill a growing British industry or create a new convict class. Safeguards are said to have been introduced, but they will prove in practice generally inadequate to protect motorists from persecution, and will be found practically worthless. True there is a right of appeal, should a driver be fined 20s. or more, and for that small mercy we are correspondingly thankful. But this even is a very slight sort of safeguard, and will be of little consolation to the motorist who drives carefully and with consideration to other users of the road, and then finds the calculations of the police show he has been going a few yards more than twenty miles an hour. For offences not specifically mentioned imprisonment can also be inflicted—whether there is a right of appeal or not, experience will show. Should a few members of the Parliamentary Motor Party fall victims to this particular clause, it will afford them opportunity for reflection on their own weakness during the last few days of the recent Parliamentary Session.

We would have been content with the registration and numbering—irksome and undignified though they be—had the speed limit been abolished, but, as we have already pointed out, the arbitrary fixing of speeds of twenty and ten miles an hour will prove far more dangerous to the public than if motorists were allowed the ordinary privileges of men exercising their common sense. Of course, the enactment of the lower limit within certain populous areas may have been, and probably is, a wise precaution, but had the Act enforced that such districts should have been distinguished with notice boards, calling upon all motorists to proceed cautiously until passing the next, it would have been sufficient. But for the speed limit of twenty miles nothing at all can be said. It is arbitrary, it will not ease the police

of their present unhappy position as acting as trappers to the public, and will give rise to litigation, over which only the lawyers can rejoice.

There is one matter which was put into the Bill at the last moment, however, which should be seriously considered, and, although the Act is now unfortunately part of the law of the land, we trust that the provincial clubs and individual motorists throughout the country will make it clear to the Local Government Board that any strict rendering of the new Clause will absolutely close the larger portion of England to tourists. This reads as follows:—"The Local Government Board may, by regulations made under Section 6 of the principal Act, prohibit or restrict the driving of any motor-cars, or of any special kind of motor-cars, on any specified highway, or part of a highway, which does not exceed 16 feet in width, or on which ordinary motor-car traffic would, in their opinion, be especially dangerous."

This practically gives, as we suggested last week, to an official authority power to prohibit motor vehicles from entering many of the touring counties of the country, as well as entering or leaving hundreds of the smaller towns. Apparently, if a couple of local farmers complain that a passing motor-car has caused dust to be deposited on their cabbages, or if a nervous J.P., full of wrath against innovations, asserts that he cannot cross



Mr. J. M. Sneden, Hon. President of the Automobile Club of Algiers, and his 12-h.p. Georges Richard Car.

to the other side of the lane in safety, the Local Government Board will have power to close that roadway altogether to motor traffic. If this sort of legislation is to be tolerated, there is no reason why the roads should not be divided up into playgrounds for those who live in proximity; and travel, except by railway or on other tracks, absolutely prohibited. We are surprised that Mr. Long should have introduced such a far-reaching clause without giving opportunity for proper discussion; and we are amazed that the Parliamentary Motor Party, reputed to have been over a hundred strong, should have allowed it to be added without a protest. They were keen enough in moving puerile amendments until properly rebuked by the President of the Local Government Board.

This new clause was added at the last moment, and was inserted after the Bill had been through the committee stages. Then it was taken to the House of Lords and received the Royal assent within twenty-four hours. We can only compare this unwonted celerity to the speed of a car capable of winning such an event as the Gordon Bennett race.

After all it is really a pity that the so-called Motor Party was formed, for we believe that the sense of fairness of the

average M.P. would have prevented many of the absurdities of the Bill being passed into law. Unfortunately, however, there were those in the House who claimed to speak on behalf of the whole automobile body, and they, with their constant and wearying suggestions of compromise, were accepted by the bulk of the members as the spokesmen of motorists generally. "Blessed is he who knows no man that calls himself friend" might be said of motorists as of others. The suggestions for compromise so frequently made by our leader (sic) would certainly have done no good, and it would have been far better if the whole of the onus of the legislation had been thrown upon the Government, instead of motorists having been made a party to the Motor-Cars Bill. It is all very well for the Club and Mr. Scott Montagu to disassociate themselves now from authorship of the Bill, but, as we have said, their agitation had much to do with its initiation, and it is somewhat unfatherly on their part that they should now seek to disown their offspring.

In his own journal Mr. Montagu assumes that the dust question is one for motorists to solve. Really, we do not see why they should be regarded as the cure-alls for local neglect. The dust question is one for the road surveyors and the local authorities to consider and solve, for the dust is lying about on the roadways and is often disturbed by the wind without traffic of any sort. Naturally, when motor and other vehicles travel over it at a rapid rate of speed, it assumes greater volume than at other times, but that motorists should be made responsible for this seems as inconsistent as are many other utterances made by our Parliamentary leader. According to this gentleman, there are 150,000 persons connected with the motor industry, probably an exaggeration, which we must forgive, though like many other of his exaggerations, we cannot wholly forget it. But to suggest as some have done that these should not vote for any candidate in any election, unless he promises to vote for the repeal the Act, is absurd. This is advice hardly calculated to add to the dignity of the position, or to do any good, for it must not be forgotten that motorists are in a great minority, and if the majority of the public decided to vote the other way, the precious Act of 1903 would remain on the Statute book for a good many years to come.

In our opinion the proper course now is for motorists to become educators of public opinion in this matter. Motor-cars should be lent to candidates of all shades of opinion in municipal, county, and Parliamentary elections. By thus assisting their campaigns, public men will be shown how safe are motor-cars, and will probably become converts to automobilism. Thus we shall ultimately have in the House of Commons itself a sufficient number of practical persons who may be expected to legislate, not only with full regard to the safety of the public, but also with some consideration for the welfare of a great industry. Although we feel that much of the blame for the present unsatisfactory state of affairs must be apportioned to Mr. Scott Montagu, old acquaintanceship leads us to restrain our feelings. At the same time, we cannot help expressing our regret that he should have failed to carry out the views of motorists in the matter, especially as he himself is interested in the industry. The resolution that the Club committee have already adopted should be sufficient to teach him wisdom in the future. There is no doubt that a great and growing industry has been throttled, and how long it will remain thus hampered depends upon the action of motorists themselves during the next few months. We hope, therefore, that they will adopt no such one-sided advice as to attempt to make the repeal of the Motor-Cars Act a test question, but rather show a better spirit in seeking to teach everyone in a position of influence the safety and absolute control associated with the modern motor-car.

A PROPOSAL is already on foot to hold a special dinner in the autumn and to present illuminated addresses to Major Jameson, M.P., and Mr. Dalziel, M.P., for their strenuous efforts on behalf of motorists. "When all others failed they alone proved staunch and true."

COMMENTS.

Motors and Railways in Ireland.

SEVERAL suggestions have been made with regard to profitable routes for the Iveagh-Pirrie motor transit scheme in Ireland. Mr. R. Galbraith suggests a route from Birr via Portumna, Killimore, Loughrea, Kilchreest, Ardahan, Kinvarra, New Quay to Ballyvaughan, of about 65 statute miles. An alternative route from Birr via Banagher, Eyrecourt, Lawrentown, Kiltormer, Kilreeckle, Loughrea, here cuts in on the other route; the distance, Birr to Ballyvaughan via Banagher, is the same. Both routes would open up large districts of County Galway at present unconnected by public conveyance with existing railways. The routes suggested would connect these large districts with outlets at Birr, Banagher, Loughrea, and Ardahan, and bring the midlands of Ireland into daily touch with the west. At present the journey by rail from Birr to Athenry, via Limerick, a distance of about 124 miles, occupies nine hours and ten minutes, the actual distance from point to point being about fifty miles. Such a service would enable travellers to make the journey from the Midlands to Galway, Sligo, Mayo, etc., in the day easily, at present an almost impossible task. Thus the motor-car might be expected to play an important part in the railway development of Ireland.

And in England.

NOT only is there a possibility of motor competition with railways in Ireland, but the Earl of Onslow has been advising the farmers and fruit growers of Kent to stimulate the railway companies to provide better facilities for the carriage of produce by the use of the motor-car. Already this has proved useful in many ways, and we would urge the fruit growers of Kent to give heed to the advice of the Minister for Agriculture.

Railway Enterprise.

THERE is evidently greatly increased interest among railway managers in the development of motor-car passenger traffic. The few successful services of the kind which have been privately organised have convinced them that if such lines are not lucrative to the extent of cent. per cent. they are, at least, profitable as feeders to main lines of traffic. Here, probably, is one of the most useful advantages of the automobile so far as the railways of the country are concerned.

The Great Western's Venture.

THE Great Western Railway has decided on an experiment in this direction, and the place selected for the inauguration of the venture is the line between Stonehouse and Chalford, in the Stroud Valley, a distance of about seven miles. There motor-cars will be run upon the railways, and it has been decided to try the further experiment of running motor vehicles upon high roads. It is the intention to run these cars at convenient times in connection with the company's trains. Five motor vehicles have been ordered by the company. Two of these have already been delivered, and a service was commenced on Monday between Helston and the Lizard, in Cornwall. The other vehicles will be placed upon the railway during the autumn.

Railway Companies and Motor-Cars.

SPEAKING at the meeting of the Great Western Railway Company last week, Earl Cawdor stated that the company had suffered somewhat from the tram-cars, and, perhaps, also from motor-cars in private hands, and they were about to try two things which they thought worth trying. One was a motor-car service, consisting of a combined car carrying fifty-two

passengers, running on the existing line, stopping at stations which already existed, and also, by the approval of the Board of Trade, at level crossings and roads coming up to the line, thus making a quick local service. The motor-car was to be worked by steam, and it was hoped to be running in October next. The motor-cars on the roads would not only act as feeders to the railway, but would also give an indication of the requirements for light railways. They are covered cars supplied by the Milnes-Daimler Company.

Doctors and the Act.

SIR WALTER FOSTER has made a good point for motorists in saying that among the other objections which he has to a speed limit for motor-cars is that it will affect medical men who are summoned to come in all haste to cases of very serious illness. Whatever the emergency, and however skilful a motorist the doctor may be or may have on the car, he will be prevented from using his resources to the full that safety will permit in an emergency. Sir Walter's main objection to the speed limit is that it will, in his opinion, tend to driving at this rate of speed ordinarily, as it will be very difficult to get a conviction when a driver can plead he was well within the limit. Under the new legislation doctors in hurrying to the bedsides of patients will be incurring heavy penalties—although engaged on errands of life saving.

Care in the Trials.

NOW that the Trial Season is upon us, we would impress upon all responsible in any way for the arrangements the necessity of taking the utmost care in giving publicity to the results. They should be communicated simultaneously to the Press, no preference being shown to organs styled official or to journals unconnected with automobilism. In issuing results before they have been officially confirmed the greatest reserve should be maintained, as hasty publication may seriously injure competing firms. The public naturally pay some heed to the decisions of the judges in connection with Trials, and unless these are given with scrupulous exactitude, injustice may easily be done. Further, when corrections in official timing have to be made they should be issued to all the automobile Press and not merely confined to the competitor directly concerned. To have to go to a Scotch paper for corrections or errors made by the British Club in connection with Irish races is a roundabout way of learning results that is worthy of the Circumlocution Office.

The Proposed Irish Race.

IF Mr. Macredy's suggestion for an alcohol motor race in Ireland next year is likely to be acceptable to motorists, some official body will have to take early notice of the matter. The Act of Parliament under which the Gordon Bennett contest was legalised expires at the end of the present year, and will have to be renewed if the race is to be permitted. Otherwise there is little hope of the matter being allowed reasonable discussion in the Commons next year. The subject of motor road racing is so hemmed in with prejudices just now that even a promise of the conditions prevailing in the Gordon Bennett hardly satisfy some people.

The L.C.C. and Motorists.

AT the West London Police Court the other day, a prosecution was instituted against a motorist for "having emitted smoke," etc., in Kensington High Street, and the London County Council specially instructed a solicitor to prosecute. The case was called for two o'clock, but His Highness the Police Constable did not appear till past four o'clock, and then escaped without a reprimand. Twice the constable swore the defendant was the driver of the petrol car emitting smoke, but then, at the

bidding of the magistrate, had to confess he had made a mistake. In the end the case was dismissed and the defendant was mulcted in solicitor's (Mr. Staplee Firth) costs and the loss of his own time.

Police Rivalry.

SERGEANT JARRETT has a rival who rejoices in the name of Jannaway and delights in catching motorists on the Bath Road at Wargrave. Some results of his enterprise were apparent at the Wokingham Court the other day when he gave evidence against eight or nine motorists and secured convictions every time. Sergeants Jannaway and Jarrett are attaining unenviable fame in connection with motor-car cases; when the motorists commence action against drowsy carters, speedy tram-car drivers, and other roadway inconveniences, they may have to turn their attention to more monotonous duties.

1904 Mercedes Cars.

REGARDING the recent fire at Cannstatt it may be of interest to our readers to know that cars are still being "turned" out weekly, thanks to the assistance afforded by other engineering firms. As to the 1904 models the question of the details of these has been settled, and we understand that



A Roadside Discussion.

they will differ very little from the details of the "famous forties" of 1902, the clutch, gear, etc., being exactly the same.

At Gainsborough.

THE motor problem was to the front at the meeting of the Gainsborough Agricultural Society last week, when one of the speakers referred to "that common enemy of mankind—the motor-car," and thought that, in the interests of motorists themselves, it was desirable that there should be some regulation of speed. Sir Hickman Bacon, Bart., himself an enthusiastic motorist, also spoke of motoring, and commended to notice the successful experiments made in France and Germany with a fuel of alcohol, extracted from potatoes and other agricultural products, instead of the petroleum spirit, imported from America, used in this country. He did not see why a change should not be made in England, so that the fuel for the cars might be almost entirely manufactured at home. If magistrates

would make themselves acquainted with the subject upon which they pretended to adjudicate, he did not think there would be any more trouble with motor-cars than with bicycles. He believed that in twenty years there would be a great many more motor-cars on the road than horses.

The Speed of Tram-cars.

MR. MOFFATT FORD appeared at the West London Police Court on Tuesday to support a summons charging a London United Electric tramcar driver with having driven at more than 10 miles an hour. He explained that his object was to demonstrate how a tramcar could travel at 17 miles an hour, while a motor-car was forbidden by the new Act to go at more than 10 miles an hour in towns and populated districts. The case was adjourned to enable the magistrate to look up the authorities on Board of Trade powers. There is no doubt that the time is coming when motorists will have to carry the war into the camp of the enemy.

Comparative Safety.

ON this point of the speed of tram-cars Mr. A. J. Balfour has made an important observation to a Dundee correspondent. "The new Act," says the Premier, "does not authorise 20 miles an hour where that speed endangers the public safety, about which you are rightly solicitous. I think you probably underrate (if I may say so) the control which a driver of a motor-car can exercise over his vehicle. A motor-car going 20 miles an hour is far safer than a heavier tram going, as they habitually do, 16 or 17 miles an hour, is far more in hand, and involves far less risks." And yet tram cars are constantly allowed to run at the higher speed.

'Ware of Warrants.

UCKFIELD has an unenviable reputation among motorists, and the chairman of its magisterial bench, Captain Noble, hardly lets an opportunity pass without letting his tongue wag freely about automobiles. The other day the Uckfield magistrates announced their determination to issue warrants in future for the arrest of motorists who did not appear when summoned for exceeding the speed limit, and Captain Noble, the chairman, said they were not to be defied by motor-car people any more than by the commonest tramps.

Hurrah for Havre.

IN view of the uncertainty of the administration of the new Act and the genuine fear of its vindictive application, many leading motorists are already discussing the advisability of taking a club-house and garage at Havre with a view of keeping their cars there and enjoying the pleasures of week-end motoring. These men are neither "scorchers" nor "road hogs," but English gentlemen who only desire to take their pleasures in peace, and do not care to risk, perhaps on the evidence of a policeman and road-breaker, their liberty or suffer the indignity of being fined without cause.

Supporting the Clubs.

DURING the next few months motorists will have to be very careful as to their procedure, so that application may not be made for the enforcement of the ten-mile limit in other than the most dangerous places, and the formalities connected with registration and the issue of licenses may be made as light as possible. Throughout the country are many clubs doing good service to motorists, and these should be supported by local automobilists. In thus identifying themselves officially with the movement its influence can be materially strengthened.

**Tit
for
Tat.**

IN view of the introduction of the new Motor Cars Act, which comes into force on Friday, the 1st of January, 1904, a novel state of affairs is likely to be created. Motorists, it is understood, intend themselves to see that the law is strictly carried out, and not only do they propose to obey the law—bad as it is—but they also think of acting as policemen, and in the interests of the general community propose insisting upon the inhabitants of Great Britain fulfilling to the letter the various other statutes now practically remaining dead letters on the books. There is ample scope for motorists' energies, and while Robert reclines 'neath shady trees or basks in sunny glades, puffing dreamily at his pipe, the busy motorist will be carrying out his duties, not necessarily with the hope of fee or reward, but solely from the desire of proving to his fellow citizens that he is no whit worse than they are.

Police Sport.

A NOVEL competition was introduced at the annual sports of the Oxford City Police—a "motor speed-judging competition." A motor-bicycle was driven once around the track and the policemen stood at intervals of about twenty yards. Each, without a watch, was expected to estimate the speed at which the motor was travelling. The winner was P.S. Fumage, who under-estimated the actual speed by one mile per hour, guessing 23 miles instead of the 24 registered by the time-keepers.

Early Action.

THE Hampshire County Council is the first county authority to consider its relation to the new Act, the Earl of Northbrook moving the suspension of the standing orders to allow the discussion to take place. He suggested that a circular should be addressed to all the district councils, requesting them to recommend the various roads upon which they thought the ten mile per hour limit of speed should be applied within their districts; also that the county boroughs of Portsmouth, Southampton, and Bournemouth should be written to and asked whether, in their opinion, any portion of the county ought to be included in the limited area which they proposed. It was possible, for instance, that on the outskirts of Bournemouth there might be certain districts belonging to the county which ought to be included in the limited area. When those returns were received, he thought they should be considered by a committee composed of the following:—Messrs. W. W. Portal, Simonds, Deverell, Gathorne Wood, Colonel Grimston, the Hon. J. Scott Montagu, M.P., and J. Bonham Carter. Besides this, the Standing Joint Committee should be asked to request the Chief Constable to attend the meetings of the special committee, and to give to the District Councils any information and assistance they might require. The special committee might also communicate with the Local Government Board semi-officially, and ascertain the views of the department. Evidently the councils generally will not delay their action in the matter.

**Reliability
Trials.**

THE Automobile Club's reliability trials for motor-cars have attracted a record entry of 130 cars. They will be held this year from September 18th to the 26th inclusive. It will be the observer's duty to note every stoppage for repairs or adjustments, and even for filling the petrol tanks, so that an absolutely reliable report will be obtained as to the performance of the cars over a thousand miles of road. The routes of the trials will extend from the Crystal Palace to various seaside places and back on the same day, so that a large number of people will have an opportunity of witnessing the performance of the cars during the trials. The places to be visited include

Margate, Folkestone, Eastbourne, Bexhill, Brighton, Worthing, Southsea, and Winchester. The trials about to be held will be followed by extensive tests for light delivery motor-vans, which will take place early in next year. The principal aims of the forthcoming trials are threefold: to encourage the makers, to indicate the most desirable types of car, and to afford to the purchasing public reliable and independent reports as to the capabilities of motor vehicles.

Garage Scandals.

FROM time to time we have received particulars of instances where proprietors and managers of garages have abused their trust by using cars left in their charge. A glaring state of affairs prevailing at a West End garage has been brought to light in an action at the Westminster County Court by a Mr. Williams. So far it has been difficult to obtain authentic particulars, sufficiently corroborated for publication, but the facts as narrated to us are that the plaintiff claimed damages of the manager and his staff for having unduly used his car whilst it was stored upon the premises. Counsel were employed on both sides, the plaintiff receiving, after a scathing summing up by the judge, a verdict for £20 and costs.



Friends at Last.

The Irish Demand.

COMING so soon after the automobile tour, the King and Queen's trips by motor-car in Ireland must have wonderfully impressed the gentry of the country with the possibilities of the new vehicle. North, west, and south, the automobile has proved its capabilities, travelling rough roads, climbing the stiffest hills, and altogether behaving in a way that should render easier the paths of the motor agents in Ireland. The motor-cycle has "caught on" there, and there is no doubt that as the prosperity of the country increases, the motor-car industry will share in the result. Those who have hitherto despised the Irish demand should modify their views without delay.

**In
Sunny
Southsea.**

SOUTHSEA has several times been made familiar with motor-cars in connection with official events, and, although the "season" has been an uncertain one there up to the present, automobiles are regarded as ordinary and commonplace in that popular resort. Several local firms have catered with enterprise for local wants and the requirements of travellers through the district, and the locality is about as well provided with suppliers of petrol and repairers as any in the South of England. Of late the place has been growing in popularity with motorists especially for week-end trips, and dozens may be seen

spinning along the delightful sea front every Sunday morning. The rural "bobby" has wakened up to this, and to the opportunities it gives him, and now traps are laid on every side for the *chauffeur* approaching Portsmouth. That some county magistrates, in many cases, are prejudiced against motorists is evident from a conversation which took place at the Fareham police court not long ago. One of the motorists bagged told the Bench that he had never been in the district before. "I hope you won't come here again," was the presiding magistrate's discourteous and quite uncalled, for reply.

Brakes.

THE distressing calamity, terminating fatally, which recently occurred on the Sun Rising Hill should be a warning to all automobilists as to how a very dangerous hill should be descended. The brakes on a car may be excellent, and, without doubt, those fitted to the majority of motor-vehicles are, but, notwithstanding this, one can never tell when anything may happen to them, and if an accident of this nature should occur, the hill may be too steep and winding (as in the case of Sun Rising Hill) for the car to be stopped by other means. Undoubtedly the best and safest method of descending a really dangerous hill is to start with the slow speed engaged, and the engine switched off; this forms a most efficient brake, and the hand-brake, if it does not withdraw the clutch, can also be used as an additional brake. If only the really bad descents in this country were dealt with in this manner, we should hear very little of cars "getting out of control" downhill.

Road Maps.

MESSRS. GALL AND INGLIS are issuing graded road maps of Scotland, and from the specimen we have received, viz., Aberdeen and Deeside, they appear to be admirably designed to meet the requirements of the motorist. Steep and dangerous hills are clearly indicated as well as good and bad roads. The same firm are also publishing "strip" road maps on a scale of half an inch to the mile dealing with some much-frequented districts, such as Manchester, Carlisle, Liverpool, etc. For the benefit of southern motorists, Mr. A. C. Armstrong and Mr. H. R. G. Inglis have compiled and Messrs. Gall and Inglis have published a new "contour" road book, "Short Spins Round London, south of the Thames." This is so well done that we await with considerable pleasurable anticipation the appearance of the volume dealing with the district north of London's great river.

Petrol Motors.

ONE of the interesting items in connection with the recent International Automobile Congress in Paris was a report on the present position of the petrol motor by M. Gaillardet, who gave some very interesting data concerning the dimensions and construction of the various parts. He insisted upon the necessity of giving more attention to the flywheel, which, he said, should be looked upon as an accumulator of energy capable of giving up a certain part of its energy to overcome inertia when starting a car. In other words, more power may be needed to start the car than that developed by the motor itself, and thus during, say, a quarter of a second the energy stored up in the flywheel is added to the power of the motor to move the vehicle. For this reason the weight of the flywheel should be calculated according to the inertia to be overcome, that is to say, the weight of the car and the speed at which it is started. M. Gaillardet is in favour of high compression on account of the higher efficiency it gives to the engine, but in practice it is impossible to exceed a certain limit, because very high compression would mean great difficulty in starting the motor and in regulating the admission, while with small flywheels the force of the shock would cause the motor to run irregularly, and it would be nearly impossible to avoid leakages at the valves and joints. For these reasons the compression ought not to be much more than five kilos per square centimetre. He also concludes that the motor gives highest efficiency

with a comparatively long piston stroke and high lineal speed, and in this respect he is somewhat at variance with current practice, which gives a preference to short stroke motors.

Oiling Indian Roads.

IN Bombay the dust question has become a matter of municipal politics, and the City Engineer has been making experiments with a view to a mitigation of its objectionable features. A portion of the Esplanade Road was treated with crude petroleum, three dressings being given, the first on the 26th of November last, when about 5½ tons or 1,298 gallons of the oil was sprinkled; the second on the 21st December last, when about 3½ tons or 737 gallons was used; and the third on the 22nd of February last, when 1½ tons or 413 gallons was used. The quantity of oil was diminished at each subsequent dressing. The oil was laid by means of the ordinary watering carts and cans, and then equally spread over the road surface by means of brooms and brushes. On the first application the oil soaked quickly into the road surface, rendering it smooth and firm, but it was slightly slippery where, owing to unevenness of the surface, there was a stagnation of oil in the hollows. It also gave off a strong smell for a day or two in the beginning, but it gradually disappeared. The application of oil to the road surface not only lays down the dust and renders the surface smooth, but prevents the road from being cut up.

MR. J. E. HUTTON has just received delivery of the first 18-h.p. Mercedes car which has been turned out of the Cannstatt works since the fire.

THE Selection Trials for the British representatives in the Gordon Bennett race of 1904 will be held during the latter part of April next, entries to be made, accompanied with a deposit of £250, by December 31st of the present year.

MR. W. J. BULL, M.P., who, we believe, is one of the private secretaries to Mr. Walter Long, has written a letter in defence of the way the motorists' case was presented in the House of Commons. Unfortunately its effect is marred by the needless introduction of a spirit of political partisanship.

COLONEL SIR H. MONTAGUE HOZIER has yet to be converted to the automobile. Presiding at the annual meeting of the Cab-drivers' Benevolent Association the other day, he said that cabmen had to resist the invasion of the motor-car. "It is rising up amongst us, but I dislike it, no matter whether I am walking or driving."

MESSRS. H. E. HALL AND Co., of Tonbridge, have sent us two photographs showing part of the new works and garage they have recently erected. In addition to being agents for Darracq cars, Messrs. Hall have every facility for repairs to every make of car, and stock accessories of all kinds, as well as Michelin and other tyres.

THE London Express Motor Service, Limited, is about to put a service of motor hansoms on the streets of London. The cabs will not be let to drivers at a fixed sum per day, as is usual with horse-drawn cabs, but the driver will receive a minimum weekly wage, with a liberal percentage upon the balance taken per week over a certain sum.

MR. CHARLES GLIDDEN, who is making a trip to the Arctic circle in a Napier car, cabled from Gefle, Sweden, on the 12th inst., that he had reached the latitude of 60 deg., and hoped to cross the circle within eight days. A further telegram was received on the 17th inst. from North of Niska, Lapland, stating that he had succeeded in crossing the Arctic circle, at Haparanda, on Sunday last.

MR. JAMES BAGGS, of Southsea, had a serious accident while motoring on Saturday afternoon. When descending West Marden Hill, the most dangerous hill in the county of Hampshire, neither of the two brakes had any effect in checking the speed of the car, and, in order to prevent a worse fate, the driver had to steer it into the ditch. The car was rendered a complete wreck, and the passengers were severely shaken.

THE CHURCH AND THE CAR.

MANIFOLD are the utilities of the automobile, and in no department of public life have they been so conspicuous as in recent electioneering contests. In fact, some have declared that the increase in the number of the electorate who have polled has been due to the better facilities provided candidates and voters by the motor-car. As compared with the ordinary horse-drawn vehicle its advantages are easily apparent.

The uses of the motor-car to politicians are equally available to the clergyman with a large parish. The country clergy often find their enthusiasm cramped and their activities restricted by the absence of travelling facilities in rural districts. Parishioners live miles from railway stations, trains only proceed at regular and often infrequent intervals, and to reach distances comparatively near long journeys have to be undertaken, owing to the cross-country direction of railroads. All these factors contribute to render difficult the pastoral visitation which is the strength of the religious systems of this and other countries.

When Dr. Jacob recently removed from the Newcastle diocese to that of St. Albans, a motor-car was suggested as the most valuable form the farewell presentation could take, and there is no doubt the idea was but anticipating what will be ultimately regarded as part of the ordinary equipage of the Bishops. A few months ago we reported how an ecclesiastical leader in the Midlands would have missed some important cathedral services but for the timely service of a motor-car. Military chaplains have used the tonneau of an automobile as an improvised pulpit, and the appearance of ecclesiastics on motor-cars is nowadays regarded with less public curiosity than was the case a few years ago.

The accompanying photograph is, however, probably unique. It was taken by His Grace the Archbishop of Dublin (Dr. Walsh) after his memorable ride over a portion of the Gordon Bennett course. We had reached Cookstown, near the little village where the American team made their headquarters, and were about to enjoy the hospitality of the Rev. Fr. Warren, who is to be observed seated to the right of the Rev. Dennis Pettit, chaplain to his Grace, who is seen standing in the tonneau. The Archbishop and his chaplain can both bear their testimony to the value that the motor-car would prove in visiting parishes otherwise inaccessible, and thus increasing their opportunities of service. A few days ago His Grace was in the neighbourhood blessing a new bell in Ballymount Chapel and gave some reminiscences of earlier visits. "My first visit to Ballymount and its neighbourhood," he said, "dates back to close upon forty years ago. I was then a student in College, and was brought here by the Archbishop of that time, your illustrious fellow-parishioner, Cardinal Cullen. I recollect even the most trivial incidents of the visit as if they occurred but yesterday. Of one of them, trivial enough in itself, I was forcibly reminded by contrast when I last happened to pass this way on this day four

weeks. Coming from the train at Newbridge, we travelled by that very convenient and not over-pretentious vehicle, an outside car. As I have said to you, I was forcibly reminded of this by contrast when I happened to pass along the road outside four weeks ago. It was on the eve of that exciting contest of which this part of Ireland was recently the scene, and I found myself that day sweeping past Ballymount, along the same road, upon a very different kind of vehicle, and, I must admit, at a wholly different rate of speed." Fortunately for His Grace, the Irish Constabulary are good sportsmen, and were delighted to see him rush along at the rate of over fifty miles an hour. There was no speed limit in Ireland during the days of the automobile tour, and the Archbishop had a practical demonstration, not only of the speed of the modern motor-car but also of the control which the driver can have over his vehicle.

While briefly drawing attention to this matter, there is another point brought forward by the Rev. J. Gregory Forbes, rector of Dickleburgh (Norfolk), which motorists should consider.

Realising the advantage that motorists take of Sunday for the pursuance of their pastime, he has written on the "unnecessary disturbance of Divine worship on Sundays," and asks that they should slow down while passing near to churches or chapels during hours of service, thus obviating the necessity for vigorously blowing the horn and interrupting the flow of pulpit thought while distracting the attention of the congregation.

This is a simple matter in which motorists may well show their consideration for others. Unfortunately in this, as in other ways, the inconsiderateness of a few people has brought discredit on the whole movement, and there are clergymen inclined to regard those who motor as driving "engines of Satan" and having no regard for others. This

is not true of the great majority, who recognise that they share the roads equally with horse-drivers and pedestrians, and do not wish to do anything likely to cause annoyance and irritation to other people.

A STEAM motor-van for the conveyance of meat from the slaughter-house at Bandora to the Crawford Market, in Bombay, has lately been completed. The waggon has a carrying capacity of three and a half tons, and can travel at the rate of five miles an hour. Only the machinery was obtained from England, the woodwork having been made in the local municipal workshops. The van measures 12 feet by 5 feet, the inside being fitted up with hooks on which to hang the meat, the sides being perforated. The suggestion to replace the old noisy meat-carts by the new vans was first made by Khan Bahadur M. C. Murzban, the executive engineer, who, in company with Mr. Hewett, assistant engineer, mechanical branch, made a trial trip in the car. The car was started from the Crawford Market, Bombay, via the General Post Office, to Chowpati, and thence back to the Market. The trip is said to have been exceedingly satisfactory, and it is hoped that ere long the bullock-carts will be entirely superseded by automobile vans.

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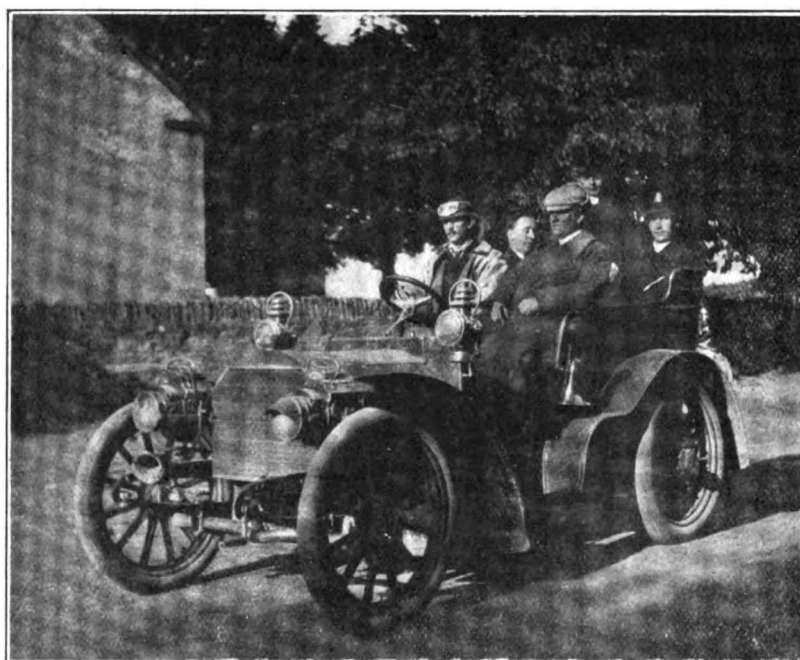


Photo by)

On an Irish Highway.

(His Grace the Archbishop of Dublin.)



CONTINENTAL NOTES.

BY "AUTOMAN."

THE summer weather this year has still to come to the Continent. From all directions the reports bring in dismal accounts of continued rain and wind. The bad weather has even kept some motorists in Paris, and really a most enjoyable holiday may be passed in trips around with Paris as a centre. As many Englishmen spend some of their summer in the French capital, it may be interesting to them to read of trips they may make during a short stay, and I propose, therefore, in the automobile "dog days," when interesting news gives way to "big gooseberry stories," to give a series of pleasant excursions which they may make from Paris.

THE forest of Fontainebleau is sixty-eight kilometres (about 42 miles) from Notre Dame in Paris. It is therefore easy to make the journey there and back in the day in almost any modern automobile, with a few hours to spare to visit the Palace and the Forest. Starting from the Place de la Concorde, cross the river Seine at the Pont de la Concorde, which faces the Chamber of Deputies, and turn to the left into the Boulevard Saint Germain, the most aristocratic quarter of Paris. Follow along until you come to the Boulevard St. Michel and turn into it to the right and continue along uphill until you reach the Boulevard de Port Royal, into which turn to the left and keep on until you come to the Avenue des Gobelins, into which you turn to the right, climbing a steep hill which leads into the Place de l'Italie, which is a large round open space with streets leading into it in all directions. Choose the Avenue de Choisy and keep right on, taking care to take the right hand road where you come to the forked roads (the left hand road is the Avenue d'Ivry, and would lead you to Panhard and Levassor's works). Follow the Avenue de Choisy to the Porte de Choisy, where you declare the quantity of petrol to the Octroi, and then keep right on the Avenue for some miles until you reach a round place with a statue of Rouget de Lisle, the composer of the "Marseillaise," the French national anthem. Opposite the statue turn to the left down the Rue du Pont and cross a level crossing over the railway and a bridge over the river Seine, and a few yards over the bridge turn to the right, down a little road called the Avenue de Villeneuve Saint Georges.

You have now left Choisy behind you, and you will not have much more paved road except in crossing the little town of Villeneuve Saint Georges. The road, however, is not very good, and there are two narrow bridges over branches of the river and a dirty little agglomeration of houses with narrow footpaths and children always sporting in the gutter. Just before reaching Villeneuve the road begins a steep climb, and, with a very awkward bend to the left, crosses over the railway by a bridge. Once on the other side turn sharply to the right and down a steep incline into a badly paved street in Villeneuve St. Georges. Pass right through the little town in the main street, and as you are leaving it you will come to a fork with two roads, one across the railway lines on the level and the other underneath the lines under a quaint little bridge; take the left hand road under the railway bridge and keep right on to Melun. You can "let her out" without any fear of "cannivaux" or "contraventions." Before you reach Melun you have a stretch of nearly twenty miles, through lovely country, passing through the Forest of Senart. Arriving at Melun, if you wish to stop and lunch you can do so comfortably at the Grand Monarch, where you will find petrol and oil; it is in the main street. Should you not stop at Melun you leave it on the right, and an old church nearly opposite it on the left, and keep along a short narrow street until you reach a cross street with tram lines, which you take to the right. It leads you to a bridge across the Seine, and after the bridge you keep on through the town and under a railway bridge. Just at the end of the house you come to a fork, at which you take the left

hand road and spin away to your heart's content for about seven miles or so until you plunge into the Forest of Fontainebleau and come to a little round place with a stone table in the middle of it called the "Table du Roy." Take the second turning on your right, which is a little road, rather indifferent, but which leads you into the main road some three miles further on; here turn to your left and in a very short time you are in the town of Fontainebleau, where you have the choice of hotels between the Aigle Noir and the Hotel de France et d'Angleterre. No tickets are required to visit the palace, and it will take you a couple of hours to see over it thoroughly. To visit the forest you will find plans at the hotel, and you can take your choice of routes, but you should fit out your excursion in the forest so as to finish up in the direction of Melun, and do not be persuaded to return to Paris any other way than by Melun or you will find nothing but paved roads. Should you not be sure of your way back, ask the way to Melun and not to Paris, for if you ask for Paris you will be directed to the main road, which is bad.

THE rules relating to the trials of town and suburban public service vehicles, to be held by the A.C.F. from October 5th to 10th next in Paris, have just been issued. The trials are international and are open to:—(1) Town service vehicles; and (2) Suburban service vehicles, driven by any mechanical propelling power. The awards will be based upon, (1) the net cost of running the vehicles, under the usual conditions pertaining to these types of conveyances, over a course of 60 kiloms. selected at hazard; (2) the comfort and ease of control; (3) the frequency of replenishment required, the importance of, and the ease of effecting, repairs; and (4) the cost price. Section I.—Town Service Vehicles—comprises six categories, viz.:—1.—Cabs for two or four passengers without luggage, open or closed or convertible at will. 2.—Cabs for four persons with luggage accommodation (30 kilogs. per passenger). 3.—Cabs for six persons with luggage accommodation (30 kilogs. per passenger). 4.—Delivery vans carrying a useful load from 500 to 750 kilogs., and providing a seat for a conductor. 5.—Delivery vans carrying a useful load from 300 to 500 kilogs., and providing a seat for a conductor. 6.—Tricycles carrying a useful load of not less than 100 kilogs.

SECTION II., Suburban Service Vehicles, comprises three classes, viz.:—1.—Ten-seated omnibuses with luggage accommodation (30 kilogs. per passenger). 2.—Delivery vans carrying not less than 750 kilogs., useful load, and providing a seat for a conductor. 3.—Wagons carrying not less than one ton useful load. Except tricycles, all vehicles must have a reverse and at least one double-acting brake, and a sprag. Any number of vehicles may be entered by the same maker, but duplicate vehicles of the same type and dimensions will be eliminated if the garage accommodation is not sufficient to admit them. Entrance fees up to September 15th are 200 francs per vehicle, and 300 francs from September 15th to October 1st, on which date entries finally close. The vehicles in each section will make two journeys per day over different routes.

THE number of automobilists touring through Switzerland has greatly increased of late, and the question has arisen of establishing a corps of pilots. There are so many dangerous roads in the mountainous districts that *chauffeurs* have often had to make applications for pilots. It is suggested that pilot stations shall be established at dangerous districts, where expert drivers with a full knowledge of the roads in the vicinity shall be stationed.

AFTER all, Deauville is again to have an automobile race meeting. Instead, however, of the mile trials, it is proposed to carry through a series of 500-metre runs, from a standing start and a stopping finish. Baron Pierre de Crawhez is offering a cup to the competitor who makes the best time in the trials, which are to be run off on the 10th September.

THE Automobile Club d'Avignon proposes to hold its annual hill-climb up Mount Ventoux on the 23rd September.

A **SERIOUS** campaign against the dust has been undertaken by the "Auto." It is becoming a very serious question in France, and it is in the interest of all users of the high roads as well as in the interest of all those who dwell along them to find a means of overcoming this plague. Automobilmism has not created the dust, which was just as noxious and evident on a hot summer's day with a turbulent wind, but automobilism creates wind and makes the pressure of dust constantly evident. Already a French scientist, Dr. Gugliemetti, has devoted great attention to the subject and found a means of treating the roads with tar in such a manner that the surface is protected and the dust absolutely done away with. The Association Generale Automobile has undertaken to treat the road from Paris to Versailles, which has become quite uninhabitable owing to the dust caused by the enormous numbers of motor-cars passing along it daily.

THE "Auto" has boldly undertaken the task of treating the road from Paris to Havre (136 miles), and it will call on the local authorities all along the road to lend their assistance, and will also urge all motorists to help with their subscriptions. The "Auto" concludes that if once a long road like this is rendered

be on a line 500 metres from the start, and the competitor must stop his car with the line between his four wheels. Should his car pass this line he may put in the reverse motion and come back to it, but the time will be counted against him, and should his car go more than thirty metres over the line he will be disqualified.

THE German Automobile Club has decided to allow the Daimler Motoren Gesellschaft of Cannstatt two places in the German team to defend the Gordon Bennett Cup next year. An eliminator race will have to be held for the third place, as three other German concerns have already notified their intention of building special cars for the contest, viz., Messrs. Benz and Co., Messrs. De Dietrich and Co., of Niederbronn, and the Neue Automobil Gesellschaft, of Berlin.

THE newly-formed Automobile Club of Spa is organising a series of competitions. On September 5th there will be a hill-climbing trial between Spa and Malchamps over a five kilometre course, followed by a series of mile trials from a standing start on the Malchamps Hill. A tourist circuit is to be held on September 6th between Spa,

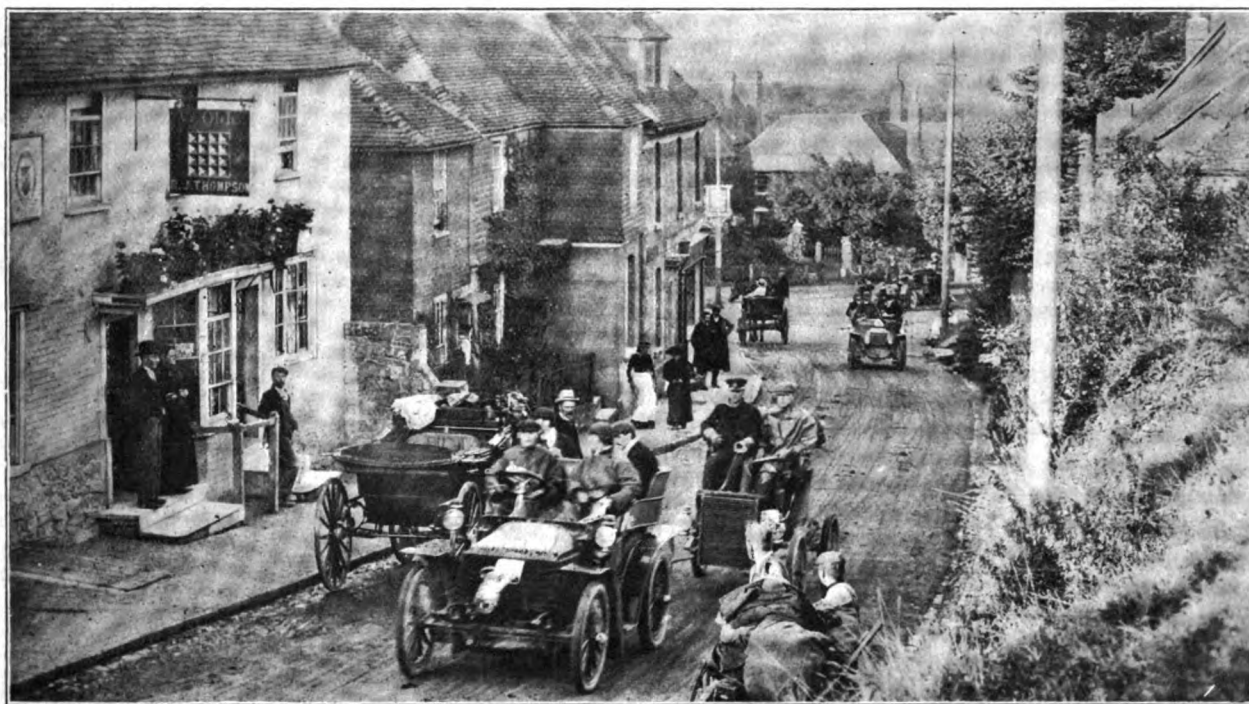


Photo by)

A Motoring Party passing through Ightham, Kent.

(Argent Archer.

dust proof, it will be such a conclusive demonstration of the advantage that the local authorities all over France will have the work carried out without delay. The publicity given to the matter by the "Auto's" campaign, which has been followed up by leading articles in all the French papers, is already assuring the success of the attempt.

THE automobile of 1903 runs too fast for the Deauville kilometre; there is not enough room to get up speed or slow down again, so that, as I have already mentioned, it is to be replaced by a 500 metre race with a standing start. The start will be made under special conditions. A wire will be drawn across the road in front of each competing car, and after the word go, five seconds will be allowed until the car breaks the wire, which starts the chronometer; should a competitor take more than five seconds in breaking the wire the timekeeper will break it himself, and the time will be counted. The object of this is to prevent "trick starts," which the timekeepers themselves cannot prevent, and which enable some drivers to get off sometimes nearly a second before their time. The arrival will

Malchamps, Sart, and Spa, the course to be covered twice. On September 7th a series of driving competitions will be held at the Spa Velodrome, the meeting closing with a banquet.

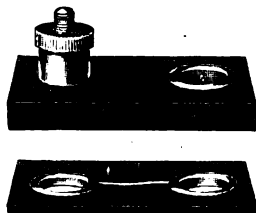
THE Laffrey meeting was brought to a conclusion on the 11th inst. by an excursion from Grenoble to the Lauteret, a distance of 92 kilometres. The route is a hilly one, the Lauteret being 1,900 metres higher than the starting point. About twenty cars successfully made the journey, M. Pelsier on a 12-h.p. Gardner-Serpollet succeeding on the way in mounting the stiff climb up the Galibier, a rise of 600 metres in six kilometres.

THE postponed reliability trials of the Dutch Automobile Club are now to be held from the 21st to the 24th September. There are to be four daily runs from Utrecht, ranging from 145 to 190 kilometres.

WESTRUMITE, Limited, has been registered with a capital of £150,000.

SOME USEFUL NOTES.

EVERY motor using electric ignition at all times runs the risk of short circuiting the current through the insulation of the wiring breaking down, or other cause, thus rapidly discharging the accumulator and probably buckling the plates and ruining the cells, besides leaving the user stranded. To avoid this danger the neat little safety fuse illustrated herewith has lately been put on the market. It is simply inserted in the primary wiring circuit, by attaching it to either the positive or negative pole of the accumulator, and while perfectly capable of carrying a normal current to flood the coil, yet when the safety point is reached



the fuse wire breaks and severs the circuit. To fix the fuse, remove the usual locking nut from one accumulator terminal, place the eyelet holes of block and fuse over accumulator terminal, and screw down the locking nut in the usual way. Then remove small lock nut from the fuse supporting block, and connect the wire which was previously attached direct to the accumulator terminal; the fuse thus intervenes between the wire and accumulator terminal, and should a short circuit occur, it fuses at four amperes, and thus saves the accumulator from damage. Before replacing a fuse which has gone, care should be taken to locate the short circuit. The fibre supporting block and fibre with fuse have been made to fit most accumulator terminals, but where it is found, as is sometimes the case with motor-cycles, the accumulator terminals are too short to take both the supporting block and fuse, the end of the thick fibre supporting block can, if necessary, be turned on one side or cut away, and the eyelet of the thin fibre piece carrying the fuse alone placed on the accumulator terminal, the terminal screw of the thick fibre block being retained in the other eyelet, and the wire attached thereto as described above. The safety fuse, as also replacements, can be obtained from Messrs. Davies, Kent and Stewart, 17, Berners Street, London, W.

As there are several users of the old type of Panhard car, in which the brake drum is moved transversely when either the forward or backward motion of the car is used, the following hint may be useful (it once saved the rider from a bad smash). Suppose you are descending a hill and circumstances arise necessitating a stoppage. If the foot brake appears useless, place the forward and reverse lever in the forward notch, i.e., the reverse, still keeping the clutch down, and then apply the foot brake, and it may be very often found that oil on one half of the brake drum prevented it working, but when the clean half was exposed to the band the brakes acted perfectly.

IN their useful handbook the Continental Tyre Company state that more than half the tyres they receive daily for repair have become defective through insufficient inflation. This is, they state, entirely the fault of the driver who neglected to inflate the tyres properly. Let us consider what happens when slack or deflated tyres are used. The whole object of a pneumatic tyre is to support the weight acting on the rims, by means of compressed air. If, therefore, there is no compressed air in the tyre, then it is quite unfit for use, and it would be too much to expect it to do the same service as a fully inflated tyre. As stated above, it is not the tyre but the compressed air within it which carries the weight resting on the tyre. If, therefore, there is insufficient air pressure, or no pressure at all, the tyre gets jammed between the rim and the ground, and, if used in this state for any length of time, will soon be destroyed. The damage caused in this way consists in the cutting of the edges of the outer cover, or in the abrasion of the outside layer of rubber in

the place where it comes into contact with the edges of the rim and the inner-tube, which, owing to its being always nipped, gets full of numerous small holes and in time becomes quite decomposed.

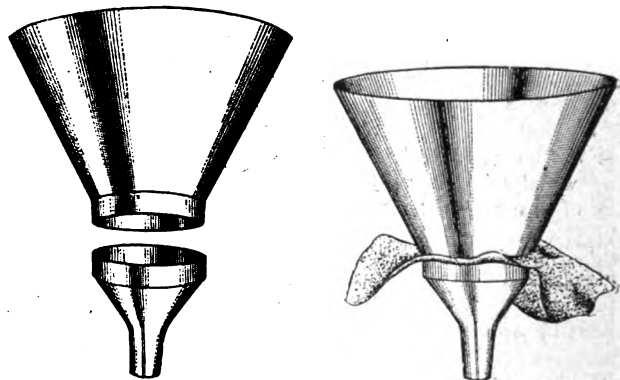
MANY motorists and motor-cyclists, if their motor stops or is giving trouble, rush off at once to the nearest "motor repairer or motor expert," whereas had they only spent a few moments in looking round the various parts of the engine, etc., they would have discovered the cause of the trouble and remedied it by themselves in a few minutes. If, however, recourse must be had to a repairer, be sure that whoever is entrusted with the work has had the necessary experience, as much harm can be done to motors by unskilful repairers.

IN a perfectly new car it may be found that on disengaging the clutch to put in the low gear, the male portion may spin so much that the gear cannot be engaged; the reason of this is that the leather of the cone requires wearing down, and this may easily be accomplished by starting up the engine with the low gear already engaged, and then letting the clutch gradually in, at the same time stopping the car from moving by the hand-brake. If this is done for a few moments, the leather will be worn down nicely.

USERS of Panhard cars which have the Centaure carburettor should refrain from roughly depressing the float. As is known, the petrol is regulated by a ball valve with a delicate little spring, and a rough depression of the float will weaken the spring and cause the carburettor to flood.

SOME useful hints with regard to magneto ignition machines are given in the handbook recently issued by the Clyde Cycle and Motor Co., of Leicester, from which we take the following:—Never take the magneto to pieces or interfere with it in any way. There is nothing in the machine to get out of order. It will usually run from three to four years, when the magnets may require re-magnetising, which will cost a few shillings. Neither oil nor wet will affect the magneto. The ignition plug need never be taken out to be cleaned unless the engine has been flooded with oil, in which case the oil will work up into the combustion chamber and will flood the part where the spark should take place. In ordinary use, it will always clean itself. Should oil have got on to the ignition plug through flooding, the engine cannot be started. In this case it will be necessary to take off the ignition plug box and clean off the oil by squirting petrol on it, also letting the oil out of the engine, and turning it round a few times to blow the oil out of the combustion chamber, before replacing the ignition plug box.

WHAT is known as the Petrol Funnel has just been put on the market by Mr. E. J. Willis, of 8, Park Place, New York; it



is claimed for the funnel that it will completely separate water from petrol. It is used in the ordinary way when filling the petrol tank, the spirit passing through the filtering material, the water remaining behind. The funnel is made in two parts, as illustrated herewith, so that the filtering material can be readily replaced.

The "Hercules" Steam Wagon.



STILL another concern to take up the construction of heavy steam wagons is the Hercules Motor Wagon Co., of Levenshulme, Manchester, whose five-ton vehicle is illustrated herewith. The boiler is of the vertical fire-tube type with straight solid drawn steel tubes, suitable for either coke or coal fuel. It is 4 ft. 3 in. high and 2 ft. 3 in. in diameter; the height of the boiler above the floor line when in position is 2 ft. The outside shell can be removed for cleaning; the boiler, which is constructed for a working pressure of 200lb. per square inch and hydraulically tested to 450lb. per square inch, is dropped between the main frame, to which a patent carrier plate is firmly bolted, and is placed in rear of the front axle; the foot plate is below the main frame and the boiler is fired from the front. It is fitted with double safety valves and Klinger water gauge. The water is supplied through a water heater by means of a pump driven by an eccentric upon the compensating shaft; there are also two injectors as an auxiliary supply. The working water level is 16 inches from the top of the fire box. The engine is of the compound link-motion reversing pattern, fitted with piston valves; the cylinders are 4 in. and 7 in. diameter by 6 in. stroke. It can be converted at will from the driver's seat into a double high-pressure engine with separate exhausts, thereby giving increased power in cases of emergency. With this arrangement there is claimed to be no back pressure upon the high-pressure piston. The engine and gearing are contained in dust-proof casings and run in an oil bath. The wagon is fitted with two speeds, differential gear, and patent locking appliance. The change speed is effected by means of a special device, doing away with internal fork clutches. The power is transmitted by two strong roller chains from steel pinions upon the compensating shaft to steel chain wheels upon the triangular drive to the rear wheels. On the high gear, with the engine running at 450 revolutions per hour, a speed of six miles per hour can be attained, increasing to eight miles at 600 revolutions. No condenser is employed, the exhaust steam being superheated and cannot be seen in actual work. The front axle is divided, the steering being on a modified Ackermann principle, operated by worm and wheel, giving a large angle of lock without reducing the stability of the wagon. The

makers inform us that the vehicle can turn in a complete circle of twenty-six feet. The main frame of the wagon, which is carried upon four laminated plate springs attached to the axle by means of strap bolts, is of channel steel braced and constructed so as to carry the whole of the machinery, boiler and tank. The wheels are of the gun-carriage pattern fitted with steel hubs and bronze bushes. The front pair are 2ft. 9in. diameter with 5in. by $\frac{7}{8}$ in. tyres. The back wheels are 3ft. diameter with 6 in. by 1 in. tyres, and are fitted with a triangular drive and band brake drum whereby the drive is taken direct to the wheel felloes. The back axle is of forged steel, and is held in position by means of two strong pivoted radius rods, thereby allowing for the deflection of springs. The water tank has a capacity of 150 gallons, while sufficient fuel is carried for a run of forty miles.

At the recent Royal Lancashire Agricultural Society's Show held at Trafford Park, Manchester, a wagon of this type secured the highest award. The Hercules Company also make a five-ton tipping wagon with a cubical capacity of six yards. The engine and transmission gear is the same as in the standard five-ton vehicle illustrated, the tipping being effected by means of two screws and mitre gear operated from either side of wagon.

THE Cardiff Health Committee has recommended to the Council that two motor-wagons be ordered for use in connection with the department, at a cost of £500 each.

MESSRS. FRANK F. WELLINGTON, LTD., inform us that they have now made arrangements to supply the Brooke and any other make of car on the hire-purchase system.

THE Wolverhampton and District Automobile Club will hold a run to Buildwas to-day (Saturday), the outward journey being made *via* Madeley and the return by Wrekin.

A "TOLEDO" 24-h.p. petrol car has just been driven to the summit of Mount Washington, in the White Mountains, New Hampshire, U.S.A., a feat frequently attempted but seldom successfully accomplished. The car was driven from the Glen House to the summit, 6,300 feet above sea level, in three hours and five minutes, on the 25th ult., by Mr. A. C. Moses.

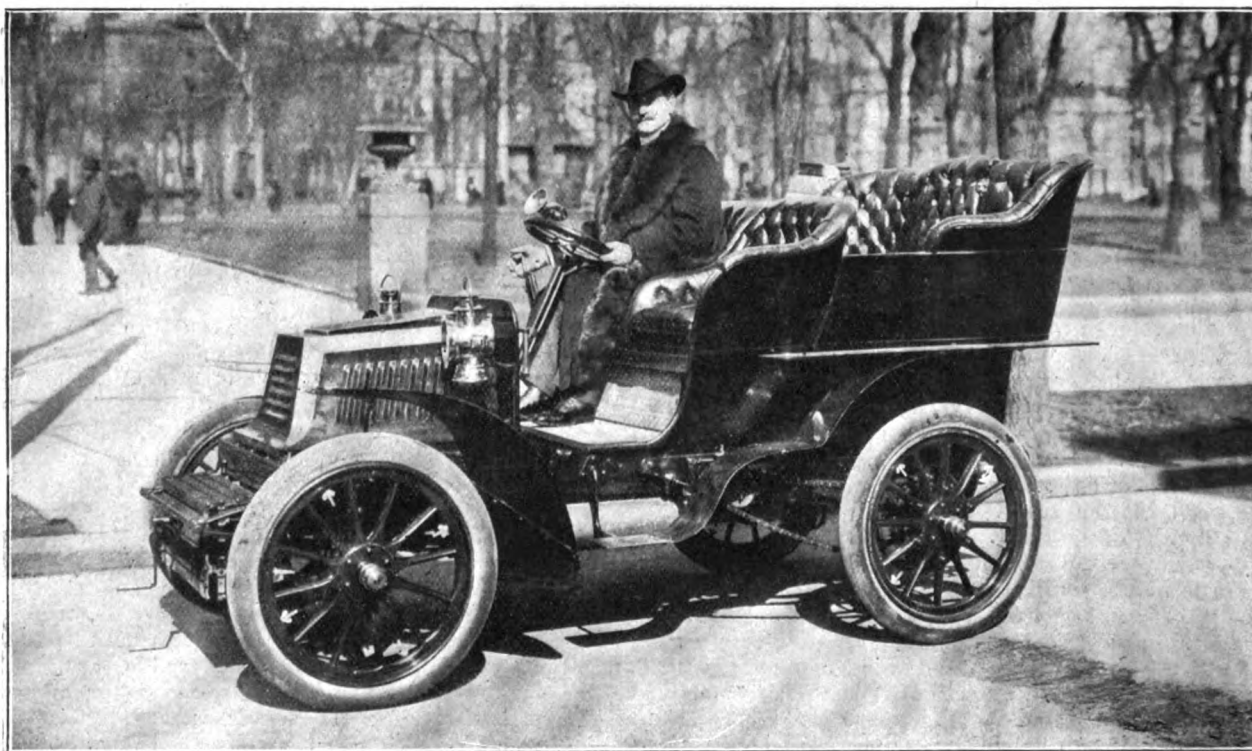
TOURING BY MOTOR-CAR.

(Concluded from page 459.)

THE driver and each passenger need one suit of good warm clothing, at any season of the year, with woollen underclothing, and of course, a top coat. The reserve suit, underclothing, toilet articles and miscellaneous belongings may go in one dress suit case, to be carried along in the vehicle, or, in special cases with a known itinerary, sent ahead by train. As a rule, however, it is better to limit one's luggage to that which can be carried. Not only will this be ordinarily sufficient, but it will obviate a good deal of worry and delay. A rain-coat and duster will both be carried as a matter of course, with an oilcloth cover for the vehicle optional, but worth while if it can conveniently be taken. The goggles, hats, caps, and other accessories used for ordinary short runs will serve very well for the tour.

The intelligent use of a motor-car for distance work on the road—which means getting the most out of it at the least expense of care and muscle, and without injury to the vehicle—

It is noticed that some automobilists get through a tour in the most comfortable and enjoyable way, while others manage to spoil their journey for themselves or others, or both. The two indispensable qualifications are tact and contrivance. One tactful person doing everything in the right way at the right time, picking up valuable bits of information from those he comes in contact with, having the faculty of securing a comfortable room at a crowded country hotel, and the like, brings enjoyment into a journey when the opposite sort of person would spoil it entirely. Happily for the whole party if the host possess this priceless disposition, for he will impart it also to his guests. The other part is contrivance—the useful faculty, for one thing, of taking along what will be needed and leaving the rest at home. Experience teaches how much to take and what, if any, to have sent on. A good bump of contrivance, aided by common sense, will bring hope out of calamity at a moment's notice. The item of luggage is only a part of it, as all the arrangements from day to day need the same happy frame of mind and spirit to carry them through with the largest amount of pleasure (and no difference of opinion worth the name.



Eugene Sandow on his "Searchmont" Car.

calls for more than a familiarity with routes and road rules—more than a close study of books of instruction in care and management. A good working knowledge, if not, indeed, a fair technical command of the principles of construction individualised in one's favourite vehicle, is essential to complete self-confidence; and this is to be gained only at the expense of considerable personal application. This sort of acquaintance not only tends to a high average of mechanical performance in the course of a tour, but it develops personal enthusiasm as nothing else could do.

One must learn to be his own mechanic as well as his own driver—at times at least—if he would not become at some time or other the unhappy victim of the village blacksmith along the great highway.

As a matter of experience, the breakdown rarely comes inside town limits, with a well-equipped repair shop within walking distance; but almost invariably half-way on the road to or from Nowhere. The right sort of knowledge, backed up by the ability to put it into practice in an emergency, means additional comfort and money saved on every long trip. An ounce of "know how" is worth a pound of profanity when the pinch comes.

From all indications, touring is being indulged in more this season than ever before. The increase in the number of motorists within the past year has been so marked that this in itself has swelled the ranks of road tourists. Apart from this, however, there seems to be a sort of universal public interest in the road performances of automobiles, and tours long and short have been planned wherever motorists meet all over the land. There exists in most men and women, along with an intuitive love of outdoor life, a genuine liking for mechanics and a penchant for travel. One of the most fascinating features to the beginner is the mowing down of the miles, and one accustomed only to the slower progress of the horse can scarcely believe that he has traversed the distance actually covered.

Anyone who wishes to get the most out of his week or two of country touring, both in health and pleasure, will find a motor-car tour superior to any other means. Nothing so completely takes the mind from business; the automobile demands and will have all the attention that is not absorbed by the scenery or circumstances of the trip; business and the ordinary cares of life are forgotten.

HERE AND THERE.

LADY GREY has just acquired a 16-h.p. Siddeley car.

TO-DAY (Saturday) the Lincolnshire Automobile Club will hold a run to Roxholme Hall, Sleaford.

DURING the month of June the exports of automobiles and parts from the United States reached a value of £33,654, as compared with £26,230 in the same month of 1902.

BARNEY OLDFIELD, who has recently made so many sensational American record times on the track, has joined the Winton Motor-car Co., for the purpose of driving the Winton racers in future contests.

MR. H. C. DIGNASSE has lately opened a depot at 5, Marshall Street, Regent Street, W., for the sale of Sunbeam and other cars. He keeps a stock of petrol and accessories as well as a number of cars for hire.

AT the Sandwich Petty Sessions, last week, the Mayor complained of the high speed at which motor-cars traversed the narrow streets of the town, and Superintendent Chaney was asked to take proceedings against offenders.

It is said that Pittsburg physicians have adopted the automobile in their practice to a greater extent than those of any other city in the United States. Nearly three-fifths of them have substituted the motor vehicle for the horse-drawn one.

AN order has been placed for an electric car for the use of the Chief of the Fire Department of San Francisco. The vehicle is to have accommodation for two persons, to be capable of a speed of a mile in three minutes, be able to climb a 20 per cent. gradient, and to possess a radius of action of forty miles.

MR. ALEXANDER WINTON, upon his return to America, is reported to have expressed his intention to abandon for the future participation in all automobile races. "I am still heart and soul interested in racing events," he declared, "but henceforth I shall design and build machines for others and will do no racing myself."

SOME of the Hythe town councillors having objected to motor-cars plying between Hythe and Folkestone, the mayor of the former town recently announced that no further licences for public service motor-cars would be granted. Much indignation is felt in Folkestone at Hythe's action, and a conference has been arranged between representatives of the two towns.

THE Fabry Automobile Company, Limited, has been registered with a capital of £5,000 to adopt an agreement with M. Fabry to buy, sell, let on hire, and generally deal in motors and motor carriages and their parts, and to carry on the business of automobile store and garage keepers, motor-car repairers, &c. The registered office is at 37, Great Marylebone-street, W.

THREE crop experts of Minneapolis, Minn., recently made a tour through Minnesota and the Dakotas examining the crop conditions. Hitherto such trips have been made with horses, and were necessarily limited. With the motor-car, however, the crop experts found they could cover a wide territory and gain a much more thorough knowledge of the crop conditions than ever before.

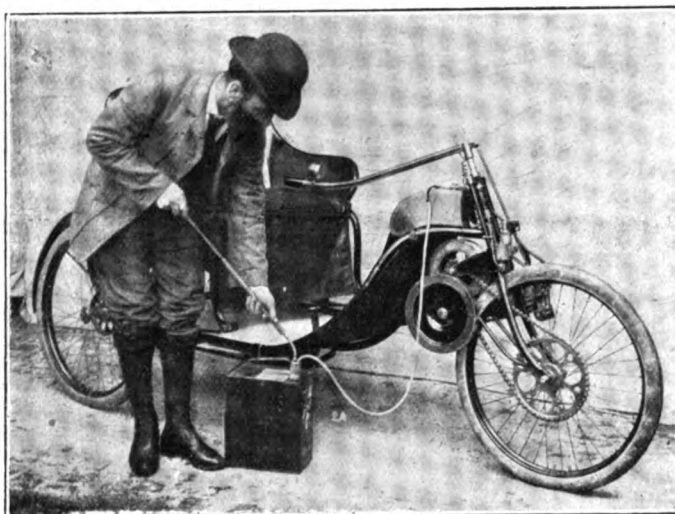
MR. MACONCHIE, M.P. for East Aberdeenshire, who is touring in his constituency in a motor-car, met with an accident on Saturday. The car was travelling at a rapid rate, when the lamp jumped off the bracket and was caught in the steering gear, causing the car to fall over an embankment. Mr. Maconchie, and Mr. Allen, of Lowestoft, who accompanied him, escaped with a severe shaking.

THE Mohawk Motor Company have just placed upon the market a new car called the "Mohawk Manon." The vehicle is fitted with either a De Dion or Aster governed engine, and is made in two patterns, 6-h.p. and 9-h.p. The speed of the lower powered car is estimated at thirty miles per hour, and the 9-h.p. is said to be capable of attaining forty miles. It has three speeds and reverse on one lever and three brakes—two band brakes on the back axle, and one on the differential shaft.

At the half-yearly meeting of the Taff Vale Railway last week the chairman announced that self-contained steam motor carriages were shortly to be used upon the line for carrying passengers for short distances and at frequent intervals. One advantage of the new system was that the Board of Trade had recognised the desirability of enabling carriages so moved to stop at points for setting down and taking up passengers other than stations on the railway. If the experiment was successful the new method would be applied to the carriage of goods as well as passengers.

MR. R. J. MCCRERY'S Motor Book, which has been published by Mr. John Lane in his useful series of Country Handbooks, will be of service to many motorists in their novitiate. The information imparted is of an elementary kind, the chapters dealing with the motor, change gear and transmission, driving and looking after the car, being noticeably good. The illustrations have been well selected, although the appearance of some French words near an illustration of the clutch on page 67 indicate that they have not all been specially prepared for the work. That, however, does not detract from the high opinion we have formed of the little book as a whole.

MR. B. E. DICKINSON, of the Toledo Engineering Works, Birmingham, has lately introduced the petrol saver and strainer illustrated herewith. The indiarubber tubing used is specially treated so that it will withstand the action of petrol,



alcohol and oils. As will be noted, the delivery tube is fitted with a rigid bend to hang it on or into the tank, and at the other end of this tube a strainer is fitted. The connection between the stopper and petrol can is also of specially treated rubber tubing, so that an air-tight joint may be made with the different petrol cans which are in use. The device can be supplied fitted with connections adapted for ordinary tyre pumps or for the larger motor-car tyre pumps, and is made with a 3ft. 6in. delivery tube for motor-cycles, and with 6ft. of tubing and a larger valve connection for motor-cars. Its use not only prevents waste of petrol, but obviates both the clothes and hands of motorists becoming saturated with spirit. When not in use it can be folded up into a very small space.

SPEAKING at the half-yearly meeting of the London Road, Car Co., last week, the Chairman (Mr. J. Howard Moore, J.P.) said that "six months ago I told you that during the next few months, unless anything unforeseen occurs, you will see on the streets of London several road cars driven by mechanical power. Our expectations in this respect have not been realised, for the unforeseen did occur. Various causes have contributed to this great disappointment, not the least of which was the serious conflagration at Cannstatt, in Germany, and which we are informed destroyed a number of vehicles which were in course of construction for this company. The date when these motor road cars will be seen on the streets is, therefore, deferred."

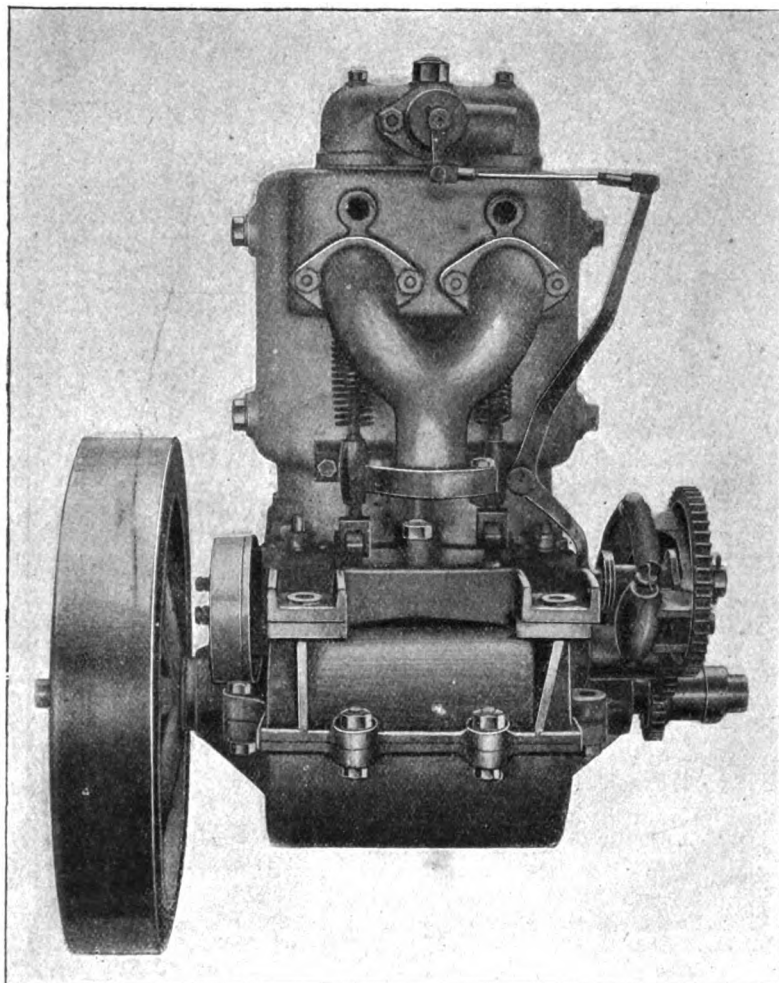
DURING his stay at Marienbad, King Edward VII. has been making use of a 20-h.p. Mercedes car.

SIR JOHN DICKSON POYNTER has just acquired a 7½-h.p. Wolseley car.

THE Imre Engineering Co., Limited, of Regent Street, W., have opened a garage at 48-50, Tottenham Street, W., where they are able to undertake all classes of automobile repairs.

ON Thursday, last week, a trial of a new motor sanitary wagon was held by Messrs. Savage Brothers, Limited, at King's Lynn, in the presence of a large number of borough surveyors.

THE British Motor Fitting Co., of John Bright Street, Birmingham, are the makers of the new two-cylinder petrol motor illustrated herewith. It is normally rated at 10-h.p., but is stated to develop 12-b.h.p. The two cylinders are cast in one



piece with a water jacket surrounding them. The cylinder diameter is 4½ in. and the stroke 5½ in., the normal speed of the engine being 900 revolutions. A governor is provided, this, as will be seen, being adapted to act on the admission of gas. The motor appears to be well designed and, with a view of long life, special attention has been paid to the bearings.

THE Scottish Office has issued to the various local authorities in Scotland copies of a set of regulations prepared by the Home Secretary dealing with the keeping and storage of petrol for the purposes of light locomotives. After setting forth the dangers which might arise from the careless storage of petroleum spirit, the circular urges the necessity of strict precautions by the employment of thoroughly sound and enclosed vessels, and by avoiding the use of naked lights in dangerous proximity to the spirit. The regulations apply only to petroleum spirit kept for the purposes and use of light locomotives, and do not apply to petroleum spirit kept for sale, or partly for sale and partly for use.

TO-DAY (Saturday) the German Automobile Club is holding a dinner in celebration of Germany's victory in the 1903 Gordon Bennett race.

THE Garage Proprietary, Limited, has been registered with a capital of £20,000 to acquire the business carried on at 34, Queen-street, E.C., as the City Garage, by Garages, Limited, and all the business of the company.

THE Automobile Agency of Dublin took back a quantity of unused spirit from visitors during the Irish automobile tour, with the result that they have been fined for storing more petrol than was allowed by the terms of their licence.

IN connection with a fire at Aberdare last week, one of the Aberdare Valley Motor Service Co.'s cars was called upon to convey a quantity of hose from the adjoining town of Aberaman to the scene of the outbreak, a distance of about two miles.

HIS Royal Highness the Rajah of Pudukota has ordered a 20-h.p. French Gardner-Serpollet steam carriage; Sir Charles Cayzer has also a 10-h.p. brougham of the same type on order from the Speedwell Co.

CONSIDERABLE excitement prevailed at Vauxhall, S.E., on Tuesday afternoon by the breakdown of a steam motor-wagon belonging to Messrs. Farmiloe, the two parts of the back axle coming apart and letting down the rear of the vehicle.

THE Motor Manufacturing Company, Limited, have lately opened a garage and stores at 34, North Street, Manchester Square, W., where any accessories for M.M.C. cars can be obtained. A staff of mechanics is now available to promptly carry out repairs.

THE Khedive, who is taking the cure at Divonne, and who had never seen Aix-les-Bains, has visited that town on his motor-car. The royal visitor left again by automobile, returning to Divonne. Very few people knew of the visit.

LAST week Mr. A. G. Perman, accompanied by a mechanic, accomplished a non-stop run from London to Glasgow on a 10-h.p. Gladiator. Although it was necessary to make a delay of 25 minutes to repair a punctured tyre, the engine was kept running the whole time the car was on the road. The route taken was via Newcastle, Berwick, and Edinburgh.

A verdict of "Accidental death" was returned at Wickford on Tuesday in the case of Mr. Daniel Harper, of Holloway-road, and 2, Russell-mansions, Russell-square, W.C., who died from injuries sustained in a motor-car accident, near Woodham Ferris, about midnight on August 7th. Mr. Harper started from Wickford in his motor-car to travel to Burnham-on-Crouch. In entering the car again after walking up a hill his left foot caught in the chain and was terribly crushed and twisted. The driver drove the car back to Wickford, where Mr. Harper was attended by a doctor. The foot was amputated on Sunday, but tetanus supervened, and death occurred on Monday. Mr. Harper had said that the accident was due to his attempt to enter the car while it was in motion.

ARRANGEMENTS are nearly completed for the course of motor-car lectures to be given next winter under the auspices of the evening institute connected with the Young Men's Christian Association, of Boston, U.S.A. The lectures will relate to the construction, care, handling and repairing of all types of steam, electric and petrol cars. There will be three courses, one, A, being intended for the owners, operators, and prospective purchasers of automobiles, giving information concerning the important points of steam, electric and petrol cars. Course B, a complete draughting course, dealing with the construction of a typical petrol car, intended to prepare machinists and draughtsmen for the automobile trade; and Course C, a practical course of steam, electrical and gas engineering, fully illustrated with engines, boilers and other equipment for the training of professional drivers.

MOTOR-CYCLING NEWS.

THE success of the Auto-Cycle Club reliability trials has been considerably marred by the bad weather which has prevailed. Out of the 48 entries, 43 faced the starter for the first day's run to Canterbury and back. The roads were heavy and slippery, notwithstanding which 36 of the riders reached the Palace at night. On Wednesday, the 12th, the run was to Brighton and back, *via* Westerham and Lewes, and on the return journey all had to climb Westerham Hill, the gradient on the worst part of which is about 1 in 7.5, and the total length about 1,076 yards. In spite of inclement weather, 35 riders turned out. Among the best performances on the hill were those of F. Applebee on a 3-h.p. Rex, A. Wright on the 2½-h.p. Ormonde, and W. Mills on a 2½-h.p. Phoenix. The run on Thursday, the 13th, was to Worthing, and proved a gala day for the police, who, by means of a trap, booked a number of the competitors for furious driving. Eastbourne was the destination of Friday's run, which was accomplished in showery weather.

ON Saturday and Sunday the riders enjoyed a well-earned rest, the trials being resumed on Monday, when thirty competitors set out for the journey to Folkestone. Brighton was visited on Tuesday, and Basingstoke on Wednesday; the trials will be brought to an end by a series of tests on the Crystal Palace track to-day (Saturday).

FOR the runs to Canterbury and Brighton on the 11th and 12th inst. the following machines, as a result of a preliminary enquiry, gained full marks:—Peugeot (one), Booth (one), Star Griffon (one), Bat (two), Ariel (one), King (one), Ormonde (three), Chase (one), Matchless (one), Alldays and Onions (one), F.N. (one), Rex (one), Bradbury (two machines).

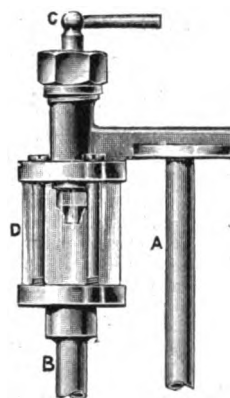
A MOTOR-BICYCLE has just been turned out of the workshops of the Carbine Cycle and Motor Company, of Melbourne, which, according to the "Australian Cyclist," comprises many new features not seen in European or American motor-cycles. The machine has been built to the design of a well-known Melbourne motorist, Mr. H. B. James, and will be used in the forthcoming motor-cycle race from Warrnambool to Melbourne on August 22nd. The principal departure from the ordinary lines is in the frame, which is built fairly high in the front, and then sweeps down until the saddle pillar lug is only about 15 inches above the bottom chain stays, the top of the saddle being only some 33 inches from the ground. The frame provides a long wheel base—52 inches from centre to centre of wheels. The motor is a M.M.C. 2½-h.p. set vertically well forward in the frame, and is fed through a Longuemare carburettor. The transmission is by means of a flat belt 8½ feet long. The wheels are 26 inch diameter. Provision for petrol, cells, lubricating oil, coil, tools, and repair outfit is provided for in one large copper tank. The machine was built with a view of affording a comfortable touring motor machine, capable of climbing any ordinary hill without pedalling assistance, and at the same time fast, and what is of more importance, strong enough for any speed work over the average Australian roads. Trial runs around Melbourne have proved the machine to be easy of control, with a speed range of from four to thirty miles an hour. The machine weighs 195 lbs. with cells and a supply of petrol sufficient to run the motor from 130 to 150 miles.

THE motor-cycle trials organised by the Southampton Motor Club are to be held on Monday next (weather permitting), a run from Southampton to Salisbury and back twice having to be made by each competitor. The route throughout the run will be divided into sections of about twelve miles in length; an official honorary timekeeper will be stationed at the end of each section, who will note on his time sheet the hour at which each cycle passes him; marks will be deducted for a speed below twelve miles an hour over any section. If a driver shall have arrived at a compulsory stopping place in advance of his time on more than three occasions throughout the trial he will be liable to disqualification.

There will be three compulsory stops in the day, viz.:—Five minutes at the Salisbury end each journey, and half an hour at the Southampton end first return. The total number of marks for the trial is 100. Any cycle making a speed of less than twelve miles an hour over any section of the route will lose 2½ marks, while a speed of less than twelve miles an hour over two sections will entail a loss of 7½ marks. All repairs necessary during the day's run must be made by the driver himself, without any outside assistance whatever. Any replacements must be made from parts actually carried on the machine or the person of the rider. Each dismount will cause a loss of five marks, except at stops. At the latter 2½ marks will be deducted for every five minutes over the regulation time allowed. Five marks will be taken off for replacing or changing any part, such as accumulator, plug, trembler, etc. Adjustments are allowed at Southampton only; for any made on the road 2½ marks will be deducted in addition to the five for stopping. No deductions will be made for punctures, except those for the dismount to repair them. The winner will be presented with a £5 5s. silver vase given to the club by Messrs. Humber, Limited.

A MOTOR-BICYCLE hill-climbing competition, under the auspices of the Motor Cycle Union of Ireland, will be held on the hill at Ashford, Co. Wicklow, to-day. The Northern Centre of the Union is also holding a reliability trial from Belfast to Garvagh, Co. Londonderry, and back, a distance of about 150 miles. The President of the Union, the Hon. Leopold Canning, has offered four silver champagne cups, one of which will be given in each of the classes. Mr. Canning is entertaining the competitors at Garvagh Castle.

MESSRS. J. A. PRESTWICH AND COMPANY, of Tottenham, have lately introduced the automatic lubricating device for motor-cycles illustrated herewith. The pipe A projects into the oil container which Messrs. Prestwich usually fit to the front of the tank. The vacuum is maintained in the crank chamber of the engine by the patent vacuum valve which draws the oil up by pipe A through the needle valve and along the



pipe B to the motor. The number of drops per minute is regulated by the needle valve C, which when once set requires next to no attention. The glass D allows the dripping of the oil to be seen. Messrs. Prestwich inform us that they have had these lubricators running for the past fifteen months, and find that they are very economical and reliable in working.

THE Moto-Cycle Club de France has decided to organise a 1,000 kilometre reliability trial for touring motor-cycles, to be held in October next.

FROM Messrs. Thos. Noakes and Sons comes a very complete catalogue of fittings and accessories for steam and petrol cars, these including cocks, valves, unions, oil and water pumps, lubricators, and pressure gauges. We notice that Messrs. Noakes have taken up the construction of the James and Browne patent oil distributor.

CORRESPONDENCE.

THE MOTOR CARS BILL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A very natural irritation has prevailed in the automobile world at the result of the debate on the Motor Cars Bill recently brought forward by the Government and passed through Parliament. Some automobilists seem under the impression that (1), I am the author of the Bill; (2), that the Parliamentary motorist party had it in their power at any time to stop its passage or alter it in any way they chose. Both these ideas are erroneous. The Bill was brought in by the Government on their own initiative, in consequence of a peremptory demand from the general public for more protection, which produced a feeling in the House of Commons so strong that neither this nor any other Government could have resisted.

The measure, though admittedly far from satisfactory from a motorist's point of view, is much better than might have been anticipated a fortnight ago. The Government, instead of being abused, ought to be thanked for having endeavoured, to the best of their ability, to hold the balance fairly and having resisted as far as they could the strong unreasoning anti-motorist prejudice shown by the majority of members of Parliament irrespective of party. If some Bill had not been passed this Session, the Government intended carrying through a two-clause Bill early next year, solely providing identification and increased penalties without any alteration of the speed limit at all, a proceeding which would have been very disastrous from a motorist point of view. Those who were not in the House of Commons can hardly realise the violent feeling existing against motor-cars, and on behalf of the Automobile Parliamentary Committee I may say that if every point worth fighting had not been fought for and the most strenuous opposition offered to many deleterious amendments moved from the other side, the measure would be far worse than it is.

It matters little to me how much my actions during this crisis may be either unintentionally or intentionally distorted, but in justice to the forty-five members of Parliament who did their best to protect the interests of automobilism against overwhelming odds, I think that instead of abuse they should receive the thanks of the motoring community. For nearly twenty-four hours of Parliamentary time they fought hard to improve a measure which they were unable to throw out, and the number and value of amendments accepted testifies to their labours.

My own opinion (for what it may be worth) is that the Act will not turn out to be as bad as many think, and if all motorists—amateur and professional—show proper consideration and courtesy during the next three years to the public and road user it is possible that Parliament may modify the meagreness of the speed limit, and diminish the harshness of the penalties in 1906.—Yours faithfully,

JOHN S. MONTAGU.

A NEW AIR-COOLING METHOD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have recently secured a provisional patent in regard to the most efficient method of cooling air-cooled motors, etc. It is known that a multiplicity of points affords the most rapid radiations of heat from surfaces, and this is the principle of my method. Instead of the usual cast flange radiators, I electrically weld or cast lengths of wire on to the plain cylinder, giving it the appearance of a hairdresser's revolving brush. The wires, however, are not so closely arranged that there is any difficulty with the welding or moulding, and there is little limit to the speed of the welding operation; in fact, for a standard motor the jig could effect the welding in a few seconds. The method can be applied to cooling water jackets, as it cools more rapidly than the present honey-comb radiators and can be made much cheaper.—Yours truly,

M. R. D. ROBERTS.

THE MIESSE CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reference to the enquiry from "Faber" in the last issue of the *Motor-Car Journal*, I think my experience last week on my new 10-h.p. Miesse steam car may interest him. I had a most satisfactory run, and as I was a complete novice, never having driven a car before, I consider my tour speaks very well for the construction of the car and the simplicity of the control. We had no trouble except one short stop owing to a joint in the steam gauge leaking, due to forgetfulness on the part of the driver; this was quickly tightened. Many of the hills we met with were dangerous and precipitous. The car ran throughout extremely smoothly, and literally flew up some of the hills.

I left the works at Wolverhampton on August 2nd, at 8 a.m., with three people on board. As soon as we got through the town I took over the car and drove myself via Shrewsbury into Llangollen. After a short stop to refill tanks we ran on to Bettws-y-Coed, arriving there at 7 o'clock (a distance of about 100 miles). The next day we left Bettws-y-Coed at 10 a.m. for Barmouth via the Pass of Llanberis and Carnarvon. We stopped at Carnarvon for lunch, and then went on to Beddgelert, passing by the foot of Snowdon through Harlech along the coast to Barmouth, arriving there at 8.15 p.m. The hills in this district are very precipi-

tous, but the car tackled them all in good style. The next morning we left Barmouth about 10 a.m. for Llanurig, going via the coast, Penmaen Pool, Towyn, Aberdovey and Machynlleth, arriving at Llanurig about 7 p.m. Wednesday morning we left Llanurig at 10 a.m. for Harewood End (nine miles beyond Hereford) passing through the valley of the Wye. Thursday morning we left Harewood End at 10.30 for Gloucester by a very circuitous route, stopping at various places of interest, including a stop of two hours at Symonds Yat and Tintern. From Tintern we journeyed through Monmouth by a very hilly route to Chepstow and Gloucester, arriving at 8.15 p.m. On Friday morning we left Gloucester, passing through Taunton en route for my home in Devonshire, which we reached about 9 p.m. This was a total mileage of about 500 miles in the six days. We did not hurry in any way as we stopped to see all the places of interest on the way, and also several places of interest out of the way.—Yours truly,

A DEVON MAN.

EXPERIENCES WITH STEAM AND PETROL CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I add my word to that of "Faber" in last week's issue asking for reports of Miesse steam car? I should like some independent owner, i.e., one who is not interested financially in the car, to give your readers some account of the working and the difficulties to be overcome in using this type of car, also its special advantages. I am myself much interested in the Miesse, but, like "Faber," can only come across isolated reports, generally of a technical and apparently interested nature and usually contradictory. May I also suggest, that if you could arrange for similar details to be given of other good makes I think it would serve a very useful purpose. I particularly want to hear some account of the Lanchester myself. Unfortunately I am not yet the happy possessor of a car, and hence my anxiety to hear more details of various makes before deciding in which to invest.—Yours truly,

"SILENCE."

AFFILIATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see that in a letter recently published in the *Journal*, Mr. E. Cragg, M.D., the hon. sec. of the Lincolnshire Club, mentions that some eight out of the (at least) twenty-eight motor clubs have replied. Lincoln is far and away the best place for the proposed conference, being very central and easily reached either by road or rail. Every provincial club, including the motor-cycle clubs, ought to be invited to send two delegates to a conference, and the chairman and hon. sec. of each club would be best. The question of how all the clubs could be banded together, and an effort made to work with the A.C.G.B.I. in some form should be discussed, the secretary of the A.C.G.B.I. being invited down to the conference. The famous Lincoln Guildhall would no doubt be lent for the purpose of the conference.—Yours truly,

G. J. WILKINSON.

ACCUMULATOR CHARGING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having at one time been in similar difficulty to your correspondent who signs himself "Neilage Currie," let me give him my solution of it. I purchased a Riches accumulator charging outfit, by which you can charge a car accumulator from any available installation. I charge mine from the circuit in my own house, which is a 50-volt installation. In charging cells you must have a resistance, and the lamp which is in series with the voltage in your correspondent's installation is a suitable one. When charging my car accumulator I usually connect it up at night, and it is always fully charged by morning.—Yours truly,

A COUNTRY PRACTITIONER.

MOTOR WAGONS AND ROAD WEAR.

At the Barnard Castle Police Court, last week, an important prosecution under the Light Locomotives Act was heard. Charles Hubble, the driver of a motor-wagon, plying between Cow Green and Middleton-in-Teesdale Railway Station, with barytes, was charged with driving a wagon with grooved tyres, contrary to the Act. The information was laid by Superintendent Cameron, at the instance of the Chief Constable of Durham County, and Mr. J. H. Holmes, solicitor, Barnard Castle, defended. Sergeant Nicholson said he examined the wheels on the 25th of July, and they were grooved. Wilfrid A. Young, an expert, denied that the tyres were grooved. He said the width of the wheel was twelve inches, and the plates were eight inches long. Supposing the wagon was standing on three inches of space, that would make forty-eight square inches, and thirty-six inches of that space would be solid plate, and the other twelve would be recess between the two. That recess was simply filled up with ordinary road dirt and small stones. If the tracks which the wagon made on the road were examined, it would be found that no damage to the road was sustained. There were eight rivets to each plate, with counter-sunk heads. The plates were five-eighths of an inch thick, and, always at work, would last eighteen months. The witness further stated that the wheels were all made to one pattern, and when these motor-wagons were taken off the road by the Govern-

ment Mechanical Transport Service and brought into fields and on to soft land, studs were placed in the wheels for grip. The Bench, after retirement, dismissed the summons.

THE HORSE-POWER OF PETROL MOTORS.

THE engines fitted to motor-cars are rated by some makers at powers which could only be obtained if the mean pressure during the working stroke was 120 lb. to 150 lb. per square inch. We have always had great hesitation in accepting these figures, although assured by the makers that the actual powers stated have been recorded on the brake. Even in the Korting gas-engine, where the compression is 125 lb. per square inch, and the maximum pressure about 400 lb. per square inch, the mean effective pressure on the piston is only 90 lb. per square inch. Further, the motors supplied to the North-Eastern Railway Company for their Hartlepool service, which were rated at 100-horse-power, have, it is reported, proved quite inadequate to the requirements of the traffic. These considerations all point to the conclusion that the engines fitted by some motor-car makers yield in actual fact much below their nominal horse-power. Brake trials by independent experts would, of course, settle the matter; but until authoritative figures of this kind are published we are inclined to the opinion that the actual power of a motor-car or motor-bicycle is often not much more than one-half to two-thirds of its nominal rating.

A confirmation of this opinion is afforded by some tests made by M. E. Hospitalier on a motor of a leading French maker. The object of the trials was really to test a new type of indicator specially designed for use with very small and quickly-running engines, for which indicators of the usual type are in every way unsuitable. The working agent

and was rendered unconscious. Upon subsequent examination it was discovered that her skull was fractured and most of her teeth had been knocked out or loosened. The accident also caused concussion of the brain and partial paralysis of the left side of the face.

The jury retired to consider their verdict, and upon their return into Court found a verdict for the plaintiff, with £125 damages, and judgment was given accordingly.

A FATAL ACCIDENT.

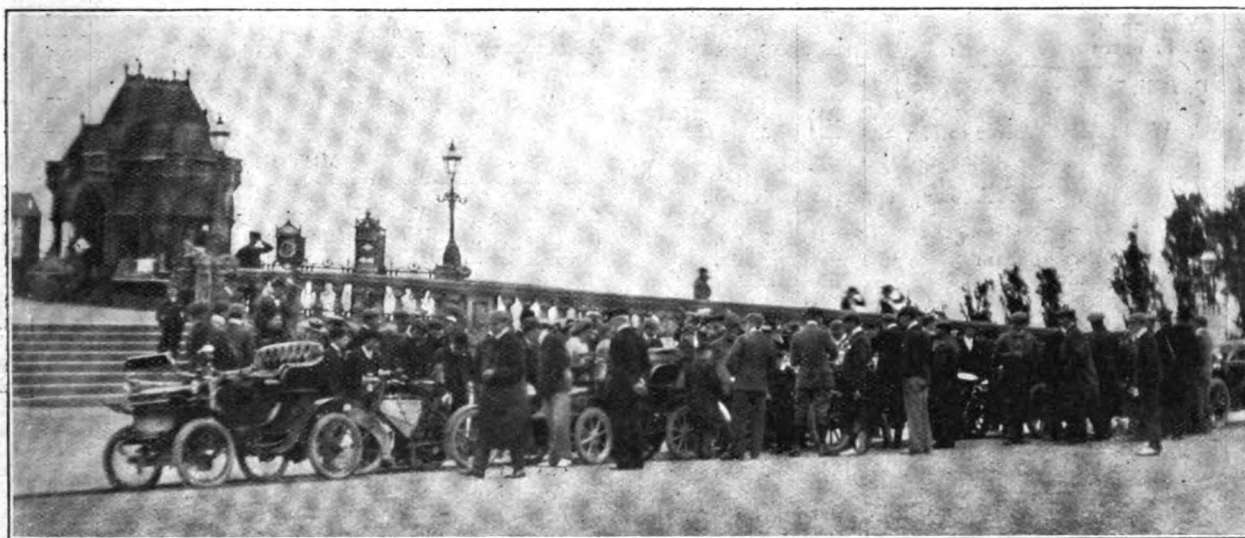
ON Saturday an old man named Joseph Manns was knocked down at Amesbury by Lord Wimborne's motor-car and killed. Captain Guest, Lord Wimborne's son, and another officer stationed at Bulford Camp, were the occupants of the car at the time of the accident. A coroner's jury on Saturday night returned a verdict of accidental death, and exonerated the driver, Frederick Long, from blame.

REFUSING TO STOP.

W. CREYKE, of Oxford, was fined £3 at Banbury last week for refusing to stop his motor-car when requested by a farmer, who was driving a restive horse, on the Oxford road. Defendant was driving at twenty-five miles an hour, and said he never saw complainant hold up his hand.

A NOVICE'S EXPERIENCE.

AT the Mansion House on Monday, Albert Tucker was charged with being drunk and driving a motor-car to the common danger in the



The Meet of the Lincolnshire Automobile Club at Skegness.

in the engine tested was carburetted alcohol; the mean pressure is stated by M. Hospitalier to have been 61.8 lb. per square inch. No doubt petrol may yield a somewhat higher mean pressure, but brake trials show that the gain is not very great. In a recent issue of the *Motor-Car Journal* we find a table giving the dimensions and nominal horse-power of a large number of motor-car engines by different leading makers. The differences are extraordinary, the maximum piston displacement allowed per nominal horse-power being nearly two and a half times as much as the smallest. The average piston displacement (reckoning out-strokes only) is 173 litres per nominal horse-power per minute, which corresponds to a mean pressure of 75 lbs. per square inch in the cylinders. With the highest rated engine the mean pressure would be 115 lb. per square inch, a figure which, for reasons stated above, we are by no means inclined to accept. M. Hospitalier, who has experimented a good deal with motors of this type, suggests that 200 litres piston displacement (out-strokes only) should be allowed per nominal horse-power, and the mean pressure corresponding to this is about 65 lb. per square inch.—"Engineering."

PERSONAL INJURIES.

AT Leeds, last week, before Mr. Justice Grantham and a special jury, the case of "Greaves v. Whitaker" was heard. This was an action to recover damages for personal injuries sustained by the plaintiff owing to the alleged negligence of the defendant in driving a motor-car. Mr. E. Tindal Atkinson, K.C., and Mr. A. P. Longstaffe appeared for the plaintiff, a lady, 54 years of age, living in Leeds; the defendant, Mr. Thomas Whitaker, of Newlay, near Leeds, being represented by Mr. Macaskie, K.C., and Mr. Bairstow. It seems that the plaintiff was, on December 27th last, crossing the Kirkstall Road, in Leeds, when she was knocked down by a motor-car, which was being driven by the defendant,

Minorities. When taken into custody prisoner said it was the first time he had ever driven a motor-car. The Alderman said the prisoner's conduct was most reprehensible, and he might have seriously injured half-a-dozen people. He would have to pay a fine of 40s. or go to prison for one month.

CLUB NEWS.

LINCOLNSHIRE.

THE Lincolnshire Automobile Club, undismayed by the ill-success of last year's meet at Skegness, when it rained heavily, had another meet at this popular resort on Saturday last, but the weather was again very unfavourable, a heavy gale having to be encountered. The strong wind, however, dried the roads, so that the going was not so bad, and a fair number of members turned up from different parts of the large county. The members met at the Pier Hotel, and "parked" their cars opposite, at the entrance to the pier. Tea was afterwards partaken of at the Pier Hotel. Some of the members stayed the week end, the others leaving at about 6 o'clock.

POLICE TRAPS.

ON the Christchurch-Lyndhurst road is a measured 220 yards; the police taking their mark from a bend in the road, and declaring that the result is accurate.

THERE are several traps on the London to Basingstoke and Salisbury roads. Near the fifty-fourth milestone at Deane Gate is a measured 200 yards with constables in plain clothes and mounted on bicycles. Another trap is at Laverstoke and Freefolk, which is worked from behind a building, and a third trap in the district is at Whitchurch, on the Andover side.

FURIOUS DRIVING CASES.

MOTOR-CARS.

COURT.	DEFENDANT.	ALLEGED SPEED, M. P. H.	RESULT.
Llandaff.....	F. W. Menders	—	£1, etc.
Fareham	C. A. Pearson, London	—	£10.
"	F. Fogarty (driver to Mr. Sievier)	33	£10.
Cupar	J. B. Greig, Earlsferry	—	Adjourned.
Ware	S. F. Edge, Regent St., W.	22	£3, etc.
"	H. Evans, Hackney	—	£2, etc.
Cambridge ...	G. Whitehead	—	£5, etc.
Basingstoke ..	F. W. Polehampton, Malmesbury	21	£3, etc.
Brentford ...	J. W. Dew, Kensington	—	£10.
"	W. Poole, Hornsey	—	20s., etc.
St. Neots.....	R. A. Yule, Sydenham	27	£8.
"	J. B. Wells, London	21	£6.
"	M. Mayew (driver to Lord Westbury)	22	£6.
"	E. A. Illingworth, Bradford	22	£7.
"	N. G. Jackson	20	£5.
Berwick	Sergt. Major Robertson, Lothians Yeomanry	—	£2 10s. etc.
Whittesley (Cams.)	A. F. Yarrow, Blackheath	—	£3, etc.
Windsor	D. Ball, London	22	£5.
"	J. Fletcher, East Molesey	22	£5.
Warrington ..	C. W. Pruslow (driver to Mr. H. Dia)	—	£5.
Windsor	C. Sibert, Hull	21	£5, etc.
Conway	H. Buckley, Mitchelstown, co. Cork	—	£10, etc.
Chertsey	T. Williams, Byfleet	23	£1, etc.
"	B. Carter, Twickenham	23	£2, etc.
"	E. Oney, London	24	£3, etc.
"	W. Hutchings, Woking	18	£1.
"	R. E. Bickerston, London	17	£3, etc.
Arundel	A. F. Kent (driver to Maj. Turner)	—	£3, etc.
"	Capt. Homfrey, Hove	—	£3, etc.
"	G. Thursby, Salisbury	29	£3, etc.
"	V. Lee, Flintshire	28	£6, etc.
"	G. Hennessey, Haywards Heath	30	£6, etc.
"	D. A. Baker, London	28	£6, etc.
"	C. H. Elmslo, London	29	£6, etc.
"	E. Sclafer, Hove	31	£8, etc.
"	W. Taylor, East Peckham	23	£5, etc.
"	W. Moore, Portslade	—	Adjourned.
Steving	H. Coppin	18	£4, etc.
"	C. A. Chaplin	21	£5, etc.
"	F. H. Lewis	30	£10, etc.
"	F. Nainby, Chelsea	19	£3 6s.
York.....	W. Pilley, Calverley, Leeds	21	£5, etc.
"	H. Coolie, Leeds	22	£3, etc.
"	J. Burgess, York	22	£5, etc.
"	F. Dunbar, London	22	£4, etc.
Woking	L. Rawlinson, Wilton	21	£2, etc.
Kingston	A. Foster, St. James's, W.	—	£3.
"	H. Syme, Hampstead	—	Adjourned.
Godstone	W. Seamer	31	£3.
Brentford ...	B. Rickman, London, W.	28	£3.
"	H. Beddington, London, W.	21	£10.
"	A. W. Croft, London, W.	21	£10.
"	G. Cutt, Cookham	21	£10.
Uckfield	S. Girling, Birmingham	23	£6, etc.
"	C. Swinton, London, S.W.	28	£3, etc.
"	W. Woodham, Surbiton	22	£2, etc.
"	W. Seamer, Aldershot	28	£6, etc.
"	S. Noakes, Croydon	30	£5, etc.
Kirkham	E. Broadbent	16	10s., etc.
Grantham ...	H. Johnson, London, W.	23	£3, etc.
"	G. Sarera, London, W.	19	£3, etc.
"	G. M'Euan, London, W.	20	£3, etc.
"	B. Gornihalki, Hampstead	25	£5, etc.
Towyn	Col. Williamson, South Staffs. Regt.	—	Dismissed.
"	Capt. Boote, North Staffs. Regt.	—	Dismissed.
Little Bowden	O. Harrou, Coventry	18	£2.
Mortlake.....	S. Girling, Birmingham	21	£5, etc.
Worthing ...	A. Good	20	£3.

FURIOUS DRIVING CASES—(continued).

MOTOR-CARS—(continued).

London, Marlborough St.	S. McBride, London, W.	—	40s., etc.
"	F. Carter, London, W.	—	40s., etc.
"	A. Hedon, Westminster	—	40s., etc.
"	Mrs. S. F. Edge, London, W.	—	40s.
"	R. Browne, Kensington	—	40s.
"	P. Denner, Haddington	—	40s.
"	W. Banks, St. Leonards	—	40s.
"	G. Woolridge, Birmingham	—	40s.
Islington	H. Woodman, Holloway	—	20s., etc.
Swainsthorpe	W. C. Crawshaw, Hingham	—	£1, etc.
Buxton	F. Collins, Nottingham	—	£3, etc.
Christchurch	G. M. Robins, Kinson	19	£5, etc.
Southampton	J. L. White, Cowes	22	£1.
Windsor	C. Liebert	—	£10.
Wokingham	F. B. Smythe	20	£5, etc.
"	Dr. Paterson, Ascot	21	£5, etc.
"	Mrs. Gausson, Hatfield	19	£5, etc.
"	A. Rose, Regent's Park	25	£10, etc.
"	W. G. Davies, Greenwich	22	£5, etc.
"	H. T. Watson, London	19	£5, etc.
"	H. Lindermere, Lambourne	27	£10, etc.
"	C. Davis, Clapham	—	£2, etc.
"	J. A. Petro, London, W.	21	£7, etc.
Tonbridge ...	— Smith, Windsor	—	40s., etc.
"	— Windser, Windsor	—	40s., etc.
"	— Cooper, Bexhill	—	40s., etc.
"	— Green, London	—	40s., etc.
Henley	C. Thompson, Maida Vale, W.	24	£3, etc.
Greenwich ...	E. Fontaine, Kensington	—	£3.
"	R. Lucas, Westcombe Hill	—	£3.

MOTOR-CYCLES.

Manchester...	W. A. Potter, Didsbury	—	20s., etc.
Cardiff ...	J. Freedman, Cardiff	—	40s., etc.
Aylesbury ...	H. Browning, Aylesbury	19	15s.
Kirkham.....	E. W. Brooks	15	10s., etc.
Arundel	W. Farley, Shoreham	22	£2, etc.
Steving	F. Watkin	17	£1, etc.
York	J. Butler, Leeds	19	Adjourned.
Christchurch	H. Hodges, Christchurch	25	£3.
Wokingham	B. Townsend, Aldershot	20	£2, etc.
"	R. B. Bowley, Swindon	20	£2, etc.
"	K. Bruce, Slough	—	£2, etc.
Windsor	J. Studly	22	£3.
"	L. Jagon	24	£3.
"	C. Brett, Westminster	24	£5.
Woking	W. Howard, Addlestone	13	£1.
"	H. Howard, Addlestone	—	£1.
"	W. Adkins, Chobham	18	£1.
"	F. Spencer, Woking	18	£1.

Where no alleged speed is given it is understood to be above the legal limit.

FINES amounting to £51, exclusive of costs, were inflicted on motorists at Arundel on Monday.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, AUGUST 29, 1903.

[No. 234.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



MOTORISTS must be on the look-out if they intend to steer their vehicles into a calmer haven than that in which they have been of late. Elsewhere in the present issue we print the full text of the Motor Car Act, and would suggest its serious study by every motorist. The Local Government Board have powers wider even than the 16-ft. road in respect of the closing of roadways to automobile traffic, and in Scotland there will be no appeal unless the unlucky motorist is fined £10 or more. The Act must now be accepted as one of the ills from which there is no escape, and motorists will have to make the best of a bad job.

An "Act" of Discouragement.

MR. STAPLEE FIRTH, in his letter in our correspondence columns, demurs to the statement made last week that the blame for the present unfortunate legislative position must be laid at the doors of the A.C.G.B.I., and then writes as though our reference was solely confined to the speed limit. We recognise that the Club was sound on this latter point—sounder even than its Parliamentary champions. What we did say was that in fostering the earlier agitation for legislation the Club was unnecessarily bringing the question to the front. Had motorists lain low the matter would probably have been postponed for a season.

The 16 feet Clause.

It is dawning upon motorists generally that one of the worst clauses of the Motor Car Act is, as we pointed out two weeks ago, that which gives the Local Government Board power to close any roads of a width less than 16 ft. to motor-cars. This may prove an inconvenience and hardship to motorists on tour, prohibiting them from many of the most delightful spots in the country, and, in fact, closing half the land from their vision. Of course, everything depends on the view taken of the matter by the central authorities. We hope they will interpret their duties in a liberal and reasonable spirit; but a note of warning is necessary to motorists to be exceptionally careful during the next few months, so that the wrath of local authorities may not be aroused and the central office incited to the closure of roads unnecessarily.

The Ten Miles Limit.

THE Public Control Committee of the London County Council is being asked to receive a deputation from the automobile trade with regard to the suggested restriction of the speed of motor-cars in the County of London to ten miles per hour. Other vehicles are allowed greater latitude in this respect. As has been conclusively demonstrated, the power of control over motor-vehicles is so absolute that at the (maximum legal) speed of twenty miles per hour, where traffic permits, they are more under control and less dangerous than horse-drawn vehicles at twelve miles per hour, which speed is

often exceeded even in so frequented a thoroughfare as Victoria Street, Westminster, in the middle of the day. It is impossible for either the driver or an observer to estimate exactly the speed of a vehicle, so that in effect, in order to avoid incurring the danger of the heavy penalties imposed for a technical breach of this speed regulation, motor-vehicles would be compelled to proceed so slowly as to frequently become an absolute obstruction. At slow speeds, too, the noise is greatly increased. These and other points have already been brought to the notice of the Council, and it is to be hoped that its Public Control Committee will receive the proposed deputation.

Legal Police Tactics.

THE pronouncement of the Attorney General in the recent debate on the Motor-Cars Act that it was illegal for a constable in private clothes to attempt to stop automobilists, has resulted in the presence of the constables now being on duty in their uniforms. In a ride to Frensham, last week-end, constables were largely in evidence, and very miserable they looked, stationary on point duty. At Ripley there were two, one at each end of the village, and they were very conspicuous with their white gloves. On the Fair Mile there was one in the centre and so all along the route, but we understand very few captures were made. The ride to Frensham is a charming one and can be varied almost indefinitely. The roads were a trifle dusty and the views over Merrow Downs were very lovely, the hills standing out sharp and clear, a sign of rain in the near future. At Frensham there is the Pond Hotel, a very comfortable place, while at the Hut Hotel, Wisley, belonging to the Surrey Public House Trust, first-class accommodation at reasonable charges can always be depended upon. It is a charming "pull up" here, and facing the lake, it is interesting to sit and watch the numerous motor-cyclists and cars pass.

An Artist Motorist.

ON another page we reproduce an interesting photograph of the well-known artist, Professor Hubert von Herkomer, on his 10-h.p. Panhard, taken outside his house at Bushey. The Professor, who is a member of the A.C.G.B.I. and the German and Bavarian Automobile Clubs, is at present holidaying in Bavaria, and writes that "Although many of the roads leave much to be desired, Southern Bavaria is a glorious country for motoring. The people are friendly, and good inns are everywhere."

The Herkomer Touring Competition Trophy.

NEEDLESS to say Professor Herkomer is an enthusiastic motorist, and has just given a noteworthy proof of this by offering, through Professor Poehlmann, the President, to give a trophy of the value of £500 to the Bavarian Club under somewhat the same conditions as Mr. J. Gordon Bennett presented his now famous cup to the A.C.F. There is this difference, however, that while the Gordon Bennett cup is for a race, the "Herkomer prize of the Bavarian Automobile Club," as it is to be known, is for an international competition of touring cars, the details of which have yet to be arranged.

Park Regulations in Glasgow.

THE Parks Committee have recommended the Glasgow Corporation to make the following by-law regulating the use of motor vehicles in the parks, the penalty for contravention being £5 for each offence:—Except on the public streets in Glasgow Green, known as King's Drive and King's Bridge, no vehicle of any description propelled by steam, gas, oil, electricity, or other mechanical power, shall be used or driven in any park (including Glasgow Green), recreation ground, or open space, except on the roads marked as carriage drives, and on these only between sunrise (or in the case of parks the carriage-drive gates of which are closed at night and not open till after sunrise, the opening of these gates in the morning) and 2 p.m., and no such vehicle shall be used or driven on any portion of any carriage drive oftener than once in 15 minutes. The speed must not exceed eight miles an hour. Alarm bells or other means of giving audible and sufficient warning of the approach or position of the vehicle must be used when necessary to prevent risk or accident. In foggy or dark weather the vehicles must also be provided with efficient lights. The vehicles must be either hackney, job, or private carriages.



Capt. J. A. Cole, Chairman of the Lincolnshire Automobile Club.

Motors v. Horses.

MESSRS. McNAMARA AND CO., who are the Post Office contractors for London, are trying an experiment with a motor-van, and according to the chairman at the meeting of the shareholders just held, it has so far proved satisfactory. They must, however, have an extended trial under the varying climatic influences of this country before they will express an opinion as to the practicability of utilising motors for this purpose on an extensive scale. The points they have principally to consider are reliability and cost of working and maintenance. Whatever be the result of this experiment, they will have gained knowledge and experience which the directors will be able to turn to account to meet the wishes of customers requiring motors in place of horse-drawn vans. But the cheapest form of traction for a free vehicle is the horse, according to this authority.

The Useful 'Bus.

REFERRING to the various forms of vehicles as affecting a solution of the traffic problem, the chairman of the London General Omnibus Company (Alderman J. Pound) has just told the shareholders of that concern that no other form of street traction was known which in practice would carry such vast numbers of passengers with so little congestion as an omnibus. Considerably over a million people were carried every day by London omnibuses, and any point of congestion of traffic where the public was served would show to an impartial man the fact that the vehicle which actually carried the largest number of passengers to the least hindrance of other traffic was the much maligned omnibus. As to whether the London omnibus was going to remain a horsedrawn vehicle, he could not say. At present, motor-omnibuses had been delivered to them, and, while the authorities were deciding if they would license them, the company was testing them in various ways. With regard to motors, the two main points to consider were safety and economy of working. At the present time the company's position was such that they could profitably adopt motors, but they must first be satisfied that motors would carry the public safely, and would be worked at least as economically as their present vehicles.

Litter on the Highway.

A CASE of interest to motorists has been heard at Wilmslow, a Warford farmer being summoned under the Cheshire Council's new by-law respecting hedge cuttings on the highway. The police found that cuttings likely to cause annoyance and danger to users of the road had been left for a longer period than one hour after sunset. Defendant was fined 5s. We welcome such action on the part of the police, not in any vindictive spirit, but as proving to the public that the hedges and lanes of the country must be kept in order. Heaps of stones are frequently left in dangerous places on the highway by road menders, and a campaign in that direction would also be of service to users of the road.

Trees and the Width of Roads.

A SOMEWHAT similar question arose at the quarterly meeting of the Roads and Bridges Committee of the East Suffolk County Council. There has been alleged obstruction of the main road from Lowestoft to Beccles by trees on the Hon. A. J. Mulholland's estate, the clerk reporting that there were two oak trees in a live fence. The average width of the road was 24 ft., and in one case a tree reduced the width to 20 ft., and in the other to 22 ft. The Chairman said he understood that these two trees had been removed. The surveyor said he was unaware of it. Mr. Mobbs remarked that there had been a tree or two cut down. The surveyor was instructed to view the spot again and report. In view of the new legislation this reduction of the width of the highway by trees is a serious matter to motorists.

Another Royal Motorist.

ONE by one the crowned heads of Europe are joining the ranks of automobilists. Hitherto motoring has made relatively small progress in Portugal, but now that the King has entered the ranks of motorists a great impetus is likely to be given to the movement in that country. Dom Carlos's choice has fallen on a 15-h.p. C.G.V. car, of which we give an illustration on another page of the present issue. Messrs. Evart-Hall, the English agents, inform us that the vehicle is one of the new 15-h.p. cars, with four steel cylinders and mechanical inlet valves, and is the first one of the type delivered. The chassis, which is extra long, is fitted with a special touring body designed and built by Messrs. Muhlbacher, of Paris, and seating eight persons. It is beautifully upholstered in dark tufted leather, fitted with glass wind shields and curtains. A feature of the body are the two revolving seats in the side; these run on ball bearings, and persons seated in them can

either face towards the front of the car or turn round and converse with persons seated in the back of the vehicle.

Motor Hansoms.

THE motor-hansom shown in the illustration on page 501 is one of those to be shortly placed on the streets of London by the London Express Motor Service, Ltd. The driver sits in advance of the passengers, but somewhat lower and to one side, so that their view is not obstructed. The dimensions of the cab itself are somewhat larger than in the ordinary hansom, while an additional folding seat is fixed alongside the driver which can be adjusted and used for a third passenger when required. The glass front is fixed with a spring attachment, and can be operated by the passenger. A distance indicator is placed inside the cab, so that the fare can see precisely the distance travelled. Luggage in the shape of portmanteaux can be carried in the boot at the rear of the body and under the seat. The engines used are 12-h.p. double cylinder Aster, governed and slow running, the power is transmitted through a Panhard type of gear to a cardan driven axle.

Cab and Motor.

At Llandudno two cases have just been heard on the same day which reveal such an unusual state of affairs that it deserves comment. A cab driver was charged with furious driving to the public danger. He was fined 20s. and costs. The next case heard at the same court was that of a motor-car driver summoned for a similar offence. He was fined 10s. and costs. Evidently the Welsh magistrates recognise the proportion of things.

The Midland Hill Climb.

At length the official result of the hill climbing competition organised by the Midland Automobile Club on Sun Rising Hill is to hand, and Mr. Cecil Edge has been awarded the President's Cup. The next four places were taken by Messrs. J. V. Pugh, A. Millership, A. E. Crowdy, and G. Iden respectively. Some discussion has arisen with regard to the formula adopted in connection with the event, and the letter



One of the Great Western Railway Company's Public Service Cars leaving Helston for the Lizard. There are two cars on the service; they can each accommodate twenty-two passengers, and are of the standard 16-h.p. four-cylinder Milnes-Daimler type. (Photo by) (Gilson & Sons, Penzance.)

Great care has been exercised in the distribution of the weight, in order to reduce any tendency of side slip to a minimum. The vehicles are geared low, to give hill-climbing power, and to remove the possibility of an excess of speed on the part of the drivers; the limit of speed being about twenty-six miles an hour on the level.

At an Agricultural Show.

THE gymkhana held under the auspices of the Yorkshire Club and the Horsforth Agricultural Society on Monday proved a sorry spectacle for horse breeders, and that an agricultural society should have had to enlist the services of automobiles to draw a crowd must have made the farmers weep. Unfortunately the elements were watery, with the result that interest in the competitions was dampened considerably. Perhaps the most interesting contest was that in which the prizes went to those who drove at the slowest speed without actually stopping their cars. Mr. A. Farnell was the last competitor to reach the finishing post with a 5-h.p. Oldsmobile, and was awarded the first prize, Mr. W. R. Booth being second with a 6-h.p. Prunel. The North of England Motor Company won the bending race for motor-carriages, with Mr. W. R. Booth next.

from Mr. T. C. Aveling on another page opens up an interesting question.

An Early Steam Car.

THE credit of having produced in the early part of last century a steam coach, excelling in commodiousness and luxuriousness the horse-drawn stage coaches and travelling carriages of the time, is due, it would appear, to a Mr. W. H. James, who, in conjunction with Sir James Anderson, Bart., constructed and ran about 1829 the road coach illustrated on page 498. This commodious vehicle was driven by two separate engines, each comprising a pair of horizontal cylinders, one engine being allotted to the near side driving wheel, and the other to the off side, the axle being made in two distinct portions. Indeed, it was a twin-carriage both in regard to engine and boiler, the advantages of which were demonstrated on one occasion when, in running through Epping Forest, one of the boiler tubes—which were nothing more nor less than ordinary gas pipes—split, and put out one of the fires; with the remaining boiler and engine the carriage returned home at the rate of seven miles an hour, carrying a load of more than twenty passengers. It was a very heavy and substantially built vehicle, weighing, with its complement of passengers, something like seven tons.

The G.N.R. Converted.

THE Great Northern Railway Company is the latest of the British railways to recognise the value of the motor-car on a track. A car of standard gauge is now being constructed from the designs of Mr. J. D. Roots to carry thirty passengers. It will be propelled by a Roots oil engine of 40-h.p., and there will be four speeds in either direction. A cab will be provided at each end for the driver, so that the car may be driven at either end. In the first car the top speed will not be high; as a matter of fact, about 35 miles an hour. The ordinary petroleum oil, paraffin, or kerosine will be used, as in the Roots engines for road vehicles. The engines and the rest of the propelling mechanism will be manufactured by Messrs. Sir W. G. Armstrong, Whitworth and Company, Ltd.

Mails by Motor.

THE election in Argyllshire has again drawn attention to the varied merits of the automobile. The Liberal candidate relied to a great extent on his motor-car in canvassing the constituency. Occasionally he was able to render assistance to others, notably when the Clachan mail coach stuck in the mud. By Mr. Ainsworth's good nature the mails were transferred to the motor-car, together with several passengers, and they were conveyed to Tarbert. For once the mails reached Tarbert in advance of schedule time.

Canals for Automobiles.

THE suggestion that motor roads should be provided for motorists has led a correspondent of the London "Echo" to recommend that the canals should be drained and adapted for the purpose of automobile traffic. The railway companies and the location of the canals are two difficulties in the way of the actual operation of the idea, which has little to commend it. Among practical men the idea of specially constructed motor roads does not appear very attractive, and Sir Fortescue Flannery, M.P., is the only one of a dozen M.P.'s who has written to our contemporary in support of the scheme. Even he gives a guarded approval of the plan, and does not think that at present there are sufficient motors in existence to justify the establishment of special roads.

No Escape from License Fees.

THE new legislation will prove of utility to the revenue authorities, and from the list of registrations the latter will be able to ascertain the owners of cars. The result will be that few will escape the payment of licenses. Recent regulations in the United States have given English automobilists a foretaste of what may happen here. Fully two thousand New Yorkers own New Jersey licenses for automobiles. As these vehicles represent an average of fifteen hundred dollars each, the Secretary of State called attention to the fact that assessors of personal property had not taken advantage of the records in his office to get names and addresses of automobile owners, so as to assess these amounts in their personality. Till then no assessors excepting the Board of East Orange had thought of this method of increasing the rateable value. These assessors went to Trenton recently and secured the names of every automobile owner located in that municipality, and, as the affidavits attached to application for licence disclose the value of the cars, it was a very easy matter to make correct assessments.

Oil on Roads.

It is generally agreed that the reason some roads treated with oil have turned out well and others ill is due to the differing bases of oils. The "San Francisco Chronicle," with the experience of California roads in view, says:—The crude oil used on the London and Aldershot road proves to have had a paraffin base, which in itself explains the cause of its failure. Everything depends upon the base of the oil used. If

paraffin is the base nothing but failure can be expected, for when the volatile substances contained in the crude petroleum evaporate the residuum left is a brittle, greasy substance, which affords absolutely no protection to the roadway. The secret of the success of the oil treatment of roads in California lies in the fact that American crude petroleum possesses an asphalt base, which leaves an asphalt covering on the surface of the roadway after the volatile elements have been evaporated by solar action. This asphalt covering is as complete a protection to the roadway as if its surface were paved with a coating of bituminous rock. And every successive oiling received in the treatment thickens the asphalt shield of the crown of the road, more thoroughly protecting the underlying foundation from the action of water, let it rain ever so hard.

Fines on Motorists.

DURING the month of August we have recorded no less than 399 cases of alleged furious driving of automobiles, 343 relating to motor-cars, and 56 to motor-cycles. Of these eighteen of the former and three of the latter were dismissed, while one was withdrawn by the police. The total amount of fines imposed was £1,487 9s.—a substantial gain to the county funds. The average fine imposed upon drivers of cars was £4 5s. 6d., and upon riders of motor-cycles £1 15s.—a fairly heavy addition to the ordinary expenses of automobilism. Even the amounts thus totalled do not represent all the cases heard at the courts, but only those of which we have been able to obtain prompt and authentic particulars and find space for their publication. When the new Motor-Car Act comes into operation at the beginning of next year the county funds will be largely augmented, for the great majority of the fines at present imposed are in cases when the drivers have been alleged to have only exceeded the new legal limit by a few miles.

An American Endurance Trial.

THE most thorough endurance test of automobiles ever held in America will take place in October over roads from New York to Pittsburg, and under the auspices of the National Association of Automobile Manufacturers. The classification of the vehicles will be according to selling price instead of by weight as formerly. The contest will not be one of speed, it being the aim to make the run as nearly as possible under ordinary touring conditions. Only standard motor vehicles of stock pattern, regularly catalogued and offered for sale, will be admitted to the test. Six thousand points will be the maximum score. Every stop en route will be penalised at the rate of one point for each minute lost excepting those stops called for by the schedule and those required by the law or for the safety of persons in the road. One thousand points will be awarded for weight, and every vehicle to attain it must carry 30 per cent. of its own weight. Points will also be awarded on the following basis:—The condition of each competing car at the finish of the test. The cost of repairs to each car and the time required to make them. The efficiency of brakes. The hill-climbing capacity of each car.

ON Tuesday Mr. Albert House held a sale of motor-cars on the premises of the Bradford Motor-Car Company.

THE Firefly Motor Co. have arranged an auction sale of motor-cars and accessories at their garage, at Croydon, for the 5th prox.

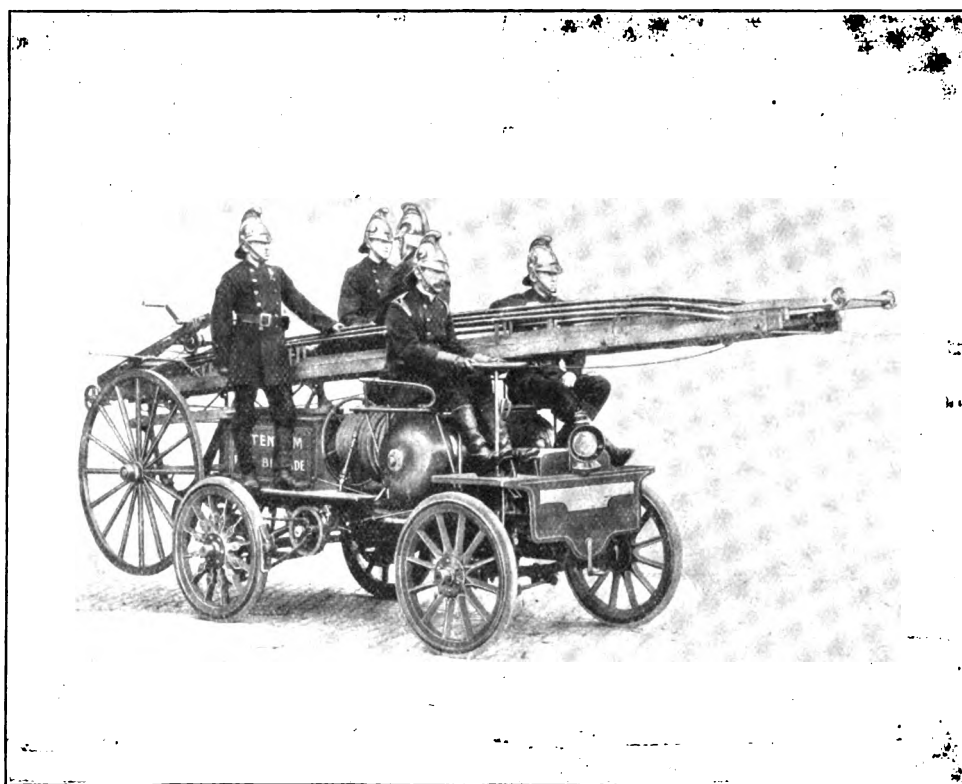
MESSRS. B. THOMPSON AND COMPANY, of Frome, are introducing a four-seated 9-h.p. "West Country" car. One, built to the order of Mr. Walter Case, has just made a trial trip to Cheddar and back again to Frome in good style. It is now nearly four years since Messrs. Thompson and Company became identified with the motor-car industry.

IN the Legislative Assembly of New South Wales the adjournment of the House was recently moved by Mr. E. M. Clark, in order to call attention to the "present unsatisfactory administration and control of the metropolitan street traffic."

THE TOTTENHAM MOTOR CHEMICAL FIRE ENGINE.

THE new Motor Fire Station and Depot at Tottenham, which was opened on June 25th, does not mark an era in the Fire Brigade in Tottenham, being merely an extension of the District Council's excellent brigade, owing to the enormously increased population. The brigade was taken over by the Council about ten and a half years ago, prior to which it was purely a voluntary brigade on the most primitive basis. The inhabitants of Tottenham may congratulate themselves upon the fact that it is now amongst the best equipped and one of the most efficient in the kingdom. The oil-fuel motor steam fire engine which has been placed in the station is one of the "Fire King" pattern, built by Messrs. Merryweather and Sons. It is fired by means of vaporised oil, and is capable of pumping three hundred and twenty gallons of water per minute. Standing in the

ing a hose tender, chemical fire engine, fire escape and motor in one car. The vehicle has been designed for the special purpose of combining all the latest and most scientific improvements intended to save life or extinguish fire. It is fitted with a 20-h.p. petrol motor and with a change speed gear giving three speeds, viz., fifteen, ten and six miles per hour, and a reverse at the latter speed. Specially designed fittings are provided for shipping and unshipping the 50 ft. sliding carriage telescopic escape in a few seconds. The ladders are trussed with steel tubes up each side, thus ensuring a maximum amount of strength with a minimum of weight. By an ingenious device the same hoisting gear and winch which wind up the sliding carriage are used to extend the ladders. The chemical cylinder is of polished copper with gunmetal fittings. It holds sixty gallons, and is fitted with acid bottle and patent apparatus for mixing the liquids. A brass reel carries one hundred and eighty feet of hose for the discharge of the chemical fluid. The hose tender carries three hundred feet of hose. The machine is designed to carry six men besides the driver. It



The New Motor Chemical Engine and Fire Escape.

fire station the engine will be kept, by means of a gas jet, with about five pounds of steam always in the boiler, and on a call being received the vaporised oil can be at once ignited, and in less than a minute and a half it can leave the station to respond to the call. Any speed up to thirty miles an hour can be obtained. On arrival at a fire the driving machinery can be easily thrown out of gear and the pumps put on, so that by the time the hose has been run out and the branchman is ready the engine can immediately commence pumping. The fire can be regulated at will by the engineer, who has it under complete control. The engine carries two cylinders containing thirty-six gallons of oil, or sufficient to last at an ordinary fire for several hours. Two tanks are fitted, one on each side of the boiler, for the storage of water, and a main feed pump works all the time the engine is travelling. There is also an injector placed in a convenient position in case the main feed should at any time fail. The combined motor chemical fire engine, hose tender and fire escape illustrated herewith has also been built by Messrs. Merryweather under the supervision and direction of Superintendent Eddington, of Tottenham, who originated the idea of combin-

may be mentioned that there are no horses kept for Fire Brigade purposes at this station, the stabling provided being for the horses used in road-cleaning, watering, &c., for the Tottenham Council. After the formal opening of the station, trials were made of the new motor fire appliances, which turned out in 20 seconds from a test call, and after a short run both the chemical engine and the steamer were got to work with various jets, and the use of the fire escape for saving life was also demonstrated to the entire satisfaction of those who witnessed it.

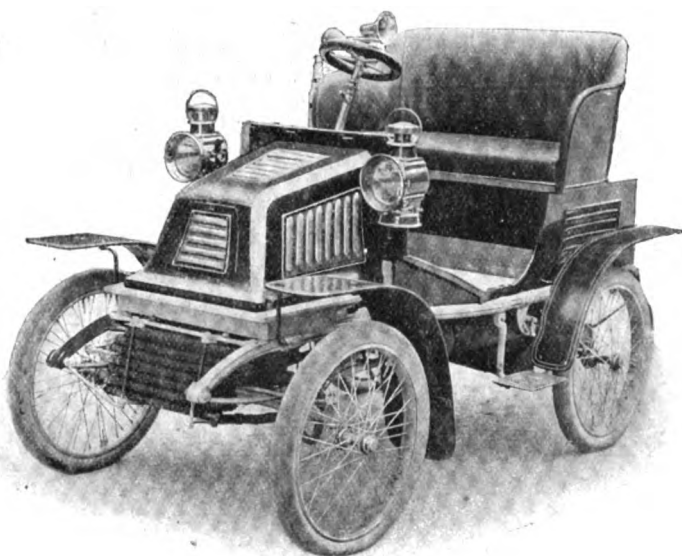
THE Neue Automobil Gesellschaft, of Berlin, is reported to have secured an order for six 10-h.p. public service vehicles for Pietermaritzburg, South Africa.

WITH the view of encouraging the use of electrical motor vehicles, the Edison Electric Illuminating Company, of Boston, U.S.A., is preparing a guide which will contain a road map, showing the best routes from point to point, with a list of all accumulator charging stations within a radius of twenty-five miles from Boston.

THE "CLYDE" LIGHT CAR.

—X—

WE are this week able to give an illustration and a brief description of the latest type of two-seated petrol car made by the Clyde Cycle and Motor Car Co., Ltd., of Leicester. The motive power is supplied by an Aster 6½-h.p. single-cylinder engine, set under a bonnet in the fore part of the frame. The cylinder cooling is effected by pump and radiator, while the usual form of high-tension ignition is adopted. The engine is equipped with a governor acting on the inlet, in conjunction with which is a pedal-operated "accelerator." The motor is so arranged that when the bonnet is raised the valves, pump, commutator, etc., can be examined and adjusted without difficulty. It is started from the right-hand side by a handle at the side of the bonnet. It can easily be started by a lady. The power is conveyed through gear wheels and Renold's silent chain, running on shafts parallel with the rear axle. Ball bearings are fitted to both axles and also to the countershaft, so that there is a minimum loss of power through friction. In addition to a reverse, two forward speeds are provided, which, with the motor running at its maximum rate, gives nine and thirty-seven miles per hour. Any other speed can be obtained down to four miles per hour, by means of the ignition and the governor. Gear changing is effected by a lever at the



side of the car, which is so placed that it does not interfere with free ingress and egress from the vehicle. The friction clutch is made with metal faces. The car is controlled by two pedal levers, one of which actuates the friction clutch, and the other puts on a band brake on a large drum on the countershaft. For emergency, or for holding the car stationary when the driver is out, two back wheel brakes are provided, worked by a lever at the side of the driver. The road wheels are 26 in. diameter, shod with pneumatic tyres. The dimensions of the car are, width over all, 4 ft. 6 in.; length over all, 8 ft. 2 in. The petrol tank is fixed at the rear of the dashboard and holds 2½ gallons. We are informed that the car illustrated has run 105 miles on a consumption of two gallons of petrol.

WE hear that Lord Northampton has placed an order for a Duryea car.

TO-DAY (Saturday) the Kent Automobile Club will hold a hill-climbing competition at Wrotham.

FINDLAY'S CARRIAGE, WAGON, AND MOTOR WORKS COMPANY, LIMITED, has been registered with a capital of £3,500, and registered offices at 190, Great Brunswick Street, Dublin.

CONTINENTAL NOTES.

By "AUTOMAN."

—X—

IN order to reduce the weight, and therefore increase the speed, it has become the custom in kilometre races to take off the brakes and all other parts which can be dispensed with for such a short run. I have even known of the radiator and water tank being taken off, the motor being run for a record kilometre without any cooling arrangements whatever. The competition at Deauville will preclude any such performances, for the engine must not be stopped at the end of the race, but the car must be ready to move off again on the order being given by the judge, nor must the tyres be torn or injured by a too sudden stop. The car must be in good condition in every way after the race. The Baron Piere de Crawhez has offered an £80 cup in connection with the race for the car weighing between 650 and 1,000 kilos. which makes the best time in the speed trials.

THE committee of the German Automobile Club have begun to seriously consider the organisation of the Gordon Bennett race for 1904. It is pretty nearly settled that the race will be run to the north-west of Berlin, in the Grand Duchy of Mecklenburg, where there are magnificent roads through country where the population is very meagre, and where there are few villages on the main roads.

THE summer (if such a title can be given to the series of cold deluges of rain we have had for the last two months) is rapidly passing away, and the latest sign of its recess is the shutting down of the balloon experiences of the Lebaudys. The famous air ship "La Jaune" has been deflated definitely, and the aeronauts are about to set to work on a new model, full of improvements, for 1904.

THE Automobile Club of Avignon proposes to hold a hill-climbing trial at Mont Ventoux between the 20th and 27th of September next. Mont Ventoux is for many reasons an ideal hill for a competition, and quite suitable for becoming the site of the world's championship in motor hill climbing. In the first instance the climb is a long one and covers 21 kilometres (13 miles) of hills averaging 8 per cent. of slope, and with gradients of as much as 13 per cent. One most important feature is that the road leads to nowhere except the summit, where there is a hostelry, and thus the traffic can be completely suspended without interfering with anyone; the sole traffic consists of the 'bus belonging to the hotel.

FROM the Transvaal to the Littoral is a long cry, and the change of scene, of food, of climate, and above all of roads, must be striking to Captain Walker, of the Engineers, who, after spending four years in South Africa, is passing some portion of his well-earned leave in an automobile tour through Europe. His car is well fitted out for all eventualities, down even to a big waterproof sheet fitting over the whole car, and meant to act as a tent in case of emergency.

THE Criterium of one quarter of a litre for motor-cycles is to be held at the Velodrome at the Parc des Princes, over a distance of 100 kilometres, between the 14th and 20th of September. The event is open to any machine whose cylinder or cylinders have a total capacity which does not exceed 250 cubic centimetres, that is to say, one twentieth of a gallon, or nearly half a pint. The capacity is to be calculated according to the volume displaced by one complete stroke of the piston or pistons. No pedalling is to be allowed, and no means of propulsion save the motor; at the same time the competitors may be pushed to start them or to restart them during the race. There will be a double classification—that is to say, individual and by series of three.

CHANTILLY is 63 kilometres (39 miles) from Paris, and a good road out is from the Place de la Concorde to the Rue Royale up to the church of the Madeleine, and then turn to the left in front of the steps of the church and take the Boulevard Malesherbes. Follow it until you are right in front of the church of St. Augustin. Cross over this wide square with the church on the left hand side and a railed-in public garden on the right and turn sharp round to the right at the far side of the garden into a little wood-paved street, the Place de Laborde, which in fifty yards leads to the Rue de Vienne, paved with setts. Here turn sharp to the left up hill and keep on in a straight line across the Place de l'Europe, which is an immense bridge over the railway lines coming out of the Gare St. Lazare. Across the Place de l'Europe in a direct line, take the Rue de Saint Petersburg, still uphill, and into the Place Clichy, which must be crossed nearly opposite the Avenue de Clichy, which is followed right on to the Porte de Clichy, where petrol must be declared to the Octroi. After passing through the gates take the Boulevard National and follow it through Clichy to the River Seine, which is crossed on two bridges. Then in Asnieres take the Rue de Paris into Gennevilliers and continue right on to Epinay, where the

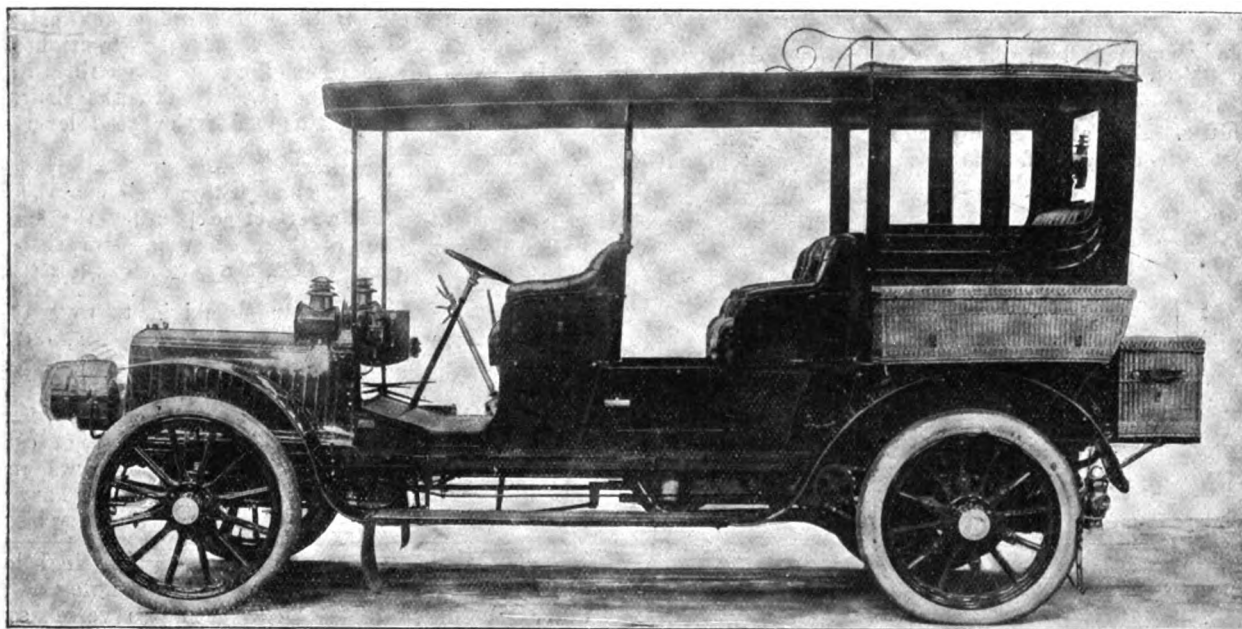
banquet in honour of Germany's success in winning the Gordon Bennett cup, among those present being the Duke Adolphe Frederic of Mecklenburg, Herr Moeller, the Minister of Commerce, the Count de Talleyrand-Perigord, and M. Jenatzy.

THE new clubhouse of the Russian Automobile Club in St. Petersburg was inaugurated on the 8th inst. It is located at No. 30, Galernaja, and comprises a garage and repair shop, which has been put in charge of a French expert.

THE first lady motorist in Berlin presented herself to be examined by an expert as to her capabilities in driving a motor-car through crowded streets, etc., on the 18th inst., and received the police certificate for efficiency.

A RUMOUR is current in Paris that an English syndicate has contracted for the whole output of the new type of Leon Bollée car during the next three years.

MOTOR-CARS are to be largely used in the forthcoming Italian military manoeuvres. A number of cars are to be placed at the



The King of Portugal's 15-h.p. C.G.V. Car. (See page 490.)

country begins. At Epinay ask the way to Engien, and when in front of the lake at Engien take the first turn to the left past the Casino, down a bad road and under a railway bridge. Ask for Soisy, from whence inquire for Montlignon. After passing right through the long winding street in this pretty village, a long climb is made through a lovely wood and down a hill on the other side, with winding, wonderful turns, on to a plain, which is crossed. Under a railway bridge and on to Moiselles, a tiny village, where a sharp turn to the left for about a mile or so brings the traveller to a corner on the worst *pavee* I have ever crossed. Then take the right hand turn towards Viarmes, which is marked on the signpost of a house at the bad corner. On the road to Viarmes is the pretty village of Belloy on the right. Do not pass through it but go straight on down a very steep hill and under a railway bridge into Viarmes, where the route is through the main street, past the church, and on to Royaumont and through the hamlet of Le Lys, where is the forest of the same name. A few miles further on are cross roads, where the right hand road is taken to Gouvieux. In Gouvieux ask the way to Chantilly, which is only a few miles away.

disposal of the principal officers, and it is anticipated that they will prove very valuable in enabling them to keep in close touch with all points of the manoeuvres. It is also announced that the King of Italy will follow the manoeuvres in his motor-car.

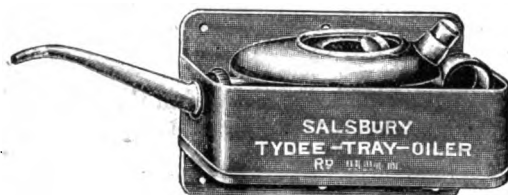
THE Minneapolis Automobile Club has inaugurated a new method of calling attention to abuses in the operation of motor-cars. In future bulletins will be issued from time to time, citing instances of careless driving, without giving the names of the offenders. It is believed that this will impress chauffeurs with the importance of exercising care in operating their vehicles. Occasional Bulletin No. 1, just issued, reads as follows:—This sheet will be issued by the Automobile Club of Minneapolis whenever material accumulates, the dissemination of which would tend to place automobiling on a better basis. Inasmuch as all Minneapolis automobile owners are not members of this organization the widest publicity will be given the information, in the hope of preventing abuses and of enlisting the co-operation of all for the wise protection of all interests. It is believed that the mere mention of some abuse will be the surest method of stopping it, especially as no cases will be cited in these bulletins which are not based upon specific complaints.

ON Saturday last the German Automobile Club held a

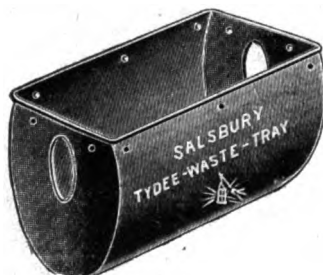
SOME USEFUL NOTES.

It may happen that in lubricating the mechanism or wheels, some of the oil may drop on the tyres, in which case it is necessary to clean them immediately. Though perfectly waterproof, rubber is easily affected by oil or acids, and, if exposed to their action for any length of time, soon becomes totally destroyed. The Continental Co. inform us that it is not always possible to repair covers decomposed by oil; it all depends how far the decomposition has advanced. It is therefore in the interest of the driver himself to take good care that oil or acid does not come in contact with the tyres.

HEREWITH we illustrate two useful little accessories which have recently been introduced by Messrs. Salsbury and Son, Limited. The first is the "Tydee" tray oiler, which, as will be



seen, is a handy and neat fixing made to attach to the dashboard under the engine bonnet; it consists of a tray of such a design that it holds the largely used force-feed oil can securely in position when not in use. The second illustration shows the "Tydee" waste tray; this is made to fit underneath the bonnet in any



convenient position, and is a very handy receptacle for carrying cotton waste, oil rags, etc., used by the mechanic; it obviates these having to be carried anywhere about the car where they would be likely to damage the upholstery or fittings, and ensures them always being to hand when wanted.

SOME gear-boxes are made in which the wheels that move (the sliding sleeve) are the larger ones, that is, the driven shaft and not the driving or clutch shaft; with this type of gear difficulty may be experienced in coming back from third speed to second, and second to first, but it may be easily overcome in the following way: Depress the clutch at the change, and as soon as the wheels touch, let the clutch in, at the same time pulling the speed lever into position. The change will then be effected without any difficulty.

THERE is often considerable doubt as to how the firing cam should be set, so the following simple method may be useful to note. Place the advance spark lever in the centre of its rack, and when it is in this position, the cam should be set to fire when the piston is just at the top of the compression stroke. This method gives an equal range of firing, both before the dead centre and over the dead centre. It will be found that engines vary, according to whether they are high-speed or low-speed engines, and in the case of a high-speed engine, the method above described may be found to set the firing a little late. With a high-speed engine, to set the cam, it is best to place the advance spark lever three-quarters of its rack towards late firing, and then set the cam to fire when the piston is at the top of the compression stroke.

USERS of four-cylinder engines should note that it is not necessary to turn the engine round to get any particular

cylinder on contact. All that is necessary is to connect the commutator brush of the required cylinder to the frame, and contact is made.

To facilitate the setting of the firing and the valves, the flywheels of most four-cylinder engines are marked in the following way. Suppose we turn the flywheel round until the marks are at the top (i.e., in a vertical line with the ground), and we read 1, 4, we know that pistons 1 and 4 are at the top of their stroke, and consequently that if 1 is exhausting, 4 is firing, and vice versa.

THE cranks in the average four-cylinder car are set at 180°, so that 1 and 4 are up together, and 2 and 3 are down together, the order of firing being 1, 3, 4, 2, counting from the radiators.

A GOOD way to carry tools on a car is to have a neat little leather handbag provided with a good lock. If this plan is adopted, spanners and pliers, etc., will not vanish in the mysterious way they do sometimes when the car is out of the owner's hands.

SOME people have been troubled to know why, on some occasions, their gears jump out of mesh. It will usually be found that this occurs on cars in which the clutch-shaft carries the sliding sleeve, and if the sliding sleeve is too tight or too loose a fit upon its square when the clutch is either withdrawn or engaged, the gears may be carried with the shaft. It should be noted that this cannot happen if the speed lever quadrant is fitted with square slots.

SOME motorists, when adjusting their chains, do not seem to realise that there is a correct position for the shackles on the back scroll. The top of these side-plates, or shackles, should always be leaning away from the hollow of the scroll.

EVERY owner of a car should be thoroughly conversant with all the working parts, engine, gear-box, etc., or he may find himself in difficulties in a very short time, as the following note will show. A gentleman who owned a car with a gear box which was the exact copy of a Panhard gear-box, found that the reverse was inclined to stick, and finally did not come free. He did not know how the reverse was worked and was in difficulties, and as there are several people who are rather hazy on the Panhard reverse, a word or two dealing with it may be useful.

THE reversing gear in the Panhard box (single lever control) is designed so that there are no wheels running idly when the other speeds are engaged. The reverse shaft, which carries two pinions, lies alongside of the clutch-shaft, and is kept in its normal position by a spiral spring in one of its bearings. When the change lever is moved back beyond the neutral notch, the draw-bar which shifts the gear moves the reverse shaft against the spring, and by means of the two wheels on the shaft a reverse motion is obtained; as soon as the lever is moved back to the neutral, the reverse shaft goes back to its normal position by the action of the spring.

IT is not often that a piston cracks, but it has happened, and if a case of want of compression should occur, and all the valves, etc., are perfect, remove the cylinder. Then scrape the deposit off the top of the piston, and a crack may be found, the mystery then being solved.

WENTWORTH CASTLE is the destination of to-day's (Saturday) run of the Sheffield Automobile Club.

THE Wolverhampton and District Automobile Club will hold a run to Market Drayton to-day (Saturday).

AN automobile club has lately been formed at Auckland, New Zealand, and already the membership list comprises 43 names.

THE Portuguese Government has granted to the Conde de Vizella for fifteen years the exclusive concession for automobile service on various roads in the districts of Loanda and Lunda, in Portuguese West Africa.

THE EXPERIENCES OF AN IRISH PIONEER MOTORIST.

IN our issue of April 25th last we published a description of the novel electrical vehicle designed by Mr. J. Brown, of Dunmurry, Belfast, well-known in the scientific world as an electrician and to the automobile and cycling world as the inventor of the Viagraph—an instrument for testing the quality of road surfaces. Below we print a letter received from Mr. Brown, who is an enthusiastic motorist, in which he relates some of his experiences with motor-cars:—"I enclose you a photograph of my first motor vehicle—the first modern automobile to enter Ireland. I imported it in March, 1896, having purchased it second-hand from my friend the late M. Doazan of St. Omer, who was a very ardent automobilist. It was one of Serpollet's early types, coke fired, steel tyred, weighed 27 cwt., and was not difficult to keep within the legal limit as to speed. It was very easy to work, and pleasant to ride in once it got under way, but this was a work of time. Its former owner said he could heat up the boiler for a start in forty minutes, but he had a forty-foot flue up the side of his house to get a draught. Of course he left this behind—on the house—when he rode out on the car. I had only a twelve-foot pipe to put on to start the fire, and this took two to three hours to 'warm up.' I had nevertheless a good deal of



The First Modern Motor-Car in Ireland—A Serpollet Imported in 1896.

amusement out of this car, and finally sold it for a few pounds more than it cost me originally. I was anxious to get another car that would not take quite so long to get ready. I have always had a peculiarly strong objection to noise in a car; I want it to 'fold up its tent like the Arab and silently steal away.' In 1897 I therefore made a tour via Glasgow, Keighley, Birmingham, Coventry, to London, but found no car that did not clatter to a quite prohibitive extent. As I could not find what I wanted, I decided to make it. Electricity was the only motive power possible, and after much thought and care the vehicle which you illustrated and described in your issue of April 25th was evolved, my friend Professor Fitzgerald, of Queen's College, Belfast, helping me with what I called the dogged details. The slowness of the car on hills and the trouble of re-charging, however, led me to keep on looking out for a quiet petrol or steam car, flexible in speed and suitable for the rough roads we have to put up with here.

"After much hunting about I developed a feeling that it might be best not to spend a large fraction of £1,000 on a car that would probably be superseded in a year or two, and so finding the Oldsmobile came up to my ideas of quietness in running, flexibility, and also ease on rough roads, I bought one last year, and I do not regret it. At first I had a good deal of trouble, but it was chiefly due to ignorant management, and

a too feeble ignition battery. I send a photo of its progress through the floods recently experienced in Belfast. When not too deep, floods have the advantage that one can hop off on to the footpath, using this as a kind of wharf, while the street boys (who are such a dreadful nuisance when the car is left by itself) cannot get at it."

A NEW ACCUMULATOR.

IN the course of the recent Engineering Conference at the Institution of Civil Engineers, Mr. T. E. Gatehouse gave some particulars of a new cell which had been brought before his notice. The Elieson cell, to which he referred, was a pure Planté cell, and, as constructed up to the present, consisted of five plates, two positive and three negative, weighing altogether 16lbs. The total weight of cell, complete with box and acid, is 22lbs., and it has a capacity of 100 ampere-hours at a 5-hours' duration of discharge. In the Elieson cell the whole plate except the central tube is active surface right through, and being perfectly porous permits free circulation of the electrolyte. This is shown very clearly by the fact that while at a discharge rate of twenty amperes the capacity of the cell is 100 ampere-hours, when the discharge rate is fifty amperes the capacity is still ninety ampere-hours, and even at the high rate of 100 amperes a capacity of seventy-three ampere-



Mr. J. Brown on his Oldsmobile in the Floods at Belfast.

hours is still obtained. In charging the same thing holds good. While most cells on the market take four, five, or more hours to charge, the Elieson cell can be charged easily in from 40 to 45 minutes without any loss of capacity, and with a very high ampere-hour efficiency. A practical test has been made of the Elieson battery in a small car. Twenty-four cells have been put in this vehicle, arranged in two batteries of twelve cells each, in parallel, thus running on twenty-four volts. The cells are invariably charged at about ninety-five amperes, which was the largest current conveniently obtainable. For charging the two batteries are in series. The full charge is about eight B.T.U. This car has been running regularly since Easter, and has frequently had two charges in a day. Some of the principal runs are as follows:—(1) A run was made to Reading with only eighteen cells (two batteries of nine cells each, i.e., eighteen volts). The car was charged there in about an hour, and came back on that charge to London the same day. Distance forty miles each way, two passengers. (2) Another run was made to Reading in 3 hours 25 minutes. As the battery was not nearly discharged, a further run was made of ten miles, and the battery was still not fully discharged. Distance, fifty miles, two passengers. (3) The following day the car was charged in one and a quarter hours, and ran back to London with one passenger in 2 hours 50 minutes.

THE THEORY OF THE SILENCER.

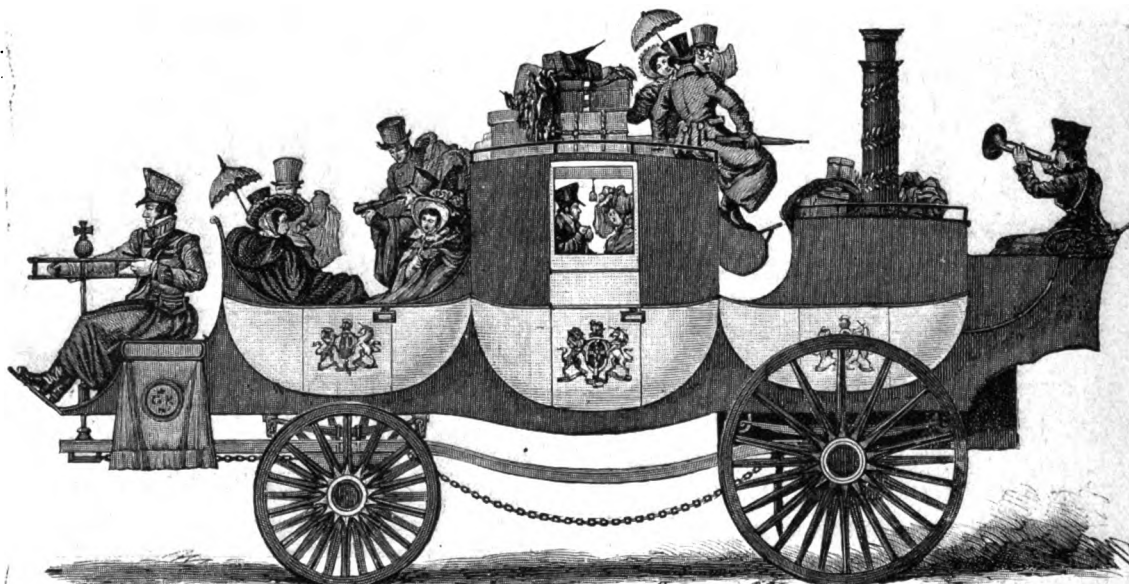
IN the design of a silencer for petrol motors there are three conflicting conditions to be met. The silencer must efficiently deaden the noise of the exhaust; it must not offer any appreciable resistance to the exhaust; and it must be compact. In the actual design, of course, still other factors must be considered, but these conditions are the three which determine the general lines. These requirements, as stated, are conflicting. If, for instance, space and weight were no consideration on a motor-car, it would be comparatively easy to devise a silencer thoroughly muffling the exhaust and offering no appreciable back pressure. But the above are very weighty considerations, and the silencer must, therefore, be compact.

On the other hand, the two remaining requirements lead also in opposite directions. Thus a gain in the efficiency of silencing can usually be secured if a sacrifice is made in the matter of back pressure. It must not be inferred from this, however, that in silencers muffling efficiency and back pressure are

less abruptly from a small pipe into a large pressureless chamber.

The expansion chamber is usually divided into a number of compartments, the number of these being entirely dependent upon the form of construction employed. If the silencer is of the sectional type, built up of a number of similar parts, there are usually quite a number of compartments, while in other forms of construction the number is less. One advantage of multi-compartment silencers is that in case of an explosion in the silencer, which is not an infrequent occurrence, the latter is less liable to be seriously damaged.

In this class of exhaust box the form of the final outlet where the gases pass to the atmosphere becomes of less importance, and often consists of a plain circular opening, provided with a short nipple. In silencers in which the expansion chamber has only one or two compartments the form of the final outlet is of the greatest importance, as the retarding effect of all the communicating passages in a multi-compartment silencer must be produced here by this single passage. The



The James-Anderson Steam Omnibus, built about 1829. (See page 491.)

necessarily reciprocal quantities. This is only the case so long as the general features of design remain identical. It is a well-known fact that in the production of sound the action of edges plays an important role. Shrill, penetrating sounds are usually produced by an air column striking the sharp edge of a solid body, while rounded edges will admit of a column of air or gas being drawn into or discharged from a passage with little or no noise.

The silencer always contains an expansion chamber, which allows the charge of burnt gas to expand and the pressure to fall so that it issues from the discharge orifices at a low pressure. The manner in which the exhaust pipe opens into this expansion chamber has considerable influence upon the silencing efficiency. If the chamber be cylindrical in form, for instance, and the exhaust pipe lead into it centrally through one of the heads, cutting off sharp with the inner face of this head, then considerable noise is produced at this entrance, which is transmitted to the outside. The entrance from the exhaust pipe to the chamber must, therefore, remarks the "Horseless Age," be made so that the column of gas passes

question then arises, whether it is best to have a large number of small circular openings or a single narrow angular opening. Another question which does not seem to have been definitely settled is the cubic capacity of the expansion chamber with relation to the displacement of the engine piston.

A SERIOUS motor-car accident was disclosed in a case heard on Monday by the Spelthorne magistrates, the victim being a motor-car driver named George Ridgeway, of Page-street, Westminster, who was said to be lying in a critical condition in the Hounslow Cottage Hospital. Henry Appleton, a carman, was fined 10s. for being drunk while in charge of a van and two horses on the Staines-road, Bedford. A collision occurred between the motor-car and van. This was due to Ridgeway coming suddenly from behind a market-garden cart. He was thrown out and badly injured internally, while one of the brewery horses was struck by the motor-car and severely wounded in the chest. Appleton was also thrown from his van, but escaped with a shaking.

SOUTH AFRICAN NEWS.

[FROM OUR OWN CORRESPONDENT.]

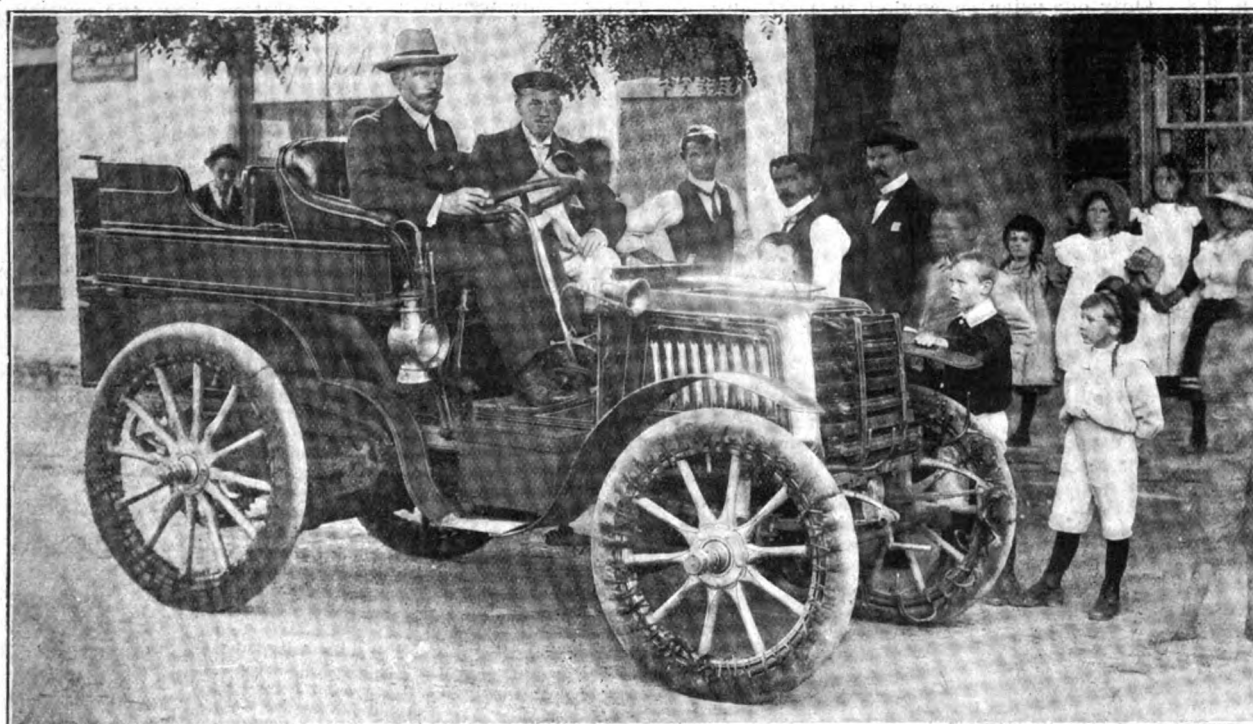
CAPE TOWN, July 21st.

FOR the information of readers of the *Journal*, and more especially of manufacturers at home, I may state that Mr. O. E. Bush, late superintendent of motor-cars to De Beers Consolidated Mines, South Africa, is leaving for England to-morrow by the R.M.S. "Briton." Mr. Bush first came out to South Africa in 1898 with three M.M.C. cars, which were the first imported into the country. Mr. Bush, who was likewise the first man to drive a motor-car in South Africa, has probably had more experience of the roads in the interior than any other motor driver in the country, and with his wide knowledge he should be able to give much valuable advice to builders with regard to the construction of cars for the South African market.

ONE of his most notable trips was during a recent electioneering campaign, when he drove Mr. Abe Bailey on a 12-h.p. Panhard through Griqualand West, the total distance covered in fourteen days being 900 miles, and the average speed of the car

company with a Lanchester from the Rudge-Whitworth garage. On the return journey the "Brush," driven by Mr. Fenton, ran out of petrol when fifty-five miles from Cape Town. None was to be got in the vicinity, and the Lanchester only had enough to carry her back to Cape Town, so the Lanchester's driver, Mr. Saunders, posted back to Cape Town at full speed to fetch petrol. Mr. Graaf, having urgent business in Cape Town, returned with Mr. Saunders. Just as Mr. Fenton was turning in for the night at the hotel, Mr. Pippard, of the Rudge-Whitworth Company, dashed up in a Wolseley with plenty of petrol, so the two cars left for Cape Town the same night, arriving next morning. The Brush is to be fitted with a lower gear, as the existing one is too high for the roads out here.

THE second South African motor meet is to be held on Saturday next, the 8th, in the grounds of the late Mr. Rhodes' residence at Rondebosch, when some interesting speed trials will be held over a flying mile. Dr. Jim has matched his 22-h.p. Daimler against Mr. Graaf's car of the same make and horsepower, the former to be driven by Dr. Jim's mechanic, Mr. Wilson, and the latter by Mr. Fenton. Your correspondent.



Mr. Donald Menzies at the helm of a 12-h.p. Panhard Car at Colesberg, Cape Colony. It will be noticed that the tyres are shod with auxiliary covers called "veldschoons." Mr. W. G. Nettleship, whom we have to thank for sending the photograph, reports that they are found a good means of preserving the tyres from the awful roads.

twenty-two miles per hour. Mr. Bush it was, too, who persuaded Mr. Bailey to go in for a 22-h.p. Daimler, and he also ordered the car, besides ordering two Panhards for De Beers. He is now making his second trip home since his sojourn out here, and intends securing some good motor-car agencies for South Africa.

At the Opera House, Cape Town, where Mr. John Le Hay and Company are playing the musical comedy opera, "Faust up-to-Date," Mr. Le Hay, as Mephistopheles, makes his entrance in the first scene on a motor-car, amidst the usual thunder, lightning and slow music—scene shifters dancing a cellar-flap on an unoffending piece of sheet iron. The mechanic is attired in brilliant red silk motor clothing. The car makes the circuit of the stage two or three times, and then makes its exit on the prompter side, to the accompaniment of flashes of property lightning.

August 5th.

THE recent spell of fine weather here has brought out the motor-cars again, and the roads are now in pretty good condition in and about Cape Town. Mr. D. P. Graaf started out last Friday on his 12-h.p. "Brush" car for De Villiersdorp, in

will act as mechanic to Mr. Fenton on that day. I have heard that the driver of Mr. John Garlick's 24-h.p. Darracq intends challenging the winner of this test.

THE current number of the "Badminton Magazine" contains "More Hints to Modest Motorists," a series of useful notes of value and interest.

As a result of the decision of Eastbourne Corporation to run motor omnibuses, Messrs. Chapman and Sons, the local bus proprietors, have decided to sell their seven vehicles and thirty horses.

A FRENCH driver in the employ of a Manchester gentleman staying at Llandudno has succeeded in driving a 24-h.p. Panhard up the slopes of the Great Orme's Head. The roadway up the mountain is narrow and dangerous, and the gradient at places is about one in seven. Having succeeded in reaching a height of between 500ft. and 600ft., the car was turned round and the return journey made by the same route. The length of the road traversed is about half a mile.

MOTOR-CYCLING NEWS.

HELD under most adverse conditions as regards weather, the Auto Cycle Club's reliability trials were brought to an end on Saturday last. Out of the 44 competitors who started, 32 set out for the run to Basingstoke on Wednesday, the 19th inst., the route taken being via Croydon, Epsom, Leatherhead and Guildford. The Hog's Back was made a compulsory hill climb, every rider having to mount it with or without pedalling, the penalty for failure being the loss of ten marks. At the top of the hill the riders were stopped and sent down the hill again, with instructions to pull up on their brakes and dismount whenever they heard a whistle blown. The hill-climb was successfully made by the bulk of the riders, but the brake test gave some very fluctuating results. Mishaps to three of the machines caused their riders to return by train.

ON Thursday, the 20th inst., thirty-one riders set out for Eastbourne, the climb up River Hill, near Sevenoaks, being included in the return journey. The hill, in the steepest part, has a gradient of 1 in 9.8. Only one rider succeeded in mounting the hill without pedalling, but, in one way or other, all but six managed to make the ascent. The best time was made by the Jap machine (2 min. 3 2-5 sec.), the Chase being second (2 min. 12 2-5 sec.). The last run was to Worthing on Friday, the 24th inst. Owing to the police traps on the previous visit, the route was quietly changed, much to the annoyance of the police at Horsham, whose elaborate preparations were rendered useless. Of the thirty riders who started twenty-eight safely reached the Palace at night.

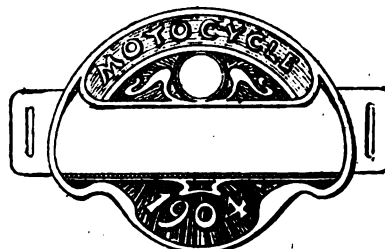


The "Motor-Car Journal" Challenge Cup, won by J. Leonard on "Humber" Motor-Bicycle.

SATURDAY morning was devoted to a series of five mile speed trials on the track. The machines had to be in exactly the same condition as that in which they had run in the road trials, no stripping of any kind being allowed. F. W. Chase, on the 3-h.p. Chase motor-cycle, covered the distance in 8 min. 8 1-5 sec., or 37 miles per hour, gaining four marks out of a possible five. The next fastest was A. C. Wright on the 2½-h.p. Ormonde (four marks), his time being 8 min. 27 sec. Other performances were: 2½-h.p. Matchless, 9 min. 18 sec., three marks; the 2½-h.p. Bat, 9 min. 20 2-5 sec., three marks; the 3½-h.p. Booth, 9 min. 25 sec., three marks; the 2½-h.p. King, 9 min. 25 2-5 sec., three marks. Only three riders exceeded thirteen minutes. Altogether twenty-one competitors completed the five-mile time trials, the average speed working out at 28.3 miles per hour. The final awards have not reached us up to the time of going to press, the judges meeting on Thursday to go over the reports of each machine.

THE motor-cycle section of the Cyclists' Touring Club is organising a tour from London to Land's End, John o' Groat's, and back to London. The start is fixed for September 24, and it is expected that London will be reached on the return journey on October 14.

THE French authorities, in preparing new designs for the "plaque," which every cyclist in France is compelled to carry on his machine, have decided to issue a distinctive tablet for motor-



cycles. The accompanying illustration shows the special design of motor-cycle plaque, of which 40,000 have been ordered. The new plaques will be issued from January 1st next.

THE Motor Cycling Club will hold the third 200 miles reliability trial to-day (Saturday) at Hatfield, starting at 6 a.m. The Committee has decided to continue the trial upon the same course as before. In addition to the trophy presented by Mr. Edge, and which will be of the value of £20, the Club is giving a second prize of a gold centre medal, and a third prize of a silver medal, while certificates will be given to all competitors completing the distance at an average pace of not less than eleven miles an hour. Any motor-cyclists or cyclists who are willing to assist in the checking of competitors should communicate with the sec., Mr. G. E. Roberts, 17, Fieldhouse Road, Hyde Farm, Balham, S.W. The run on Sunday, the 30th inst., will be to Reading, making the George Hotel the headquarters. The meeting place will be the Marble Arch, 10.30, lunch being fixed for 1.30.

FULLY 9,000 persons were at the Athletic Grounds, Canning Town, on Saturday, to witness the sports promoted by the West Ham United Football Club. H. Martin, on his Excelsior, made an attempt to lower the fifty miles motor-cycle un-paced record. He made a good start, and rode 14 miles in 16 min. 37 2-5 sec., when the belt of his machine came off, and he left the track. Later he attacked the twenty miles record, but owing to the oil tank breaking and flooding the belt he was again obliged to leave the track, after covering 10 miles in 11 min. 54 1-5 sec.

THE motor-cycling hill-climbing competition at Ashford, co. Wicklow, on Saturday, was spoiled by the rain. By the time fixed for the start of the event the road was in such a condition that many of the entrants did not consider it safe to race up the hill at any speed. Consequently only a small number of the thirty-three entrants essayed the attempt, and none of them were able to climb the whole of the hill. Acting under the proclamation of the County Council of Wicklow, the police closed the road to all traffic at 11 a.m.

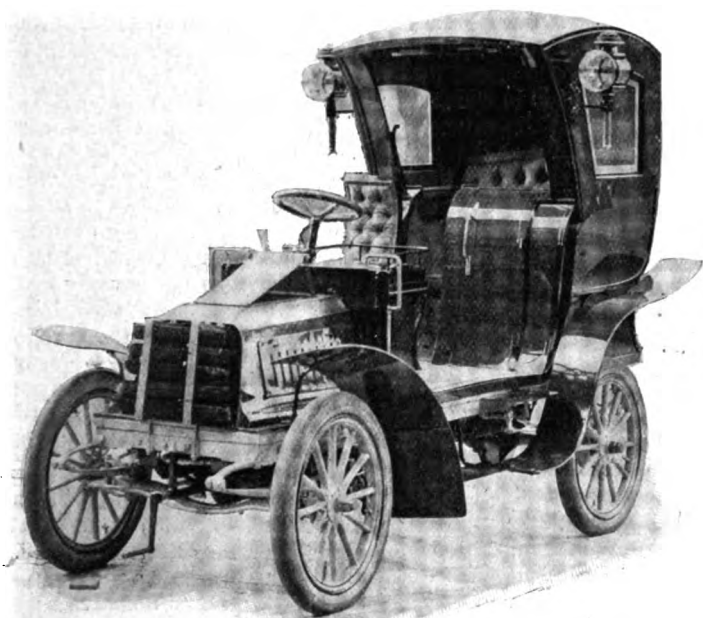
A DANGER board is to be erected 100 yards from the top of Sun Rising Hill (Warwick) by the Midland A.C.

DRASTIC measures have been adopted to capture a few well-known automobile scorchers who refused to stop when signalled to do so by policemen in Lincoln Park, Chicago. Iron posts have been driven into the ground at various points, across which heavy cables are stretched when occasion demands. As soon as a motorist enters the park at excessive speed the information is telephoned to policemen stationed at the iron posts, and the cables are stretched across to stop him.

HERE AND THERE.

THE motor-bus service between Oxford Circus and Cricklewood has been stopped.

THE Bann Motor Co., Limited, has been registered in Ireland with a capital of £12,500.



London's New Motor Hansom (see page 491.)

THE Duke of Newcastle, in company with some American friends, is on a motor tour in Wales.

THE directors of the Furness Railway Co. are considering the adoption of a combined engine and car to carry fifty passengers.

AT New Brighton, Ashford, and several other places, motorists have lately been fined for driving motor-vehicles without lights.

THE Inland Revenue authorities in London are displaying great activity just now with regard to the owners of motor vehicles.

MADAME LOCKERT, of Paris, who has already made the journey to Berlin, Vienna and Madrid by motor-car, is about to start on an automobile tour to St. Petersburg on a Tony-Huber car.

MR. W. R. McTAGGART, whose place in Grafton Street, Dublin, was a centre of interest during the Irish Fortnight, has taken premises in South William Street, Dublin, for garage purposes.

MESSRS. J. E. HUTTON, LTD., has been registered with a capital of £50,000 to acquire the business of Messrs. J. E. Hutton and J. A. Stirling, who will remain as the first directors of the concern.

A PETITION has been forwarded to the Great Western Railway Company asking them to institute a motor-car service between Witheridge and Tiverton. The former place has no railway facilities.

MR. C. F. PAISLEY has just had a successful run from London to Edinburgh on a 10-h.p. Automotor car. Every hill was negotiated satisfactorily and the car made a good performance throughout the run.

A SERIES of conversion tables for foreign moneys and measures has been issued by the "Commerical Intelligence" Publishing Co., Limited. These should be of service to all having export business dealings.

MR. ARGENT ARCHER has issued a catalogue of photos of the Gordon Bennett race, and of scenes in connection with the Irish automobile fortnight. More than two hundred photographs were taken by him.

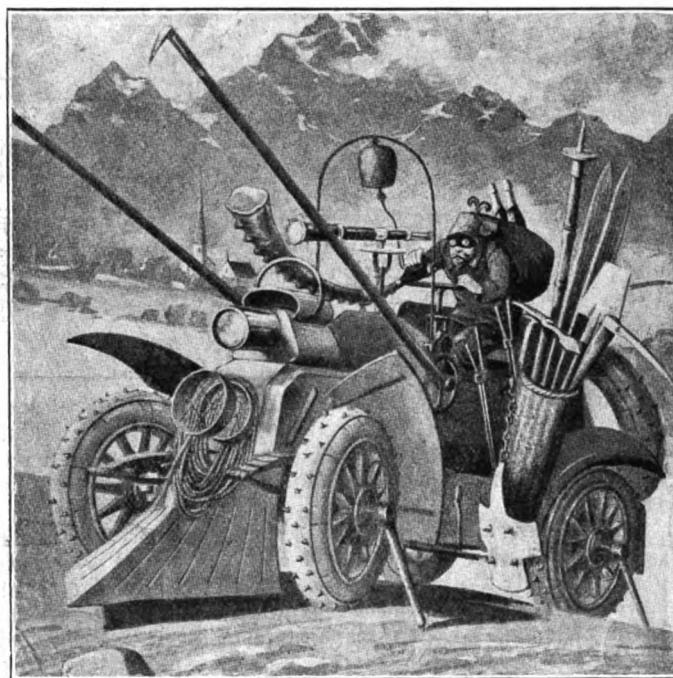
MR. C. FIPPARD, of the Horley Motor Works, undertakes any kind of motor repairs. He has enlarged and remodelled his works and put in a new plant of machine tools. Motorists in trouble near Horley will find Mr. Fippard a friend in need.

AMONG the many interesting reports presented to the recent Automobile Congress in Paris was one by M.R. Arnoux on "The Ignition of the Charge in Explosion Motors." The report has now been reprinted in pamphlet form by Madame Lockert, of *Le Chauffeur*, Paris, from whom anyone with an interest in the subject may obtain copies.

A DELEGATION of motorists appeared before the county commissioners at Minneapolis, U.S.A., recently, and asked for the straightening of some of the crooked portions of the road from Shakopee to Eden Prairie. The county surveyor was instructed to survey the land in the neighbourhood with a view of ascertaining the cost of the work.

IN our last issue we mentioned the case of an abortive prosecution by the London County Council against a motorist for emitting smoke, etc., from a petrol motor. We now learn that two more summonses have been issued against owners of petrol motors for an alleged similar offence, so it behoves motorists to be careful of their flow of lubricating oil, otherwise a vigilant policeman will have their names and addresses.

THE Wolseley Tool and Motor Car Co., Ltd., have sent us a copy of the new catalogue of Wolseley motor-vehicles they have issued. The list is beautifully got up, the illustrations being particularly clear. It gives details of the Wolseley 5, 7½, 10, 20, and 50-h.p. cars, a considerable portion of the catalogue being usefully devoted to a description of the motor, change-speed gear, cooling system, etc. Altogether the list is one which does credit to the Wolseley Co.



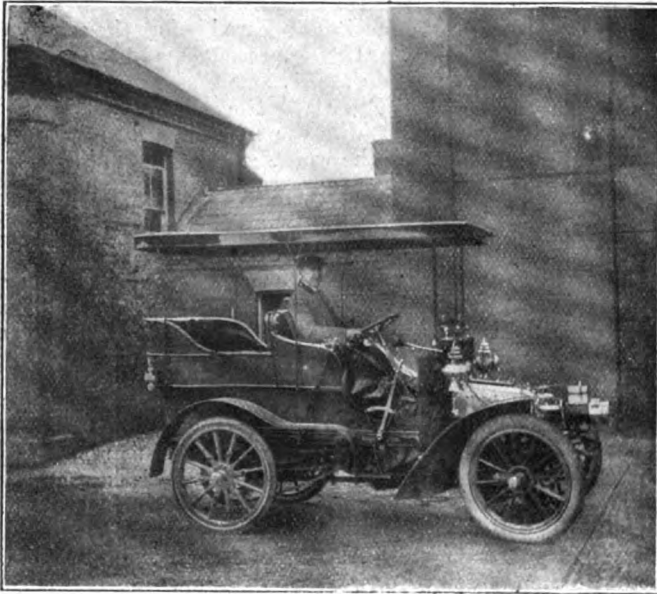
On the way to the Arctic Circle.
(Das Schnauser's Muntch.)

THOUGH it contains little that is new, the latest volume in the Library of Useful Stories published by Messrs. George Newnes, Limited, is more than usually interesting to our readers. It deals with the development of Rapid Transit, and Mr. Beckles Willson traces the subject from the passing of the Turnpike Act of 1633 to the coming of the mono-rail and modern motor-car. The chapter dealing with the latter subject is very well done, although from our point of view it might have been usefully expanded without encroaching upon the general plan of the work.

THE Carlton Motor Company, Limited, has been registered with a capital of £800.

MR. THEO. MASUI, the agent for the Germain cars, has opened a repair department and garage at 14, Coach and Horses Yard, Old Burlington Street, W.

MESSRS. FRANK F. WELLINGTON, LIMITED, have just supplied one of their 14-h.p. "Brooke" cars to Lord Hastings for use at his country seat at Melton Constable, in Norfolk. The



Lord Hastings on his "Brooke" Car.

car is fitted with a removable canopy and finished with a natural wood varnished body. It is, of course, well known that Lord Hastings is a keen automobilist and takes great pleasure in driving his various cars himself. It may be mentioned that with this car was supplied a double pair of driving wheels, one with "Sirdar" tyres and the other with pneumatic.

AUTOMOBILISTS are to assist Chicago in celebrating her centennial jubilee, which is to be observed during the week ending October 1st. In addition to races, an evening automobile parade, with two thousand illuminated cars in line, three abreast, will be one of the pageants.

SAINSBURY'S Anti-skidders, Limited, is the title of a company registered recently to adopt an agreement with Mr. W. D. Sainsbury, and to carry on the business of manufacturers of and dealers in devices for preventing side-slipping or skidding of motor-cars, cycles, vehicles, and velocipedes of every description, cycle, motor-car, carriage, and tyre manufacturers and dealers, &c.

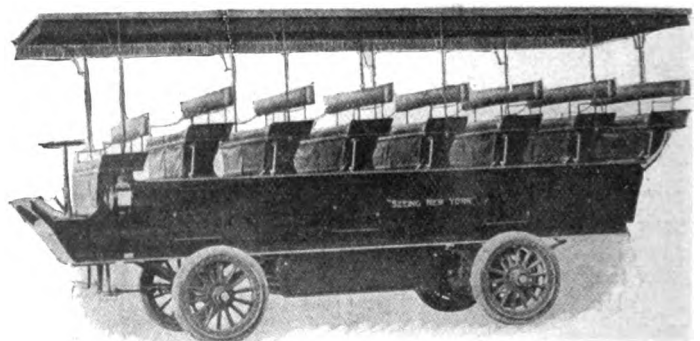
As showing the signs of the times, we may refer to the presence the other afternoon, in Piccadilly, W., of an Oldsmobile, with Mr. Peckham; an electric hansom, similar to that shown by M. Jeanteaud at the exhibition at the Agricultural Hall in 1896, and a Foden steam wagon of Messrs. Mears, with a trailer, all following one another; while, proceeding in the opposite direction, were two ordinary "City and Suburbans" and a petrol car.

MOTOR-CARS are to be employed on an unusually large scale during the annual manoeuvres of the German army in Saxony next month. Twelve cars in all are to be used. Six of them are the permanent property of the War Department. They include a 16-h.p. Mercedes, a 12-h.p. and a 16-h.p. German Daimler, a 10-h.p. and a 16-h.p. Benz and a 15-h.p. Dürkopp. The other six vehicles will be lent by various German makers. Herr Willy Poege, of Chemnitz, has also put at the disposal of the Crown Prince of Saxony, commanding the 12th Army Corps, the 60-h.p. Mercedes car with which he recently won a trophy at the Ostend meeting.

MESSRS. SHIPPEY BROTHERS are placing on the market a new "Puncture Proof Jelly Compound" which is likely to fill a long felt want. A number of owners of Locomobiles, Toledos, and other steam cars as well as of Oldsmobiles, were invited last week to witness some experiments as to the merits of the new compound. Several Locomobile tyres were filled with it, pumped up and then punctured, time after time, with bradawls, French nails, etc.; the tyres were instantly healed up and no holes whatever could be discovered beyond a small dark speck on the rubber, which had been closed up by this new process. Another experiment was made in which a tyre, of a porous nature, and leaking very badly at the valves, was filled with a pint of "Rubberine" compound jelly, as it is called. After being pumped up the tyre was put to the water test, but no leakage could be discovered. The process of repair is a very simple one; all that has to be done is to unwind the wire and remove the valve, put into the tyre about one pint of the jelly compound, replace the valve, pump up, and twirl the wheel round a few times, so as to evenly distribute the compound over the inside. Another advantage claimed for the compound is that it will keep the canvas of the tyre cool and pliable, thus retaining the elasticity of the rubber when running on the roads. The new compound should find a ready sale amongst owners of light cars shod with "Diamond" single tube or other American single tube tyres, for which it is apparently best suited.

A NEW catalogue of their lamps and "motorcessories" comes from Messrs. Salsbury and Son, Limited, in which some idea of the growing importance of the motor industry is revealed in unmistakable fashion. According to the firm's own observations the ideal lamp for motor-vehicle purposes should not give a mere glimmer just sufficient to indicate the presence of the automobilist, but it should throw a good light ahead to show the way and enable the driver to avoid obstructions. It should also be so constructed as to show the side of the road. The most important feature of all is that the construction of the lamp and the method of its attachment on the vehicle should be such as to reduce to a minimum the possibility of gas from escaping petrol coming in contact with the light of the lamp, which has been the cause of several serious accidents and burnings of cars.

THE Vehicle Equipment Company, of Hartford, Conn., U.S.A., has recently completed what is claimed to be the largest electrical motor-car in the world. As will be seen from the accompanying illustration, it is a huge char-a-banc, having eight rows of seats sufficient to accommodate forty persons, including the driver. It has been built for the American Sight Seeing Company, of New York, which hitherto has employed six-horse



coaches to convey tourists round New York. The vehicle is driven by means of electrical motors, geared to the rear wheels. Current is furnished by a battery of forty-four Exide accumulators of the same size as is used on the company's five-ton electrical wagons. The controller is adapted to give four speeds forward and reverse, the top speed being eight miles an hour, at which it is estimated the car will be able to cover a distance of thirty miles on one charge. The char-a-banc is 22 ft. long by 7 ft. in width, and its weight complete is about three-and-a-half tons.

CORRESPONDENCE.

THE MIESSE STEAM CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Faber," after considering the merits of all the leading steam cars, I purchased a 6-h.p. Miesse, and certainly consider it an excellent car and quite in the front rank. Having had considerable personal experience with the railway locomotive, I decided to try steam in place of petrol, and I certainly do not regret my decision. The absence of vibration and complication, and the advantage of being able to burn common paraffin oil, are to my way of thinking most essential. I may remark I do not employ a mechanic or driver, and perhaps my opinion is worth more than that of an owner whose car is looked after and driven, as the owner in the latter case knows very little of the minor troubles which attend all kinds of cars, as these are eliminated before he takes his seat, probably.

I may add that the Miesse is a very simple car, and devoid of the

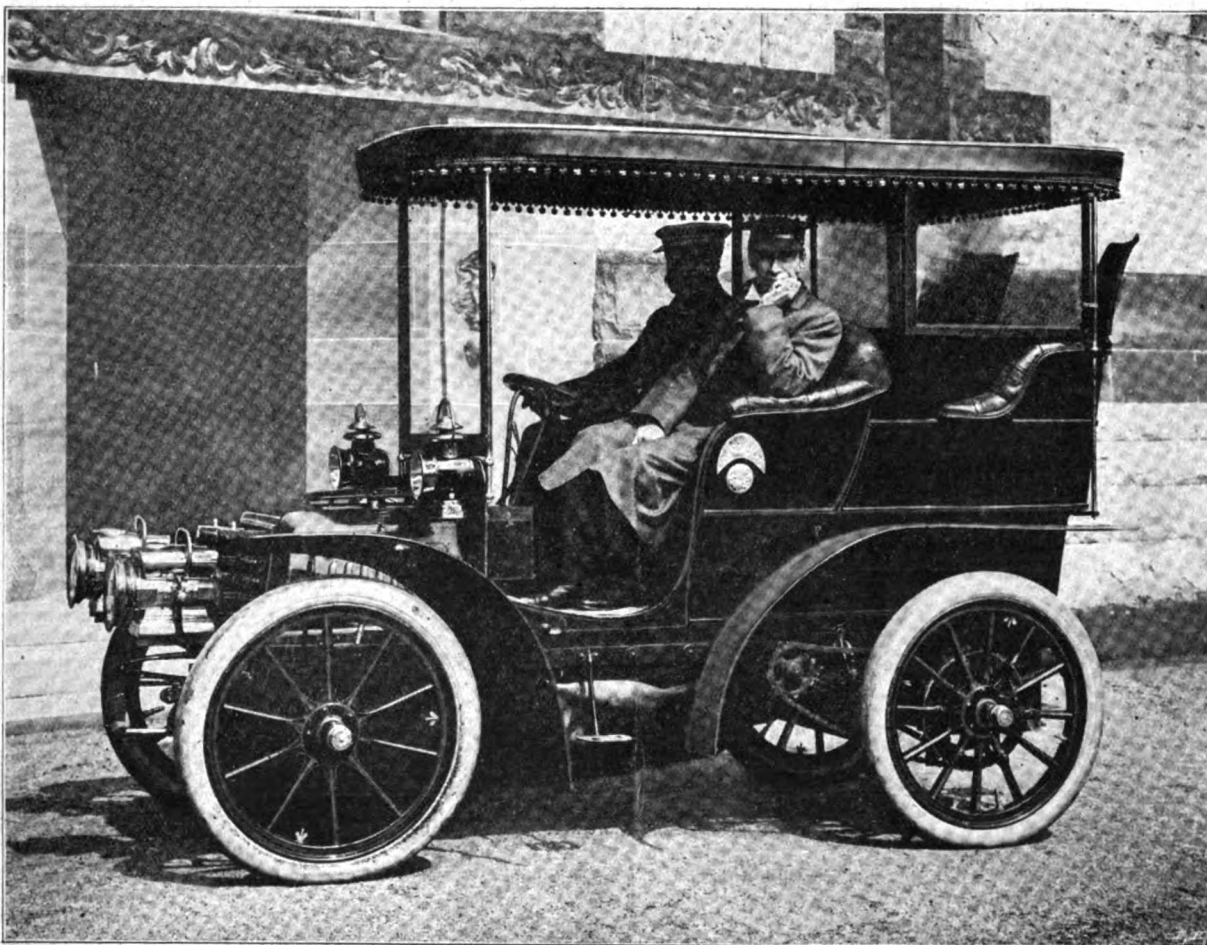
specified width brings the great majority of roads within its scope. Moreover, even the most careful drivers will suffer from it, and, indeed, they more than the scorcher, for the latter naturally confines himself to the main roads, and will therefore be little inconvenienced by it.—Yours truly,

FABER.

STARTING AND STOPPING TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice from your last issue that the novel and useful starting and stopping speed trial inaugurated at the Laffrey meet the other week is to be repeated at Deauville. Might I suggest that the A.C.G.B.I. or one of the provincial clubs might copy the idea and organise a similar event in this country? It could be carried out in many private grounds, as only a relatively short stretch is required, and would be an interesting competition, as it not only tests the cars, but also gives scope for display of the skill of the drivers. The short dis-



Professor Hubert von Herkomer on his 10-h.p. Panhard. (See page 489.)

[Allgemeine Automobil Zeitung.]

many automatic arrangements used in some steamers, and my experience with automatic arrangements is they add great complication in oiling the number of working parts and often fail at the critical moment. Personally I prefer a car that requires intelligence to drive, as where the control is more in the hands of the driver, more pleasure is derived from its use.—Yours truly,

A. G.

THE MOTOR CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Sir Walter Foster's anxiety—alluded to by you in the last issue—lest the speed limit should prove a detriment to doctors and their patients, is, I fear, needless, for the simple reason that no country doctor will be able to use a motor-car at all, since the operation of the "16-foot clause" will prohibit its employment in large areas of his district. I earnestly hope that early and energetic measures will be taken to restrict as far as possible the application of this clause, which seems to me by far the most important and mischievous of an ill-judged Act, especially as its applicability to any road of which a part merely is of the

tance speed trial from a standing start and a stopping finish is perhaps rather hard on the tyres, but, as motorists have been found willing to enter for brake trials of a severe character, it is probable they would be still more ready to take part in these tests, which are of a much more sporting and interesting character. Cannot such an event be included in the programme of the coming meeting on Southport promenade?—Yours truly,

START AND STOP.

MOTORING IN SOUTH AFRICA.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in your issue of July 18th, under the heading of "South African News," you have a paragraph with regard to the Cape Town police which I think, in justice to them, I cannot allow to pass unchallenged. It is therein stated "that constables have had instructions not to take anybody's name and address, but to march them straight away to the charge office." Instead of this being the case, the relations between motorists and the police are of a most cordial and satisfactory nature, and there is no case on record of such an action on

their part. The chief of the Cape police, Colonel Robinson, is most sympathetic and friendly in his attitude to the Automobile Club, and he has been good enough to advise us that he will not proceed against any members of the club for furious driving without first advising the club of the intended action of the police.

The Automobile Club of South Africa is doing all in its power to get its members to exercise reasonable care and caution in driving, and it feels that the publication of such a paragraph as the one referred to in your paper tends to give a most erroneous and unfair impression of the attitude of the Cape police to motorists.—Yours faithfully,

A. T. HENNESSY,
Chairman Automobile Club of S.A.

AN "ACT" OF DISCOURAGEMENT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read your article under the above heading in your valuable paper of the 22nd inst., and while I am in entire sympathy with every right-minded man and every automobilist who looks upon this Government measure as a disgrace to the Statutes of an enlightened country, I cannot agree with the statement contained in your article which suggests that the Automobile Club has been a party to the weakness and blundering so conspicuous in the action of the Government in regard to it. You say, and I take exception to the words, "Unfortunately, however, the original sin must be laid at the doors of the Automobile Club," for I think you must be aware, although perhaps you have not realised the full force of it, that the Cabinet Ministers responsible for this measure have been repeatedly pledged to the responsible members of the Automobile Club for at least two

stupidity, sooner or later raise such a cry from natural justice that it will bring about its own extinction.—Yours faithfully,

T. W. STAPLEE FIRTH.

HANDICAPPING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—So many remarks have been made re the handicaps at the Midland Club's hill climb, on July 25th, that it has occurred to me that a formula for determining the results in future should be decided upon. In handicapping, the determination of the h.p. has always been the bugbear. Now 33,000 ft. lbs. per 60 secs. = 1 h.p. From this we obtain the following, having obtained the rise in feet on the hill, viz.,

$60 \times W. \text{ in lbs. } \times \text{rise in feet}$

$T. \text{ in lbs. } \times 33,000$

equals actual h.p. given off by each car. Now in the case of Sun Rising Hill we actually had a rise of 285 ft. If we have a course 100 yds. shorter, it would give us a rise of 275 ft. This would reduce the formula to

$W. \text{ in lbs.}$

$2 T.$

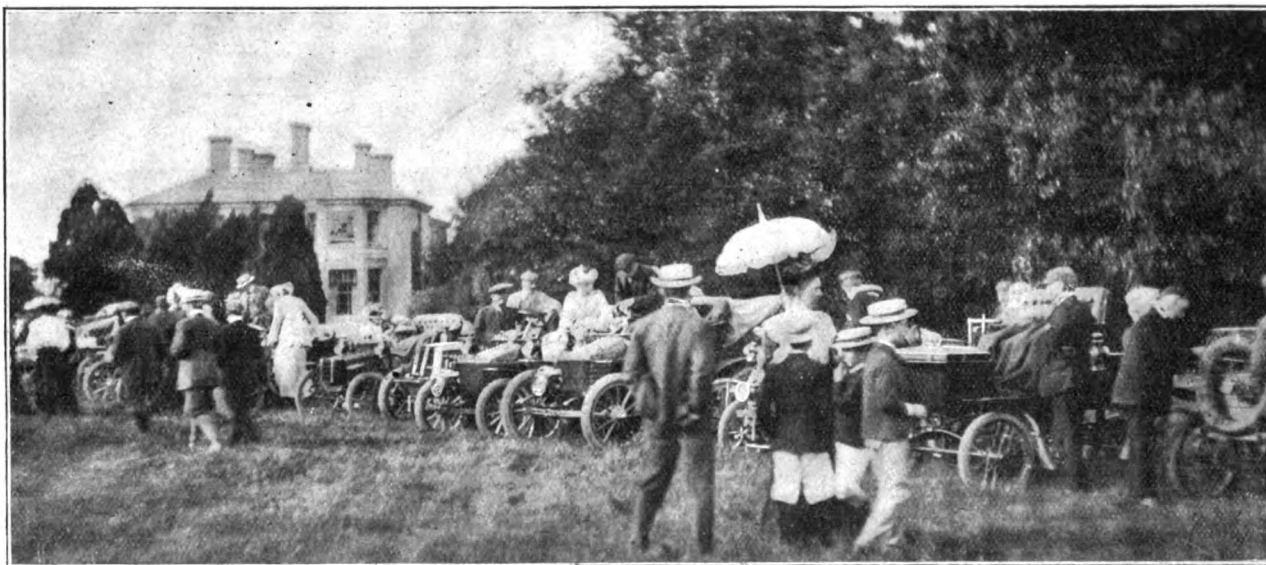
and would give the actual h.p. Why not use this as a constant? Cylinder dimensions, revolutions, etc., fall out of the calculation, and a certain result is obtained.—Yours truly,

T. C. AVELING, A.M.I.C.E.

RENEWAL OF PARTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I be allowed to protest, through the columns of your



The Meet of the Lincolnshire Automobile Club at Roxholme.

years to abolish the speed limit, if the Automobile Club would support the Government getting registration and numbering of motor-cars. This the Club considered as being the only plan for putting a stop to those men, who, in the guise of gentlemen and sportsmen, make use of the public roads without the slightest consideration for other users, and dash about under circumstances which are wholly incompatible with the best traditions of the gentleman and sportsman. These are amongst the real enemies of the automobile movement.

You and your readers are well aware that this pledge was loyally carried out by the House of Lords and the speed limit was abolished. Subsequently, when the Bill was sent to the lower House, an adverse shout went up from a delirious section of that House, and the Cabinet, who were directly responsible for the pledge they had given the automobilists throughout the kingdom through the Automobile Club, tore up their pledge and deliberately broke their word without a moment's notice to those to whom they had pledged to abolish the speed limit, and they, in the teeth of the fact that the County Councils and chief constables throughout the kingdom had voted against the speed limit, truckled to an ignorant section of the House, and brought forward this speed limit at the very last moment.

It is obvious from past experiences that this great industry is more or less in the hands of the most uneducated section of our community, namely, the policemen. In a few places, these men have been making promotion and capital by trumping up cases under a stupid law, and they have resorted to underhanded methods in order to manufacture evidence and trump up cases against motorists, and have in a few places, notably Kingston, Reigate, Horsham, etc., obtained a willing stalking horse in magistrates whose good sense as such seems to have entirely left them.

The enactment which has now been passed must, from its inherent

paper, against the way in which importers of foreign cars overcharge the buyer for any parts or renewals that he requires? I have lately had a case before me in which a friend of mine had occasion to send to London for a small part for a French car; the whole thing could not have possibly cost more than a few shillings, and he was charged several pounds for it.—Yours truly,

FAIRPLAY.

ADDRESS WANTED.—The address of Mr. R. Galbraith, who has made some suggestions with regard to profitable motor-car routes in Ireland, is wanted by an English correspondent.

WITH regard to Mr. M. R. D. Roberts' letter on a "new air-cooling method," Mr. Henry Sturmey writes:—"In reply to Mr. M. R. D. Roberts in your last issue permit me to state that I have also secured provisional protection for a method of radiation by points very similar to that described by him, and I believe I am in front of him. There may be others, of course."

CLUB NEWS.

LINCOLNSHIRE.

THE series of successful gatherings held by the Lincolnshire A.C. was followed up on Saturday by a large meet of members at Roxholme Hall, on the invitation of the chairman of the club, Capt. J. A. Cole. There was a very good muster, among those present being Mr. E. Cragg, M.D., hon. sec.; Mr. and Mrs. J. R. Richardson, Major E. Goddard, Messrs. C. H. Gilbert, E. N. Bell, W. R. Pennell, Holloway, Rich. Godfrey Lorne, G. J. Wilkinson, F. Richardson, C. Holland, R. M. Wright, Dr. Gilpin, Messrs. C. W. Pennell, Linnell, Capt. Lyall, Dr. Husband

G. H. Preston, Dr. Russell, R. Gleed, and B. Smith; most of the motorists were accompanied by ladies. After the cars had entered the park, tea was taken on the lawn, and then a very interesting competition was held for a prize offered by the chairman. The cars were started in the "coachhouse," run out of the gates and down the drive, reversed along a hill, returned and reversed into the "coachhouse." The winner proved to be Mr. C. Holland, Boston, 7½-h.p. Wolseley; time, 2min. 2 4-5sec. Other competitors included Mr. R. M. Wright, Lincoln, 12-h.p. Georges Richard, in 2min. 5sec.; Major Goddard, 12-h.p. Richardson, 2min. 8sec.; Capt. J. A. Cole, 12-h.p. Durkopp, 2min. 15 2-5sec.; Dr. Gilpin, Bourne, 8-h.p. Peugeot, 2min. 35 3-5sec.

SHEFFIELD.

THE Sheffield Club is having a run to Wentworth Castle to-day (Saturday). The cars will meet at Wortley at 3.30 p.m. and proceed via Thurgoland to Stainborough Park. On the 5th prox. there will be a special week-end run to Buxton to meet the Manchester and other automobile clubs.

WEST SURREY.

A HILL-CLIMBING handicap was held by this club on Saturday last, at Hind Head, the course being from the Red Lion Inn to the summit, a distance of 2 miles 1,458 yards, with a rise of 520 feet, the steepest gradient being 1 in 13. Eleven cars had entered, of which nine appeared at the starting point, the results being as follows:—

Driver.	Car.	Time.	Handicap.	No. of
		m.'s.	m. s.	passen- gers.
Major Matson	6½ Benz	15.2	9.30	4
Mr. Fennings	4½ Pieper	14.	7.30	1
Mr. Buttmer.....	10 Decauville	11.0	4.0	3
Mr. Ponsford	8 Clement	11.15	3.30	2
Mr. Crothers, jun....	9 Darracq	14.25	4.30	4

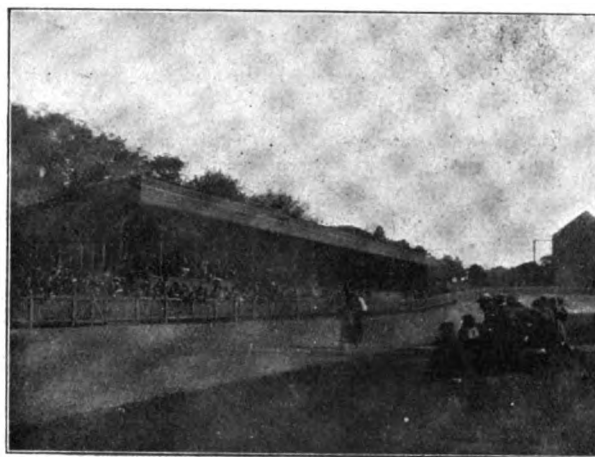


Preparing for the "Motor Car Journal" Cup Handicap.

MOTOR CYCLE RACING AT THE CRYSTAL PALACE

KING SOL, who seems to have this year taken a protracted holiday was kind enough to favour England—at least the southern portion—with his welcome presence on Saturday last, and so enabled the annual race meeting of the Auto Cycle Club at the Crystal Palace to take place under most satisfactory weather conditions. The result was that the grand stand was fairly well filled with spectators, while an interested crowd gathered together on the bank on the north side of the track. The first event of the day was a one-hour scratch race for the "Autocar" Cup, limited to motor-bicycles with engines having a total capacity in which the diameter in mm., multiplied by the diameter in mm., multiplied by the stroke in mm., does not exceed 343,000, that is 70 by 70, such machines not to exceed 114 lbs. in weight. Of the nine entries for this event seven faced the starter, including J. Van Hooydonk, the holder of the Cup. J. F. Crundall on a Humber quickly took the lead, followed by Hooydonk (Phoenix), and it was soon seen that, except for accidents, Crundall was to be the winner. Early in the race E. Burgess (Weller) and E. Kickham (Leader) retired, leaving only five competitors on the track. The result was: J. F. Crundall (distance, 42 miles 1,260 yards), first; J. Van Hooydonk (38 miles 880 yards), second; S. C. Holloway (Minerva) (38 miles 140 yards), third.

The five miles handicap for the "Motor-Car Journal" cup brought out the largest number of entries. The event, which was open to motor-bicycles with engines having a total capacity in which the diameter in mm., multiplied by the diameter in mm., multiplied by the stroke in mm., does not exceed 440,000, machines not to exceed 170 lbs. in weight, was run off in four heats and a final, in which the fastest loser was allowed to compete. Heat 1 brought out S. C. Holloway (holder of the Cup) (Minerva), scratch; J. Leonard (Humber), 5sec.; E. Kickham (Leader) 5 sec.; S. Wright (Excelsior) and F. P. Prestwich (Triumph) 20 sec. The race proved a tussle between Wright and



W. Parry on his "Rigid" finishing his Flying Mile.

MOTOR-CYCLE RACES AT THE CRYSTAL PALACE.

Dr. Thorne-Thorne	6 Benz	19.50	8.30	2
Mr. Pullman, jun. ...	4½ De Dion	17.5	6.0	2
Col. Fairtlough	12 Darracq	13.45	2.0	4
Mr. King.....	3½ Benz	22.50	12.0	2

Mr. R. W. Buttmer acted as starter, assisted by Mr. Pullman, sen., whose 15-h.p. Durkopp (the scratch car) had unfortunately not arrived from the makers in time to take part, and who therefore followed the trials in a 1-h.p. hippomobile, which would not have come in last had its time been taken. The timing at the finish was undertaken by Mr. Crothers, sen. (hon. treasurer) and Mr. Muntz. The handicapping was somewhat in favour of the weaker cars, whose performance was nevertheless highly creditable. Mr. Crothers subsequently entertained the members to tea at "Moorlands," Hind Head.

LEICESTERSHIRE.

MARKET HARBOROUGH is to be visited by the Leicestershire Club to-day (Saturday), the outward journey being via Lutterworth and Bosworth. The return route will be by way of Bosworth.

NO LICENCE.

At Retford Borough Police Court, J. H. Denman, of Carolgate, Retford, was summoned by the Inland Revenue authorities for having in use a motor-bicycle and trailer without having a licence for them. It was pointed out by the prosecution that the defendant was liable to pay 15s. each for the motor-bicycle and trailer. For the defence it was stated that the motor-bicycle had been used to carry goods in the defendant's trade, and that as it was not used for pleasure he was not aware that he needed a licence. The Bench inflicted a fine of £1, including costs.

The defendant was also fined £1, including costs, for storing a larger quantity of petrol than is permitted by the Explosives Act.

Leonard, the former winning in 7 min. 10 4-5 sec. Owing to the judges considering the silencer on Wright's motor-cycle inefficient, he was, however, disqualified. Heat 2 brought out five more riders:—J. Van Hooydonk, scratch; C. R. Collier (Matchless), 5 sec.; W. Genn (Eland), 10 sec.; E. Burgess (Weller), 15 sec.; and P. Harris (Minerva), 40 sec. Collier proved the victor in this event, finishing first in 7 min. 26 3-5 sec. but an inefficient silencer was also the cause of his disqualification, his place being taken by the second man, Hooydonk. For Heat 3 another batch of five competitors came out:—J. F. Crundall (Humber), and H. W. Stone (Rex), both being on scratch, W. Parry (Minerva), 5 sec., C. H. Richards (Minerva), 25 sec., and B. Gylee (Minerva), 40 sec. This proved to be the most exciting and yet the most disappointing race of the afternoon. Crundall and Stone rode a neck and neck race, and quickly overhauled two of the riders. Unobservedly, however, Richards had been steadily forging ahead on his Minerva, and, to the surprise of the spectators, passed both Crundall and Stone. Steadily increasing his lead, the heat seemed a foregone conclusion when, to the astonishment of everybody, it was seen that Richards had stopped—for want of petrol! The heat finished with Stone in the first place (7 min. 58 2-5 sec.) followed by Crundall. There were five entries for Heat 4, but only Bert Yates turned out, his time for the five miles being 7 min. 13 3-5 sec. The final was a battle of giants, as will be seen from the fact that the time was only 6 min. 54 4-5 sec. The competitors were J. Leonard, J. Van Hooydonk, H. Stone, B. Yates and J. F. Crundall. The latter started as the fastest loser, but did not finish owing to ignition troubles. The race proved a victory for J. Leonard (Humber), J. Van Hooydonk being second, B. Yates third.

The third event of the programme consisted of a series of mile time trials with a flying start for the "Automotor Journal" cup, open to motor bicycles with engines having a total capacity in which the diameter in mm., multiplied by the diameter in mm., multiplied by the stroke in

mm., does not exceed 440,000, that is 76 by 76. Machines not to exceed 170 lbs. in weight. Out of the fourteen entries, thirteen competed. The best time was made by C. R. Collier (Matchless), 1 min. 15 sec., but he was again disqualified on the silencer question, the result being J. F. Crundall, 1 min. 19.2-5 sec., first; J. Van Hooydonk, 1 min. 19.3-5 sec., second; J. Leonard, 1 min. 24.3-5 sec., third.

In addition to the cups, first, second and third prizes, consisting of gold, silver and bronze medals, were awarded to the riders of the winning machines in each event.

THE MOTOR CAR ACT, 1903.

THE following is the text of this Act to amend the Locomotives on Highways Act, 1896:—

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1.—(1) If any person drives a motor-car on a public highway recklessly or negligently, or at a speed or in a manner which is dangerous to the public, having regard to all the circumstances of the case, including the nature, condition, and use of the highway, and to the amount of traffic which actually is at the time, or which might reasonably be expected to be, on the highway, that person shall be guilty of an offence under this Act.

(2) Any police constable may apprehend without warrant the driver of any car who commits an offence under this section within his view, if he refuses to give his name and address or produce his licence on demand, or if the motor-car does not bear the mark or marks of identification.

(3) If the driver of any car who commits an offence under this section refuses to give his name or address, or gives a false name or address, he shall be guilty of an offence under this Act, and it shall be the duty of the owner of the car, if required, to give any information which it is within his power to give, and which may lead to the identification and apprehension of the driver, and if the owner fails to do so he also shall be guilty of an offence under this Act.

2.—(1) Every motor-car shall be registered with the council of a county or county borough, and every such council shall assign a separate number to every car registered with them.

(2) A mark indicating the registered number of the car and the council with which the car is registered shall be fixed on the car or on a vehicle drawn by the car, or on both, in such manner as the council require in conformity with regulations of the Local Government Board made under this Act.

(3) A fee of twenty shillings shall be charged by the council of a county or county borough on the registration of a car, except in the case of motor-cycles, for which the fee shall be five shillings.

(4) If a car is used on a public highway without being registered, or if the mark to be fixed in accordance with this Act is not so fixed, or if, being so fixed, it is in any way obscured or rendered or allowed to become not easily distinguishable, the person driving the car shall be guilty of an offence under this Act, unless, in the case of a prosecution for obscuring a mark or rendering or allowing it to become not easily distinguishable, he proves that he has taken all steps reasonably practicable to prevent the mark being obscured or rendered not easily distinguishable.

Provided that—

(a) A person shall not be liable to a penalty under this section if he proves that he has had no reasonable opportunity of registering the car in accordance with this section, and that the car is being driven on a highway for the purpose of being so registered; and

(b) The council of any county or county borough in which the business premises of any manufacturer of, or dealer in, motor-cars are situated, may, on payment of such annual fee, not exceeding three pounds, as the council require, assign to that manufacturer or dealer a general identification mark which may be used for any car on trial after completion, or on trial by an intending purchaser, and a person shall not be liable to a penalty under this section while so using the car if the mark so assigned is fixed upon the car in the manner required by the council in accordance with regulations of the Local Government Board made under this Act.

3.—(1) A person shall not drive a motor-car on a public highway unless he is licensed for the purpose under this section, and a person shall not employ any person who is not so licensed to drive a motor-car.

If any person acts in contravention of this provision he shall be guilty of an offence under this Act.

(2) The council of a county or county borough shall grant a licence to drive a motor-car to any person applying for it who resides in that county or county borough on payment of a fee of five shillings, unless the applicant is disqualified under the provisions of this Act.

(3) A licence shall remain in force for a period of twelve months from the date on which it is granted, but shall be renewable, and the same provisions shall apply with respect to the renewal of the licence as apply with respect to the grant of the licence.

(4) A licence must be produced by any person driving a motor-car

when demanded by a police constable. If any person fails so to produce his licence, he shall be liable, on summary conviction, in respect of each offence, to a fine not exceeding five pounds.

(5) Any person under the age of seventeen years shall be disqualified for obtaining a licence (except that a licence limited to driving motor-cycles may be granted to a person over the age of fourteen years), and any person who already holds a licence shall be disqualified for obtaining another licence while the licence so held by him is in force.

4.—(1) Any court before whom a person is convicted of an offence under this Act, or of any offence in connection with the driving of a motor-car, other than a first or second offence, consisting solely of exceeding any limit of speed fixed under this Act—

(a) may, if the person convicted holds any licence under this Act, suspend that licence for such time as the court thinks fit, and, if the court thinks fit, also declare the person convicted disqualified for obtaining a licence for such further time after the expiration of the licence as the court thinks fit; and

(b) may, if the person convicted does not hold any licence under this Act, declare him disqualified for obtaining a licence for such time as the court thinks fit; and

(c) if the person convicted holds any licence under this Act, shall cause particulars of the conviction and of any order of the court made under this section, to be endorsed upon any licence held by him, and he shall also cause a copy of those particulars to be sent to the council by whom any licence so endorsed has been granted.

(2) Any person so convicted, if he holds any licence under this Act shall produce the licence within a reasonable time for the purposes of endorsement, and if he fails to do so shall be guilty of an offence under this Act.

(3) A licence so suspended by the court shall during the term of suspension be of no effect, and a person whose licence is suspended or who is declared by the court to be disqualified for obtaining a licence shall during the period of suspension or disqualification be disqualified for obtaining a licence.

(4) Any person who is by virtue of an order of the court under this section disqualified for obtaining a licence may appeal against the order in the same manner as a person may appeal who is ordered to be imprisoned without the option of a fine; and the court may, if they think fit, pending the appeal, defer the operation of the order.

(5) If any person, who under the provisions of this Act is disqualified for obtaining a licence, applies for or obtains a licence while he is so disqualified, or if any person whose licence has been endorsed applies for or obtains a licence without giving particulars of the endorsement, that person shall be guilty of an offence under this Act, and any licence so obtained shall be of no effect.

5. If any person forges or fraudulently alters or uses, or fraudulently lends or allows to be used by any other person, any mark for identifying a car or any licence under this Act he shall be guilty of an offence under this Act.

6. A person driving a motor-car shall, in any case, if an accident occurs to any person, whether on foot, on horseback, or in a vehicle, or to any horse or vehicle in charge of any person, owing to the presence of the motor-car on the road, stop, and if required, give his name and address, and also the name and address of the owner and the registration mark or number of the car; and if any person knowingly acts in contravention of this section, he shall be liable, on summary conviction, in respect of the first offence to a fine not exceeding ten pounds, and in respect of the second offence to a fine not exceeding twenty pounds, and in respect of any subsequent offence to a fine not exceeding twenty pounds, or, in the discretion of the court, to a term of imprisonment not exceeding one month.

7.—(1) The Local Government Board may, under section six of the Locomotives on Highways Act, 1896 (in this Act referred to as the principal Act), make regulations—

(a) providing generally for facilitating the identification of motor-cars, and in particular for determining, and regulating generally the size, shape, and character of the identifying marks to be fixed under this Act, and the mode in which they are to be fixed and to be rendered easily distinguishable whether by night or by day, and with respect to the registration of cars, and the entry of particulars, including particulars of the ownership of the car, in the register, and the giving of those particulars, and for making any particulars contained in the register available for use by the police, and for making the registration of a car void if the regulations as to registration are not complied with; and

(b) with respect to the licences to be granted by the councils of counties or county borough, under this Act, and in particular with respect to the register to be kept of those licences and the renewal of licences, and for providing special facilities for granting licences to persons not resident in the United Kingdom, and for communicating particulars thereof to adjoining and other county or county borough councils, and for making any particulars with respect to any persons whose licences are suspended or endorsed available for use by the police, and for preventing a person holding more than one licence.

(2) The councils of counties and county boroughs shall comply with any regulations so made by the Local Government Board, and may if

authorised by those regulations and in accordance therewith charge in respect of the entry of particulars of the ownership of a car on change of ownership such fee, not exceeding ten shillings, as may be prescribed by the regulations, and in respect of the issue of a new licence in the place of a licence lost or defaced such fee not exceeding one shilling as may be prescribed by the regulations.

8. The Local Government Board may, by regulations made under section six of the principal Act, prohibit or restrict the driving of any motor cars, or of any special kind of motor-cars, on any specified highway, or part of a highway, which does not exceed sixteen feet in width, or on which ordinary motor-car traffic would, in their opinion, be especially dangerous.

9.—(1) Section four of the principal Act (which relates to the rate of speed of motor-cars) is hereby repealed, but a person shall not, under any circumstances, drive a motor-car on a public highway at a speed exceeding twenty miles per hour, and, within any limits or place referred to in regulations made by the Local Government Board with a view to the safety of the public on the application of the local authority of the area in which the limits or place are situate, a person shall not drive a motor-car at a speed exceeding ten miles per hour.

If any person acts in contravention of this provision he shall be liable, on summary conviction, in respect of the first offence to a fine not exceeding ten pounds, and in respect of the second offence to a fine not exceeding twenty pounds, and in respect of any subsequent offence to a fine not exceeding fifty pounds, but a person shall not be convicted under this provision for exceeding the limit of speed of twenty miles merely on the opinion of one witness as to the rate of speed.

(2) Where a person is prosecuted for an offence under this section, he shall not be convicted unless he is warned of the intended prosecution at the time the offence is committed, or unless notice of the intended prosecution is sent to him or to the owner of the car as entered on the register within such time after the offence is committed, not exceeding twenty-one days, as the court think reasonable.

(3) The Local Government Board may, without any application from the local authority, after considering any objections which may be raised by the local authority, revoke or alter any regulation made by them under this section.

(4) For the purposes of this section the expression local authority means—

- (a) as respects the City of London, the mayor, aldermen, and commons of the City of London in common council assembled; and
- (b) as respects a municipal borough with a population of over ten thousand according to the last census taken before the passing of this Act, the council of the borough; and
- (c) as respects any other area, the county council.

10.—(1) Local authorities within the meaning of the last preceding section shall give public notice of any regulation of the Local Government Board made in pursuance of this Act prohibiting or restricting the use of motor-cars on any highway or part of a highway, or limiting the speed of motor-cars within any limits or place, and for the purpose of giving effect to any such regulation shall place notices in conspicuous places on or near the highway, part of a highway, limits, or place to which the regulation refers.

(2) Subject to regulations as to size and colours to be made by the Local Government Board, local authorities within the meaning of the last preceding section shall within their areas cause to be set up sign posts denoting dangerous corners, cross-roads, and precipitous places, where such sign posts appear to them to be necessary.

11.—(1) A person guilty of an offence under this Act for which no special penalty is provided shall be liable on summary conviction in respect of each offence to a fine not exceeding twenty pounds, or in the case of a second or subsequent conviction to a fine not exceeding fifty pounds, or in the discretion of the court to imprisonment for a period not exceeding three months.

(2) Any person adjudged to pay a fine exceeding twenty shillings under this Act may appeal against the conviction in the same manner as he may appeal if ordered to be imprisoned without the option of a fine.

12.—(1) The Local Government Board by regulations made under section six of the principal Act may, as respects any class of vehicle mentioned in the regulations, increase the maximum weights of three tons and four tons mentioned in section one of that Act, subject to any conditions as to the use and construction of the vehicle which may be made by the regulations.

(2) The power of the Local Government Board to make regulations under section six of the Locomotives on Highways Act, 1896, shall, as respects motor-cars exceeding two tons in weight unladen, include a power to make regulations as to speed.

13. The definition of "male servant" in subsection three of section nineteen of the Revenue Act, 1869, as amended by section five of the Customs and Inland Revenue Act, 1876, shall be construed as if a person employed to drive a motor-car were included in that definition.

14. Subsections one and five of section eighty-seven of the Local Government Act, 1888 (which relates to local inquiries), shall apply for the purpose of the carrying out by the Local Government Board of any of their duties under this Act.

15. Nothing in this Act shall affect any liability of the driver or owner of a motor-car by virtue of any statute or at common law.

16. It is hereby declared that this Act and the principal Act apply to persons in the public service of the Crown.

17.—(1) A motor-car shall not be driven on or over Menai Bridge except in accordance with regulations made by the Commissioners of Works.

(2) If any person acts in contravention of this section he shall be liable on summary conviction in respect of the first offence to a fine not exceeding ten pounds, and in respect of the second offence to a fine not exceeding twenty pounds, and in respect of any subsequent offence to a fine not exceeding fifty pounds.

18. In the application of this Act to Scotland—

- (1) a reference to the Secretary for Scotland shall be substituted for a reference to the Local Government Board; and
- (2) a reference to the council of a royal, parliamentary, or police burgh, containing within its boundaries, as ascertained, fixed, or determined for police purposes, a population according to the census for the time being last taken of or exceeding fifty thousand, shall be substituted for a reference to the council of a county borough, and every other burgh shall be deemed to form part of the county within which it is situate; and
- (3) the road authority of any county or of any royal, parliamentary, or police burgh shall be the local authority within the meaning of the provisions of this Act which relate to the rate of speed and the erection of danger boards; and
- (4) a reference to subsections one and three of section ninety-three of the Local Government (Scotland) Act, 1889, shall be substituted for a reference to subsections one and five of section eighty-seven of the Local Government Act, 1888; and
- (5) any fine under this Act shall be recoverable by imprisonment in terms of the Summary Jurisdiction Acts; and
- (6) any person convicted of an offence under this Act and ordered to be imprisoned without the option of a fine or adjudged to pay a fine exceeding ten pounds shall have a right of appeal against the conviction. Such appeal shall lie to the sheriff depute, and shall be heard summarily. Such appeal may be taken either immediately after the judgment appealed against has been pronounced or within seven days thereafter, and upon such appeal being taken the sentence (if any) shall be suspended until the appeal has been disposed of: Provided that the appellant shall, at the time of taking such appeal, lodge in the hands of the clerk of court a bond with sufficient cautioner or otherwise give security satisfactory to the court for appearing before the sheriff depute. The sheriff depute is hereby authorised and empowered on such appeal to hear evidence, whether led at the original hearing or not, and to reconsider the merits of the case and reverse or confirm in whole or in part the judgment appealed against, or give such new or different judgment as he in his discretion shall think fit; and save as provided by the Summary Prosecutions Appeals (Scotland) Act, 1875, his judgment shall be final and not subject to review; and
- (7) An appeal taken in terms of this Act by a person holding a license against an order for suspension or disqualification shall be taken and disposed of as nearly as may be in the manner and subject to the conditions provided by the immediately preceding subsection.

19. In the application of this Act to Ireland—

- (1) A reference to the Local Government Board for Ireland shall be substituted for a reference to the Local Government Board; and
- (2) Subsections one and three of article thirty-two of the Local Government (Application of Enactments) Order, 1898, shall be substituted for subsections one and five of section eighty-seven of the Local Government Act, 1888; and
- (3) Section twenty-three of the Summary Jurisdiction (Ireland) Act, 1851 (which gives a right of appeal), shall apply as respects convictions for offences under this Act as if any term of imprisonment without the option of a fine were substituted for a term of imprisonment exceeding one month; and
- (4) Sections one to four, inclusive, of the Criminal Evidence Act, 1898, shall extend to Ireland in the case of a person charged with any offence under this Act.

20.—(1) In this Act the expression "motor-car" has the same meaning as the expression "light locomotive" has in the principal Act, as amended by this Act, except that, for the purpose of the provisions of this Act with respect to the registration of motor-cars, the expression "motor-car" shall not include a vehicle drawn by a motor-car.

The provisions of this Act and of the principal Act shall apply in the case of a roadway to which the public are granted access in the same manner as they apply in the case of a public highway:

(2) This Act shall come into operation on the first day of January nineteen hundred and four.

(3) This Act may be cited as the Motor Car Act, 1903; and the Locomotives on Highways Act, 1896, and this Act may be cited together as the Motor Car Acts, 1896 and 1903.

21. This Act shall continue in force till the thirty-first day of December, nineteen hundred and six, and no longer, unless Parliament shall otherwise determine.

FURIOUS DRIVING CASES. MOTOR-CARS.

Court.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Hailsham.....	C. Elmslie, Eastbourne	32	£5, etc.
"	F. Harnell, Cadogan Place, W.	23	£10, etc.
"	L. de Silva, Maida Vale	28	£3, etc.
"	J. Adams, Bryanston Mews	28	£5, etc.
"	S. Bindon, Eastbourne	—	£2, etc.
"	W. Jones, Eastbourne	—	£2, etc.
"	W. H. Woolley, Eastbourne	30	£2, etc.
Horsham	Countess de la Warr, Bexhill	23	40s., etc.
Southampton	H. Hobson, Basinghall St., E. C.	—	£1.
Whitechurch	J. A. Lloyd	21	£3, etc.
"	A. Brooks	—	£10, etc.
Llandrindod	E. I. Stanley, Coventry	—	£3 6s
Wells	"	—	£3, etc.
Romsey	E. M. C. Instone, Coventry	—	£3, etc.
Deddington...	G. Hargreaves	30	£10, etc.
"	A. L. Landaquet (driver to the Duke of Marlborough)	—	£3, etc.
"	J. Reynolds (driver to Lady Grenfell)	—	£3, etc.
Huntingdon	H. F. Bigge, St. Albans	21	£3, etc.
"	E. A. Tubb, London, E.C.	30	£4, etc.
"	J. W. Stocks, London, W.	19	£2, etc.
Welwyn	A. L. Allen, Hitchin	30	£5, etc.
London, Marlborough St.	A. Ross, Erith	—	£2, etc.
"	J. La Plain, Brompton	—	Adjourned.
"	J. McCarthy, Finchley	—	£2.
"	G. Oakey, London, W.	—	£3.
"	H. H. Burkitt, Hampstead	—	£2.
"	A. Canty, Kilburn	—	Adjourned.
"	V. Hall, London, E.	—	£2.
"	G. Green, Kensington	—	£1.
"	S. Clark, London, W.	—	£2.
"	L. Annen, London, W.	—	£1.
"	W. Masser, London, W.	—	£2, etc.
"	F. Baker, London, W.	—	£3.
"	Miss Schiff, London, W.	—	£3.
"	M. Ford, London, W.	—	£5.
Tonbridge ...	J. H. Cooper, Bexhill	26	£2, etc.
"	L. Smith, Birmingham	40	£2, etc.
"	A. W. Windsor, Birmingham	40	£2, etc.
"	F. M. Green, London	26	£2, etc.
Horsham ...	C. Abbott, Kingston-on-Thames	25	£2, etc.
"	S. Parr, Oxford	25	£2, etc.
"	R. Jones, Ascot	31	£2, etc.
"	F. Menzies, Merton	27	£2, etc.
"	R. Brown, London	28	£3, etc.
Isle of Wight	L. Fletcher	20	£4 16s.
Croydon	E. Richard, Long Acre	26	£1 5s.
Havant	A. P. Cunliffe, Piccadilly, W.	—	£5, etc.
"	Capt. Hope, Hilsa	—	£5, etc.
Mortlake.....	C. Chard, Lambeth	25	£5, etc.
Alton	F. Ostler, Guildford	—	40s.
Kingston.....	A. Seeney, Park Lane, W.	—	£2.
Watford	J. Gabriel, Pimlico	20	£10, etc.
St. Neots.....	A. J. Drexel, Wytham Abbey, Berks	27	£8.
"	F. L. Wallace, Eaton Place, S.W.	22	£6.
"	H. L. Clark, New Galloway	21	£5.
Norman Cross	M. Faroux, Harrogate	29	£8, etc.
"	F. St. Quinton, Chelsea	25	£7, etc.
"	C. Whale, London, E.C.	21	£5, etc.
Aldershot ...	Lient. Walker, 14th Hussars	—	£10, etc.
Birmingham	G. Woolridge, Birmingham	—	£5, etc.
Woolwich ...	W. Guest, Bow, E.	23	£3.
Coleshill	S. H. Pearce, Hampstead	—	£5, etc.
Ruabon	G. Chapman, Liverpool	21	£2, etc.
Manchester...	J. Hicks, Heaton Park	20	10s., etc.
Market Harborough	W. Dalrymple, Leicester	18	£5.
Thorpe.....	L. Fullagher, Hertford	—	£4.
Rolleby	F. Smith (driver to Mr. H. Harmsworth).	21	£10, etc.
Malling (Kent)	A. Cutbill, Forest Hill	18	£6 17s. 6d.
"	J. E. Money Penny, London	—	£3, etc.
"	T. H. Nash, St. Paul's Gray	—	£3, etc.
"	S. B. Lynch, Kensington	—	£3, etc.
"	J. S. Gibson, Herne Hill	—	£3, etc.
"	E. J. Richardson, London	—	£3, etc.
"	J. W. Nicholls, Barnes	—	£3, etc.
"	T. L. Spencer, Sevenoaks	—	£3, etc.
"	M. Devenish, Addington Park	—	£3, etc.
"	W. Andrews, West Brompton	—	£3, etc.

MOTOR-CYCLES.

Denbigh	A. Monk, Chester	20	£3, etc.
Ruabon	S. W. Kay, Stockport	22	£1, etc.
Stockport ..	A. Sampson, Fallowfield	—	23s., etc.
Scarborough	F. Young, Sevenoaks	—	Dismissed.
Ryde, I. W. ...	B. Taylor, Sandown	—	To pay costs.
Andover	Capt. Middleton	15	£1, etc.
"	T. Foster	30	£1, etc.
Pontypridd ...	F. Morris, Pontypridd	25	40s., etc.

Where no alleged speed is given it is understood to be above the legal limit.

THE SPEED OF TRAMCARS.

At the West London Police Court, on Saturday, four drivers in the employment of the London United Electric Tramcar Company appeared to answer adjourned summonses taken out by Mr. Moffat Ford, for driving their cars at a speed exceeding the ten miles an hour limit laid down in the Board of Trade regulations. At the first hearing of the case it was contended that the Board of Trade were not empowered to make regulations as to speed, but Mr. Muir, for the company, at the second hearing stated that the defence raised no point of law. He said the tramway company could conclusively prove that none of the cars timed by the prosecutor could go at a greater speed than 13 miles an hour, and he suggested that an independent test might be made by an official of the Board of Trade for the benefit of the Court. The magistrate said the matter was important, and he thought the learned counsel's suggestion a good one. He adjourned the summonses in order that an official test might be arranged.

THE MIDLAND HILL CLIMB.

THE official results of the hill-climbing competition on Sun Rising Hill, on the 25th ult., have been declared as follows:—

	Entrant.	Net Time Secs.	Score.	Rate per Mile.
1	20-h.p. Napier (C. Edge)	115.8	599	17.664
2	10-h.p. Lanchester (J. V. Pugh)	265.8	854	7.695
3	10-h.p. Lanchester (A. Millership)	264.6	866	7.73
4	20-h.p. Wolseley (A. E. Crowdy)	165	913	12.395
5	20-h.p. M.M.C. (G. Iden)	141.8	955	14.425
6	10-h.p. Lanchester (F. W. Keen)	297.6	957	6.873
7	6½-h.p. Cadillac (F. S. Bennett)	252.8	962	8.091
8	10-h.p. Lanchester (C. V. Pugh)	307.6	972	6.649
9	15-h.p. Panhard (Hon. C. S. Rolla)	156.2	984	13.095
10	16-h.p. Lanchester (G. H. Lanchester)	194.4	1,028	10.521
11	16-h.p. Rochet (H. H. P. Deasy)	197.4	1,034	10.362
12	10-h.p. Lanchester (M. R. Lawrence)	308.6	1,039	6.628
13	12-h.p. Wolseley (H. Austin)	236.4	1,044	8.652
14	18-h.p. James & Browne (T. B. Browne)	177.6	1,057	11.517
15	22-h.p. Daimler (E. W. Lewis)	153.6	1,107	13.316
16	24-h.p. Panhard (J. A. Holder)	152	1,302	13.457
17	24-h.p. Wolseley	175.6	1,393	11.648

POLICE TRAPS.

ABOUT a mile out of Chorley, on the road to Preston, the police have a well-laid trap.

THERE is a trap in the town of Witney (Oxon), and another just outside on the Cheltenham road. Motorists, especially riders of motor cycles, should be careful.

THERE is a trap at Hook, just before reaching the fourth milestone on the Brighton road.

A two mile trap has been established between Martham and Somerton, and motorists caught thereon will be required to appear at the court-house at Rollesby.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, SEPTEMBER 5, 1903.

[No. 235.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE accommodation and housing of the automobile is an important factor in the upkeep of a motor-car, and the subject is one which offers scope for much ingenuity on the part of owners. Some few months ago we gave examples of what was being done in the United States, and now we invite our readers to make known their difficulties and how they

have been overcome. The practical experience of motorists will be useful to all who own cars, and the subject is one of value as well as of interest. In London and suburbs there are difficulties in the case of houses already built, and architects will do well to remember, in designing new houses and planning out new estates, the necessities of the modern man who owns a motor-car.

Changes in Long Acre.

WE have previously referred to the change wrought by the motor-car in what used to be the classic thoroughfare of the London carriage manufacturers—Long Acre. One hostelry there, the White Horse, though rebuilt latterly, long continued to have something of the genuine old Sam Wellerian ostler's tradition. But the London correspondent of the "Manchester Guardian" notices that a small swing-sign now projects from its doorway over the pavement with the significant legend—"Rendezvous des Automobilistes." In this the London publican is following the example of the gentleman at Kilcullen, who, during the Irish Automobile Fortnight, re-christened his house "Flanagan's Motor Bar."

Motor Mails Wanted.

IN the Whitehaven district, the question of the delivery of mails has assumed the importance of public discussion, and, at the last meeting of some local councils, reference was made to the inconvenience of the postal service between Egremont and Frizlington. According to many of the councillors, the only solution is to provide motor vehicles in place of horse-drawn vans, and a resolution to that effect has been approved, authorising a letter to the Postmaster-General, asking that a motor mail may be substituted for the present system of carrying postal parcels to the places we have named.

Have the Money Ready.

OWNERS of motor-cars who are unrepresented at the hearing of cases of alleged furious driving run the risk of the summonses being adjourned, thus causing annoyance and inconvenience. Latterly many owners have sent their servants to represent them, recognising full well the difficulty of securing a dismissal, even if they have a solicitor to plead.

In such cases they should take care that they supply their representatives with plenty of spare money with which to pay any fines that may be inflicted. The other day M. Henri Damoulu, of Lancaster-gate, who was summoned at Beaconsfield for travelling twenty miles an hour, was fined £3 and costs. He sent a servant to represent him, but as the latter had no money to pay the penalty, he was kept in the guard room at the police station until it arrived by telegraph.

Motor-Car Legislation in India.

THE following announcement has just been issued by the Acting Secretary to the Government of Bombay:—"An application has been received by Government from certain gentlemen proposing to get up a company for a motor-car service between Poona and Mahableshwar, and having regard to the large initial expenditure to be incurred, asking for a guarantee to secure them from the competition of other motor-car companies for a limited number of years on terms to be agreed on as to the fares to be charged and conditions to be observed. The promoters have been informed that under the present law no guarantee can be given, but the Government hope to legislate shortly on the subject, after which their application will be disposed of. The Bill for the Control of Motor-cars will, it is hoped, be laid before the Legislative Council before the end of the current year."

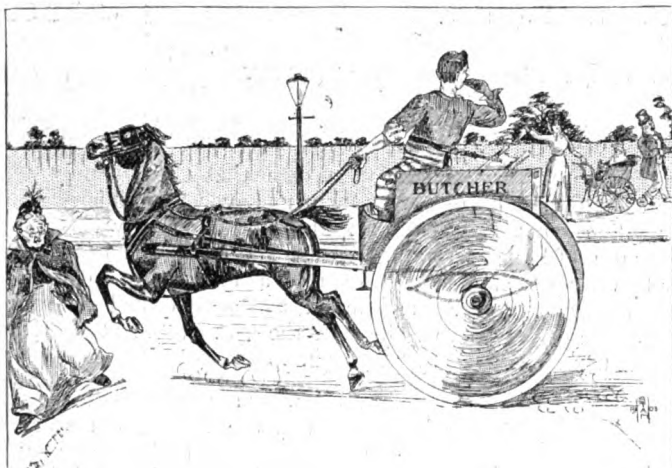
An Inquiry.

AT the time of the Gordon Bennett race we, in common with other newspapers, were seriously handicapped by the breakdown in the telegraphic arrangements for the transmission of messages from Ballyshannon to London. Private inquiries by our correspondent in Dublin elicited that the delay was probably due to undermanning in the Irish capital. Anyhow, the matter was so serious as to cause Mr. Austen Chamberlain to promise an inquiry into the whole subject. The report of the experts appointed for the purpose has now been submitted to the Postmaster-General, who has completely exonerated the special staff at Ballyshannon from all blame and responsibility in the matter. This seems the usual procedure in connection with official inquiries into departmental disorganisation. But to exonerate the staff at Ballyshannon does not at all deal with the cause of the delay. That there were delays was undoubted, and the inquiry should have concerned itself with finding out where they occurred, rather than select one particular spot, and tell us that those there stationed were not at all to blame in the business.

Closing the Roads.

A FORTNIGHT ago we referred to the fact that the Hampshire County Council was beginning to move in the direction of obtaining a list of roads to be recommended to the Local Government Board as unsuitable for automobile traffic. The Isle of Wight County Council is now similarly concerning itself within the area of its jurisdiction, and at the other end of the

country, namely in Inverness-shire, the local Farmers' Society is writing to the local County Council, saying that they will support any action which might be taken by that body for the purpose of scheduling such roads as might be declared unfit for motor-car traffic. We mention this as typical of the anxiety of local authorities and anti-motorists to get quickly to work, and also with the idea of impressing upon those who drive, the necessity of being extremely careful not to do anything to unnecessarily irritate local public opinion.



Why not a Legal Limit on this Sort of Thing?

Irritating the Public.

THIS is a matter which it would seem cannot be too frequently mentioned, for the bad conduct of one or two motorists has been sufficient to bring the whole body of drivers into disrepute. A piece of incivility on the part of a motorist driving through the Welbeck estate has recently led the Duke of Portland to close the roads on his property in that district to motorists. While all will regret this decision, none will feel that His Grace has been acting hastily or without cause, for he has always shown himself a real sportsman, and naturally feels indignant that he should have been insulted in his own grounds. Away in the Potteries, too, another motorist, hurtling along the highway at thirty miles an hour, came into collision with a flock of sheep, killing three of them. Although he gave, it is alleged, the wrong name and address, the police were able to take him to the Court, with the result that he was fined £10 and costs; none too light a penalty in view of the bad effect such conduct must have upon public opinion.

Mean Motorists.

A SIMILAR case of bad form on the part of a motorist is reported to us by the Mohawk Motor Company, of Chalk Farm, N.W. The other day they were driving a 9-h.p. De Dion car, and as the driver of a 12-h.p. Darracq in front was going slowly, they passed him. He let them get a good bit ahead, and then passed at a higher speed. They were glad to hang back to avoid the dust; a few miles further on they again passed him, as he was hung up for a roadside repair. They had perhaps gone three or four miles when he passed again at about thirty miles an hour. Not content with this, he pulled up now and again, so as to keep them in his dust all the time. They again hung back to avoid it, when suddenly the dust ceased, and on coming up it was found he had been stopped by the police, and, as they thought, had been trapped. When their car came up, and the police wanted their name and address as well, this Sportsman (?) got out of his car, and said the De Dion driver had been having a game with him, although it was the other way about. The inspector came up on a bicycle, told the police to let the first red car go, detaining the Mohawk red car. This type of mean motorist would be well off the road without the

option of a fine, which doubtless the Mohawk Company will have to pay in the course of a few days.

The Reliability Trials.

ELSEWHERE we publish the list of entries for the Automobile Club Trials. There is a total of seventy-six British cars, compared with forty-one in 1902; the increase of foreign cars being from forty-three to only fifty-nine. Thus it will be seen that the British increase is 85 per cent., while that of the foreign entries is only 37 per cent. There is a net increase of sixteen in the number of British firms in the list of competitors, which is in itself a strong argument against too stringent administration of the law. The principal increase is in cars costing under £400, the annual upkeep of which should certainly not, in the opinion of the Club, exceed £50 per annum, and of this type upwards of fifty cars are entered for the trials. Out of a total of 140 entries, only ten are steam cars. A noticeable fact in connection with the largely increased list of entries is that the foregoing summary takes no note whatever of motor-bicycles. The rapid development of the "poor man's horse" is forcibly brought out by the fact that the Club found it necessary this year to remove the motor-cycles from among the cars and to organise an entirely separate series of trials, a course which found full justification in an increase of from four cycles in 1902 to no less than forty-eight in the present year.

Why Gordon-Bennett?

STILL the words Gordon Bennett appear in the newspapers, echoes of the great race in Ireland in July being heard from every quarter. It is strange that the hyphen should have crept into a name which has become memorable in the annals of automobilism as well as of the newspaper press. Mr. James Gordon Bennett has not yet, however, become the possessor of a double-barrelled cognomen, despite the persistency of some contemporaries in jointing up his Christian with his surname.



Mr. J. T. Overton on his Georges Richard Car in Dublin.

The Manufacture of Convictions.

WHEN boys go out to lay traps for birds, they catch all the birds they possibly can, and they go with the intention of catching them. Precisely the same thing happens when the boys are policemen and the birds are motorists; they trap every motor-car that comes along.

Messrs. Firth and Co. call our attention to two cases which should be exposed, which we cannot do better than in their own words. In the first case, a motorist was caught in the police trap at Bagshot. The police sergeant swore that the car had covered one-fifth of a mile in thirty-eight seconds, and ostentatiously put a cheap stop watch in the driver's face to prove what he said. As the automobilists knew this to be incorrect, one of them asked him if he set the stop watch at thirty-eight seconds overnight, or before he came out in the morning. He was also asked if anyone saw him start the watch or stop it. It was obvious to those in the car that the stop watch was used solely to give materiality to the sergeant's evidence. The Chertsey Bench, however, were so satisfied that the police evidence was false that they dismissed the case.

Another Case.

IN the second case, at Gillingham, in Dorset, the police made provision for a crusade against motor-cars. A gentleman was driving from Gillingham to his country seat. Passing out of the town there is a very sharp bend over the railway bridge, which necessitates any driver, for his own safety, slowing down to considerably under twelve miles an hour. The

yards away, but he further stated that he was between the police and the children. He also contradicted the statement by the police when they said they got the children off the road, and he also said there were only two or three, not seven or eight, and that none of them were in danger, as they had plenty of time to get on to the path, but he was so well versed in the speed question that he still stuck to his thirty miles an hour.

Contradictory Evidence.

A WITNESS was then called who sat on a wagon, the driver of which had given him a friendly lift, and he stated that the car was going at thirty miles an hour, and that his friend, who was driving, gave a jump and pulled the horses almost into a ditch in consequence of the speed of the motor. This evidence, like the rest, was collected by the police and was given by an inhabitant of the district. On cross-examination, however, it appeared that the jump was not a jump at all, but that the only thing he did was, in consequence of his horses being in the middle of the road and taking up the whole of the highway, to pick up his reins and pull his horses on to his proper side, and it was elicited that he had plenty of time to get his wagon out of the way before the car came by, and that it passed without inter-



Photo by]

A Reminiscence of the Irish Portnight. At the Hill Climb, Castlewellan.

[Argent Archer.

motorist was summoned for driving to the danger of passengers on the highway. The police constable was first called, who stated he was in company with a sergeant, and heard a motor-car coming behind from Gillingham; that there were seven or eight children playing in the road in front of them who evidently did not hear the car coming until he and the officer with him shouted to them and took steps to get them off the road, upon which the children ran on to the green on the opposite side of the road, and instantly the car passed by the children and the policemen, going at a furious rate, which he estimated at thirty miles an hour; he also stated that at the time there was a baker's cart, a wagon, and two horses, and several vehicles, cyclists, and foot passengers on the road. He stated that at the time he was only two or three yards from the children, which enabled him to get them off the road, and if he had not been there they must have all been killed. A police sergeant having corroborated, the driver of the baker's cart stated he was not in his cart, but that his pony and cart were standing on the side of the road, and he admitted that he had been serving bread at a house, and that his pony was unattended, but that it took no notice of the car, which passed at a speed which he also unhesitatingly fixed at thirty miles an hour precisely. He swore that he himself was near the children, and that the policemen were about 300 yards away; when he was pressed, however, in favour of the police, and they endeavoured to alter this statement, they could only get him to alter it to 200

fering with his horses one way or the other, and the driver never moved from his seat, which was on the shafts of the wagon. All the witnesses swore that the speed was thirty miles an hour, when, in fact, it was under twelve. The defendant, and a gentleman with him on the car, gave evidence that at the time and place in question they were not going more than ten or eleven miles an hour, as they had only just stopped at a shop in the town, the streets of which were busy, that they had to go over the bridge, and that immediately they turned the corner they came in sight of the policemen who gave evidence in the case, and—withstanding this evidence, and notwithstanding the fact that the evidence of the prosecution proved, out of their own witnesses' mouths, that the tale of the children had been so unsatisfactorily given—there were a minority of the magistrates who desired to convict, but happily it was not a Kingston, Reigate, Huntingdon, or Horsham bench, and the case was dismissed.

New London Motor Omnibus Service.

IN our last issue we mentioned that the motor omnibus service between Oxford Circus and Cricklewood had ceased running. The vehicles have been acquired by the London Power Omnibus Company, who are building an extensive garage and central depot and offices at Salisbury Road, Kilburn.

The building is already well advanced, and is expected to be ready for occupancy in about six weeks' time. The depot is designed for the accommodation of fifty motor omnibuses, all on the street level. The upper floor will be occupied as offices, mechanics' shops and store. On the same floor a section has been set apart for the "living in" of a staff of over fifty men. There are two distinct entrances to the depot. Omnibuses will leave by the front entrance, and return by the side gateway which leads to the yard and washing court. Without further handling they will pass on to the inspection department, where the vehicles will be thoroughly overlooked and lubricated, thence they will pass on to the departure gangway. The first route to be served by the company will be from Salisbury Road or Queen's Park Station, via Brondesbury Road, to Kilburn Station, thence direct to Marble Arch. A commencement will be made with a ten minutes' service, to be increased, morning and evening, to a five minutes' service. In the first instance only Stirling single-deck omnibuses, to seat twelve and fourteen passengers each, will be started, to be followed before the end of the year with the new Stirling double-decked omnibuses to carry twenty-eight passengers.

Motor-Boat Races.

THE first really important race for motor-boats began last Sunday morning. Hitherto races of this kind have been single day events over a comparatively short course, but in this case the course is from Paris to Trouville down the Seine, and six days will be occupied in completing the journey, so that not only the speed but also the staying power of the competing boats will be taken into account. The total distance is 302 kilometres (188 miles), the longest lap being on the second day from Mantes to Saint-Aubin, 109 kilometres (68 miles). There were sixteen starters. The Mercedes boat, with a 35-h.p. motor, led the way the whole of the first day and did the best time by more than half-an-hour.

'Buses for Beverley.

FOLLOWING on the information already given with regard to the development of a motor-'bus service by the Great Western Railway comes the news that the three motor-omnibuses which the North-Eastern Railway Company have had constructed by Messrs. Stirlings (Limited), for the conveyance of passengers between Beverley and North Frodingham, have been severely tested during last week in Edinburgh. The vehicles, which will each carry sixteen passengers, with half a ton or more of luggage on the roof, are driven by petrol motors of 24-h.p. They have been run on the steep and rough streets of Edinburgh for a week by the officials of the North-Eastern Railway, besides which several long non-stop runs were made into hilly parts of the country. The streets on the north side of the city, where grades of 1 in 10, 1 in 12, 1 in 14, and the like, can be found for long distances, afforded interesting experiments, including the feat of running up Pitt Street and Hanover Street on the top speed all the way; and brake and "stop and start" trials gave good results on the 1 in 6 grade at Trinity. To finish the tests on the last day a rapid run was made to Linlithgow in a gale of wind and on muddy roads. The trials were so satisfactory that the railway company decided to put the cars into service at once.

A Successful Trip.

ON Monday the 'buses arrived at Beverley. Two were taken direct by rail, and the third travelled by road from York, conveying Mr. Gibb, the general manager of the North-Eastern Railway Company; Mr. Raven, the locomotive engineer; Mr. Burt, traffic superintendent, and other officials, who, after inspecting the cars and the stable in which they are to be kept, returned to York by train. During the process of detraining, the cars were backed up a steep incline, the power of the motor being well tested. They were then run to the shed in which they are to be housed, and which has been specially

fitted up for their accommodation. During the afternoon the three cars were taken on a trial journey to Beeford and back. Hull Bridge was the first stopping-place, and calls were made, with a view to the preparation of a time table, at the post offices in the villages of Tickton, Routh, Leven, Brandesburton, North Frodingham, and Beeford. When it is mentioned that many of the inhabitants in these isolated villages, especially North Frodingham and Beeford, have never seen a railway engine, it can readily be imagined that they viewed with amazement these automobiles. An average speed of about twelve miles an hour was maintained throughout the journey. According to present arrangements four journeys will be made daily in each direction.

Filling Tanks.

ARRANGEMENTS for this year's Trials are progressing rapidly. Mr. S. F. Edge will again act as honorary marshal and Mr. J. D. Siddeley as hon. secretary for observers. The question of special tanks for replenishing cars has been reconsidered, and it has been decided that no mechanical means shall be used, but that all petrol cars shall be filled from recognised two-gallon tins, the petrol being poured out in the ordinary way; and that cars using petrol may use certified drums holding up to ten gallons. In this connection it has been also decided that no car may be replenished while in the Storage Tent, but that the cars must be taken to a special part of the grounds set apart for them and numbered, where all replenishments must be made.

A New Black List.

A MEMBER of the A.C.G.B.I. has reported a number of disgraceful acts on the part of his mechanic, whom he had obtained through the Club register. The register has only been in operation for some twelve months, and, of course, the record of the various men on it is not yet completely filled. A number of men have already been "blacklisted," and in course of time there is no doubt the bad ones will be weeded out. During the period of transition there are bound to be difficulties, and members are officially requested to notify Mr. Basil Joy in the event of their having any trouble with their mechanics, in order that others may be put on their guard. Such letters will be treated in absolute confidence as far as members' names are concerned. Members are strongly recommended to apply to the Technical Secretary for information as to any motor servant whom they may propose to engage, as it is quite possible that there may be some record in the books against the man, and this, of course, would be placed at the disposal of the member.

LIEUT.-COL. SIR AUDLEY NEELD, of Chippenham, Wilts, has just acquired a 7½-h.p. Wolseley car.

THE Anglian Motor Company, Limited, has been registered with a capital of £10,000 and headquarters at Beccles.

THE Mid-European Motor-Car Union, of Berlin, is organising a competition of speed indicators for use on automobiles.

MOTORISTS going from Brighton to Worthing on Sunday will do well to look out for a police trap between the Half Brick Inn and Worthing.

THE 10-h.p. Panhard belonging to Professor Herkomer, illustrated in our last issue, was supplied by the British Automobile Commercial Syndicate.

THE Lancashire Steam Motor Company, Limited, has been registered with a capital of £50,000, the first directors being Messrs. H. Spurrier, sen., J.P., A. Spurrier and H. Spurrier, jun.

THE Great North of Scotland Railway is contemplating the inauguration of services of motor carriages to supplement the suburban train services, and also to connect outlying districts with the railway.

IN addition to the cases of alleged furious driving reported on another page, the Hon. R. Ward has been fined 40s. and costs for exceeding 12 miles an hour in Hyde Park, and Mr. Lionel de Rothschild has been fined £5 and costs at Barnet for driving a car at excessive speed on the Great North Road.

THE DENNIS 16-20-H.P. CAR.

—■—

COMMENCING with motor-cycles some years ago, Messrs. Dennis Bros., Limited, of Guildford, have steadily kept pace with the progress of the automobile movement. Year by year their works have been extended, and we now learn that as a result of the growing demand plans have been passed for a further extension, which, when completed, will enable the output to reach over twelve cars a week.

We are able this week to illustrate in plan the chassis of the 16-20-h.p. four-cylinder car, with which Messrs. Dennis are now meeting with considerable success. As will be seen, it is built on up-to-date lines in every respect. The false frame holding the engine, clutch, and gear box is built of channel section steel, with specially constructed fasteners at the ends, and strengthened with side supports from the main framework. The latter is constructed of steel,

universal joint attached to a tubular arbor shaft, which has at its rearmost end a cardan joint, transmitting the power to a spindle carrying the bevel pinion, which transmits the power to the rear live axle. The differential is of the spur type, but differing from the usual kind by having six small spur wheels which greatly add to the strength.

The bearings of the rear axle are also noteworthy, the axle being mounted on four rows of half-inch ball bearings, together with four plain ones of phosphor bronze. The latter, being an easy fit, take all the bearing in case a ball should break or the ball races wear. The rear brakes are cast iron discs expanding against drums on the wheels. They are double acting, and are applied by a lever at the side of the driver. The wheels are all of equal size, the standard being 32 in. dia., shod with $3\frac{1}{2}$ in. pneumatic tyres. The petrol tank, which is fitted with a sight indicator, is placed in the front of the dash board, and holds nine gallons of spirit. The dash board is curved inwards at the top, and has affixed to it an automatic lubricator, under

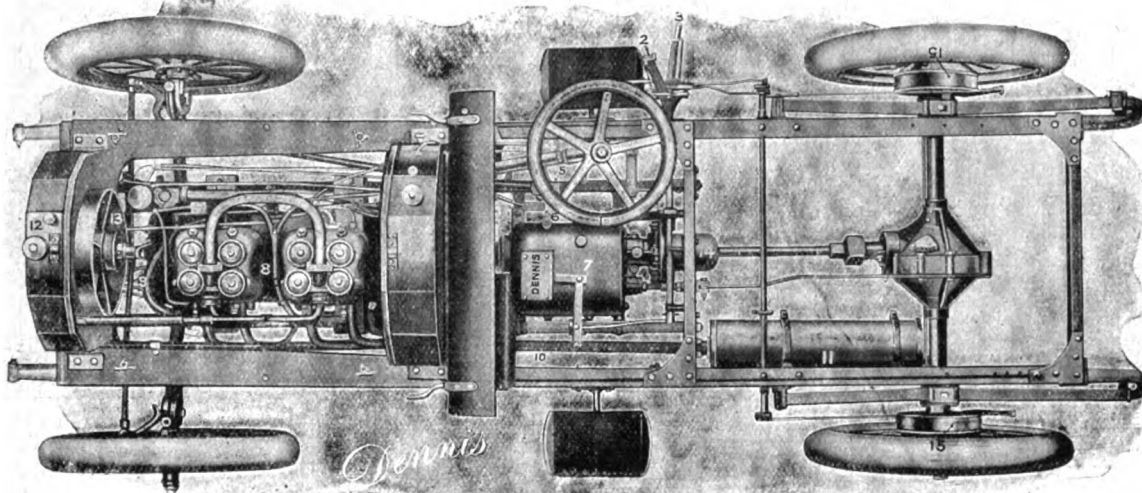


Fig 1.—Plan of Dennis 16-20-h.p. car.

- | | | | |
|------------------------------------|--------------------------|---------------------|----------------------|
| 1. Steering wheel. | 5. Pedal for clutch. | 9. Contact breaker. | 13. Fan for cooling. |
| 2. Speed change and reverse lever. | 6. Accelerator pedal. | 10. Exhaust pipe. | 14. Spring drive. |
| 3. Hand brake. | 7. Gear box. | 11. Exhaust box. | 15. Rear brakes. |
| 4. Pedal for foot brake. | 8. Four-cylinder engine. | 12. Radiator. | |

supported with ash and cross-stayed with channel steel, while the rear and front hangers extend well beyond, allowing the use of long and easy riding springs. The engine is of the four-cylinder vertical type, developing 16-h.p. at the normal speed of 950 revolutions per min. or 20-h.p. if accelerated. The engine is cooled by means of a honeycomb radiator aided by a suction fan worked by a gut band off the main engine shaft. In construction the radiator is similar to a tubular boiler, the copper tubes being rivetted at each end, so that it can be easily repaired in case of a leak.

The conical-shape clutch is bolted to the flywheel of the engine, and released by two hardened steel rollers, brought into action by the depression of the pedal. The gear box, which gives three forward speeds and a reverse with a direct drive on the top speed, is an ingenious piece of mechanism, inasmuch as it carries two extended disengaging dogs on the sliding gear which releases the secondary shaft, when running on the top speed. The main and second shaft are placed side by side and hardened steel bearings are used throughout instead of phosphor bronze. At the rear of the gear box is attached a large drum of large diameter, which is encircled by a phosphor bronze casting clipped against the drum on the depression of the brake pedal, the brake acting equally well whether the car is running in a forward or backward direction. The phosphor bronze ring is made from one casting, and the spring of the metal ensures its clearing the drum at an equal distance when released. In conjunction with the brake drum is a covered-in

pressure, which lubricates every bearing in the car, volt-meter, water pressure gauge, 2-way switch, and induction coil.

A NEW work on Motor-Car Management is shortly to be published by Messrs. Constable and Co.

BOTH in America and this country several old churches and fire stations have been converted into motor-car garages. Now comes the news that a theatre at Salem, Mass., U.S.A., is in future to be used as an automobile depot and repair shop.

ALTHOUGH the Bristol Motor Co., of Victoria Street, Bristol, has been established five years, their first annual outing did not take place until Saturday last, the destination being Bournemouth. A steamer trip round the Isle of Wight was also enjoyed.

MR. T. H. PRESTON sends us the following from Brantford, Ont., which he suggests may be of service to automobilists who contemplate a Canadian tour:—"The license fee for automobiles charged by the Ontario Government will be 2 dols. per machine for registration, and 1 dol. per annum afterward. Besides this, 1 dol. will be charged for the tag, which must be conspicuously displayed on the vehicle. The tag decided on is a dark leather shield six or seven inches long, with raised aluminium figures, and bearing the coat of arms, and words, 'Licensed by the Province of Ontario.' Tourists must procure one of these tags, and on leaving the 1 dol. charged for it will be returned."

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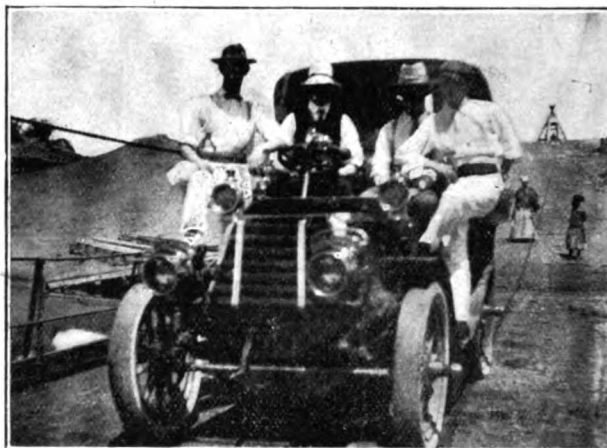
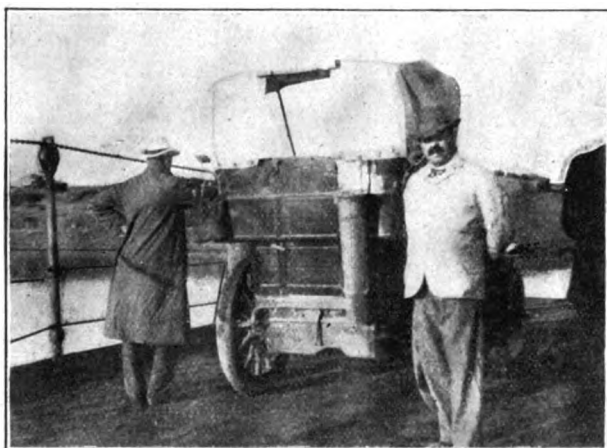
SOUTH AFRICAN NEWS.

[FROM OUR OWN CORRESPONDENT.]

CAPE TOWN, August 12th.

I HAVE pleasure in sending this week a batch of interesting photos, taken during an electioneering campaign trip of 900 miles through Griqualand, when Mr. Abe Bailey, M.L.A., was canvassing for his seat. No. 1 shows the car on the way to Griquatown, waiting for the ferry across the Vaal River at Smith's Drift. Leaning on the car is Major C. E. Owen-Lewis, Secretary of the Progressive Association, who accompanied Mr. Bailey on the trip, and in the foreground is Mr. J. Solomon, a prominent merchant of Kimberley. No. 2 depicts the car crossing the same ferry on the return journey, with Mr. O. E. Bush at the helm, and three Dutch sons of the veldt on a motor-car for

E. Edwards ...	7-h.p. Panhard
J. Rose ...	7-h.p. Panhard
S. Benjamin ...	6½-h.p. Gladiator
S. Jones ...	6½-h.p. Gladiator
A. C. Fuller ...	6-h.p. De Dion
H. Fallon ...	6-h.p. De Dion
H. Loton ...	6-h.p. Victrix
— ...	6-h.p. Victrix
J. W. Courtis ...	5-h.p. Baby Peugeot
S. H. Adams (driven by Hamilton) ...	5-h.p. Baby Peugeot
E. G. White ...	5-h.p. Oldsmobile
H. Ashby ...	5-h.p. Oldsmobile
Major Officer ...	5-h.p. Oldsmobile
W. T. Wilson ...	5-h.p. Clyde
W. Hoeschen ...	4½-h.p. Benz
T. Bocking ...	4½-h.p. Benz
J. Lyon ...	4½-h.p. De Dion
A. C. Partridge ...	4½-h.p. De Dion
Dr. R. Arderne Wilson ...	4½-h.p. Cudell
J. Delpont ...	3½-h.p. Renault



Snapshots taken during a South African Election Campaign.

the first time in their lives. No. 3 shows the same car at a Kaffir Kraal near Campbell, Griqualand. A Dutch farmer and his family are seated in the car, and in the rear can be seen a number of Kaffirs. In No. 4 the car is seen coming up Du Toit's Pan road, Kimberley, on the return journey, after the 900 mile trip.

On Saturday, the 8th August, the Automobile Club of South Africa, having awakened from its winter sleep, took advantage of Dr. Jameson's hospitality and ran through mud and slush to "Groot Schuur." Over twenty cars left Greenmarket Square at 2.30 p.m., while others joined the meet at the rendezvous. The following is a fairly complete list of the cars present:—

Dr. L. S. Jameson ...	22-h.p. Daimler
D. P. de v. Graaff ...	22-h.p. Daimler
A. T. Hennessy ...	14-h.p. New Orleans
Donald Menzies ...	12-h.p. Gladiator
A. C. Partridge ...	10-h.p. Lancheester

S. H. Adams ...	10-h.p. Lancheester
S. H. Adams (driven by Pippard) ...	10-h.p. Wolseley
H. Breusing ...	10-h.p. Wolseley
J. Klerck ...	8-h.p. Belgian Car
W. M. Jenkins ...	Toledo Steam Car
A. S. Wessels ...	Toledo Steam Car
W. E. Toll ...	Conrad Steam Car

His Excellency, Sir Walter Hely-Hutchinson, G.C.M.G., the Honorary President of the Club, was to have arrived at "Groot Schuur" at 3 p.m. on Mr. Graaff's Daimler, but while taking one of the up-grades on the Estate road the machinery went on strike, and the Chairman, Mr. A. T. Hennessy, had to bring up his New Orleans to the rescue and convey His Excellency to the assembly. The last half mile of the run (from the Main Estate road to "Groot Schuur" itself) imposed a very good test of brake-power—the grade being in places about 1 in 6—but all the cars successfully negotiated the same with the exception of Mr. Edwards' Pan-

hard. Finding that there was some defect in the brake, Mr. Edwards called in the assistance of the wire fencing at the side of the road—sacrificing his glass front in the manoeuvre, but otherwise doing no damage. A very enjoyable half-hour was then spent refreshing on the historic stoep, among familiar faces being Dr. L. S. Jameson, M.L.A., His Worship the Mayor (and of course the Town Clerk), Sir David Gill, the Attorney-General, Colonel Robinson and Mr. H. M. Arderne, with a large number of club members and friends.

Refreshments over, the cars were then taken to the Main Estate road, where a mile had been measured off for speed trials, and one by one the competing cars were despatched by Mr. J. Rose, who, with the honorary secretary, Mr. Fuller, was responsible for the timing. His Excellency, who was driven over the course in the Chairman's car, watched the proceedings from the finishing point, and evinced much interest in the times made by the various cars. A telephone had been specially installed for checking the time—the starting signal being clearly heard at the finishing point and stop watches at each end verified all times taken. The best run was made by Dr. Jameson's 22-h.p. Daimler, the time being 1 min. 47 1-5 sec. (35.7 miles per hour).

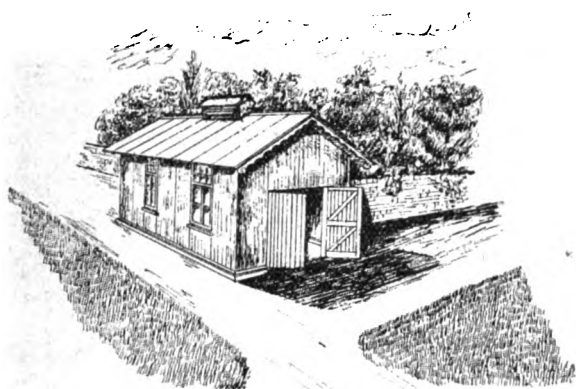


Fig. 1.—General View.

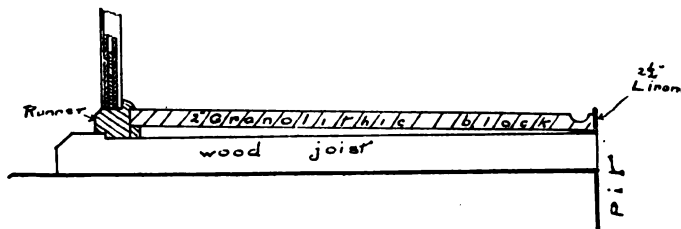


Fig. 2.—Details of Floor.

Mr. Graaff's 22-h.p. Daimler having recovered from its temporary indisposition, secured next place with 1 min. 43 1-5 sec. (34.8 miles per hour). Mr. Menzies' 12-h.p. Gladiator followed with 1 min. 47 1-5 sec. (33.7 miles per hour). Mr. Partridge's Lanchester showed up well with 1 min. 55 2-5 sec. (31.2 miles per hour.) The remainder of the competitors averaged about 2 min. 25 sec., or 25 miles per hour.

The only mishap during the trials occurred to Mr. White's Oldsmobile, which shed one of its front wheels after running down a steep incline about half a mile from the start. The car turned turtle and dislocated the driver's ankle, but the engine continued running until the current was switched off, the only damage being a bent axle and twisted springs. Some time was occupied in ascertaining the details of the accident at the telephone stations, and as dusk was approaching it was thought best to close the afternoon without allowing the flying start tests to be made. On the whole the Club is to be congratulated on the very satisfactory turn out. Events of this sort are of very great use to the public in enabling the uninitiated to judge of the merits of the various cars and in showing up the weak and strong points of all.

MOTOR-CAR HOUSES.

IN recent issues references have been made to the problem of motor-car houses. House agents are recognising that the addition of suitable buildings for the accommodation of automobiles is a valuable asset in the letting of premises in their hands, while the country gentleman recently converted to the new movement wants to have some idea as to the cost of housing his vehicle.

We recently went into the question with the proprietors of the London Steam Joinery Works, and with their assistance are able to give a plan of a shed which has the advantage of being easily transportable as well as eminently useful and practical when fixed in position. The house is in interchangeable sections, so that it can be taken down, packed in small compass and readily taken to any other location and re-erected. In the house shown in Fig. 1 the windows are at the sides, but they can be as easily placed as skylights, thus securing the maximum of light for the interior. Fig. 3 shows the elevation of the side of the house which does not appear in Fig. 1, while a plan view is given in Fig. 4. Arrangements have been made for adequate pit accommodation and for the provision of tool bench, wardrobe cupboard, tool sack, etc. A shed of this kind 21 ft. by 12 ft. by

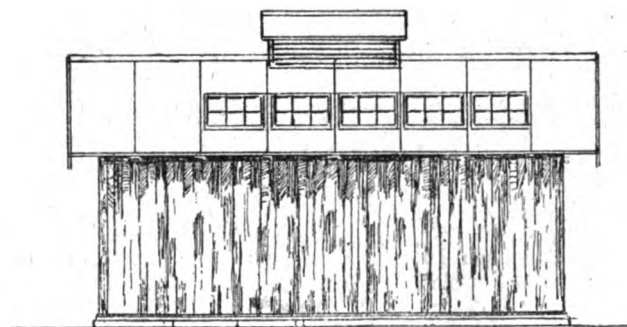


Fig. 3.—Side Elevation.

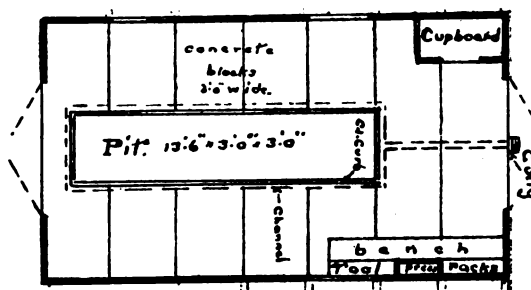


Fig. 4.—Plan.

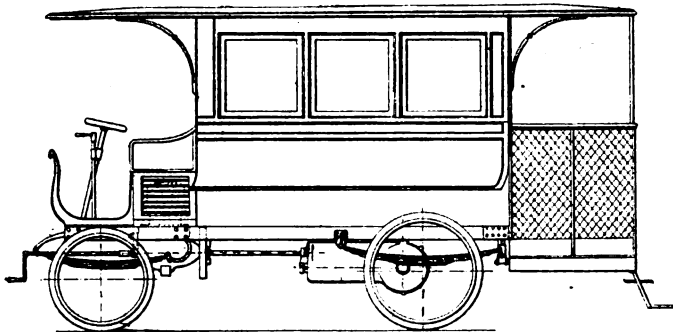
8 ft. high to eaves, with doors at each end and granolithic floor, would probably cost about £82. This would include channel and fall to carry off the water, and the pit being formed with granolithic slabs blocked together so that they could not move. A reduction of nine feet in the length of the shed would result in lowering the cost about £10, while the omission of the granolithic floor and pit would effect a saving of about £20.

Constructed on this system of interchangeable sections, the cost of motor-car sheds can be reckoned at about 7s. per foot super of floor space with the granolithic floor, or 5s. per foot super of floor space if such is omitted. The provision of motor-car sheds is one of the matters that motorists have to attend to, and it is becoming increasingly apparent that those who have their own houses can effect economy in the pursuit of their pastime.

To rent a shed is generally unsatisfactory; there is the heavy expense, and it cannot always be obtained near the house of the owner of the car. But the man in the suburbs who has a garden of good size with adequate side or back entrance can easily devise a house of effective appearance in which to accommodate his automobile. The foregoing estimates may afford some basis for useful comparisons.

THE DE DION PUBLIC SERVICE VEHICLE.

MESSRS. DE DION AND BOUTON have until recently built commercial vehicles driven by steam, comprising a multi-tubular boiler of special construction and a compound engine. For some time, however, they seem to have abandoned steam and taken up petrol instead. After having for years made vehicles of large capacity and great load, they have now turned their attention to delivery cars for moderate loads and capable of higher speed, which are demanded by merchants and manufacturers, and also to public-service vehicles. Our illustration shows one of the latter, having accommodation for twelve passengers, eight inside and four on the platform. It is fitted with a 15-h.p. two-cylinder motor, and a three-speed transmission gear. The slowest speed is $2\frac{1}{2}$ miles, the medium 5.6 miles, and the high 14 miles per hour. The weight of the



omnibus, empty, is about $26\frac{1}{2}$ cwt. The wheel base is 8 ft. 2 in., and the total length 15 ft. 10 in. The track is 4 ft. 10 in. and the width of the platform 4 ft. The front wheels are 32 in. in diameter and the rear wheels 36 inches, all being shod with solid rubber tyres.

A SCOTTISH Cyclists' Union warning board is to be erected near the new railway bridge, at a nasty turn which leads on to the new extension of Dundee's esplanade.

THE Wolseley Tool and Motor-Car Co., Limited, have appointed Messrs. Dangar, Gedge and Co., of Sydney, agents for Wolseley cars in New South Wales, and Messrs. Levin and Co., of Wellington, for New Zealand.

A SPEED indicator and recorder for motor vehicles has been introduced by a Dresden firm. Besides indicating the speed, the instrument shows how long the vehicle has been stationary, and rings a bell when the speed limit has been reached.

UP to the end of July the total number of automobile licences issued in Cleveland, U.S.A., was 919. This is an increase of 550 for the past twelve months—a good indication of the rapidity with which motor-vehicles are growing in public favour.

A MOTOR-DRIVEN hack saw has just been put on the market by Messrs. Edward G. Herbert, Limited, of Cornbrook Park Works, Manchester. Owing to the eccentric motion these machines are claimed to cut much quicker than an ordinary hack saw.

ACCORDING to a Consular report, motor-cars, though not used to such an extent as in other European capitals, are increasing in demand at St. Petersburg. German, French and Belgian makers supply nearly all the local requirements, and there seems to be no reason why British manufacturers should not join in the competition for supplying them.

MR. E. H. LANCASTER, who for nearly two years has been the expert to the Automobile Club, has resigned his position with that organisation. His knowledge of automobilism is probably unique, and his varied experience should serve him in good stead in the new work he proposes to undertake, of which we shall give further details in an early issue. His successor at the Club is Mr. F. W. Hudlass, late of Messrs. Weller Brothers.

CONTINENTAL NOTES.

By "AUTOMAN."

IT is said on good authority that the course for the Gordon Bennett Cup race for 1904 has been definitely fixed, and that it is situated near Homburg. The Emperor of Germany, it is rumoured, has been interesting himself personally in the question, and has had much to do with the decision which has been taken. It is also said that he will be present on the occasion of the race, which will be held in the month of July—that is to say, in the height of the Homburg season.

THE burgomaster of Brussels, M. De Mot, has been making Dogberry bye-laws directed against automobilists circulating in the capital city of Belgium. The decree has gone forth that in certain streets motor-cars shall only circulate at the pace at which a man walks. He is, however, getting himself into trouble with the working man, and this is a thing he entirely overlooked in his anxiety to worry and persecute the users of mechanically-propelled vehicles. The Federation of Metallurgists called together the delegates of the different works around Brussels where automobiles are manufactured, or where parts of motor-cars are made, and two hundred working men turned out to denounce the mayor. Already there is a tendency for manufacturers to remove their works to the country, where rent and wages are cheaper, and efforts are being made by artisans' societies to encourage as much as possible the automobile industry which has taken root in Brussels. M. de Mot has therefore fallen foul of a very powerful body, and when he comes back from his summer holidays he will very probably find it wiser to withdraw his obnoxious bye-laws and cease a campaign of motorphobia which only tends to injure the trade of the city over whose destinies he presides.

SPEAKING of Brussels reminds me that quite a novel use is being made there of the horseless carriage. One of the banks of that city has chartered a motor-car to accommodate the individual who collects its accounts. The car has a limousine body which is fitted up with cash drawers and files.

IN every country the replacement of the old *regime* by the new is a slow process; it is, however, a sure one, and little by little the automobile is gaining ground and making itself indispensable in the routine of daily life. Switzerland, surrounded by mountains, indeed made up of mountains inaccessible in the winter and inhabited principally by peasants, has been one of the slowest countries to recognise the new locomotion—even yet many cantons do not tolerate motor-cars on their roads. The useful side of the question, which touches directly the pocket, is, however, prevailing, and so successful have the experiments with large passenger vehicles been, that they are gradually replacing the old diligence for the transport of passengers and their luggage to spots which the railway does not reach. In a few short years the diligence will be a thing of the past.

A PECULIAR accident happened to some friends of mine last Sunday as they were returning in a motor-car from an excursion to Fontainebleau. The day was hot and punctures abounded; indeed, the luck had been against them, and a "burst" followed close on the heels of a puncture. At Villeneuve-Saint-George they were fortunate enough to find a spare cover, and they were "romping" home joyful and hungry down the Avenue des Gobelins, when the clattering noise of the brake announced another puncture. The last spare tube had been used up, and there was nothing for it but to crawl for the last mile or two on the punctured tyre along the wood-paved Boulevard du Port Royal and down the Boulevard Saint Michel. All went apparently smoothly until the "setts" were reached, when a peculiar noise at once attracted attention, and the car was brought to a standstill. To the amazement of the five occupants, the complete tyre, outer cover, inner tube and all, had disappeared and left the bare rim, and was nowhere to be found.

TALKING about Fointainebleau, there have been some interesting trials of dust prevention along the road from Paris. Tar is the substance used for this purpose, and the experiments have had a great measure of success. At one spot a distance of 300 metres has stood three months and is in just as good a state now as when first laid down, although it was laid on an old road surface, and the season has been prolific in rain.

A HILL-CLIMBING trial will be held at Chateau-Thierry on October 4th next, under the auspices of the "Auto," who are making the most stringent regulations in order to preclude any possibility of accident. The necessary authorization has been granted by the municipal and prefectural authorities. The trial will be held on the same hill as last year, but only on the straight part of the road. It will be made with a standing start, and five seconds will be allowed after the word "go" until the competing car breaks the wire which starts the chronometer. Should the car not break it within these five seconds the timekeeper will break it himself and will begin to count the time. There will be the usual four classes for racing cars and motor-cycles and eight classes for the tourist section, namely:—(1) Motor-cycles which have taken part in the "Criterium of $\frac{1}{4}$ litre." (2) Cars whose chassis costs less than £160. (3) Cars whose chassis costs more than £160 and less than £320. (4) Cars whose chassis costs more than £320 and less than £480. (5) Cars whose chassis



A Benz Parsifal Car, at Seefeld, in the Tyrol.

costs more than £480 and less than £720. (6) Cars whose chassis costs more than £720 and less than £1,000. (7) Cars whose chassis costs more than £1,000. (8) Omnibuses carrying at least twelve passengers.

THE Chateau de Compiègne contains at the present time one of the most complete collections of tapestry and furniture extant, and is most interesting in souvenirs of the Empire. It is situated on the north-west corner of the forest of the same name, and is 95 kilometres (59 miles) from Paris. In order to reach it by automobile the tourist can take the route I indicated last week as far as Gouvieux, that is to say nearly at Chantilly. At Gouvieux, instead of leaving the town and going eastward, take the winding streets leading towards the north and make for Chaumont and La Chaussée, and thence by St. Maximin and Les Haies to Creil, which is an important commercial centre on the river Oise, which you keep on your left. When you arrive at the church in Creil, which is an easy landmark, ask the road to Beaurepaire, which skirts the river. After passing Beaurepaire you reach Pont St. Maxence, and when you arrive at the principal street turn sharp to the left along the *parée* and cross the river and the railway line, then straight on till you cross a quaint village with a wide street and grass side walks, about a mile or so from the bridges. Just after the end of this village, which is called Longeau, turn sharp to the right and pass through Houdancourt, Chevières and Rivecourt,

where you strike the road to Compiègne and turn to your left, skirting the river which you see from time to time on the right. Armancourt and Jaux are then passed through and you quickly find yourself in Compiègne, where you again cross the river Oise and climb up the hilly main street to the Hotel de la Cloche, next the town hall. The Chateau is a little further along and down to the left.

THE race meeting organised by the Frankfort Automobile Club took place on the trotting track at Frankfort-am-Main, on Sunday last. The three-mile motor-cycle race was won by Philtiens on a 3-h.p. Antoine, in 4 min. 44 sec., F. Opel on a Darracq won the race for cars up to 10-h.p. driven by professionals, covering the distance of five miles in 8 min., an amateur event in the same category being won by A. Ricordi on a Benz in 7 min. 42 3-5 sec. F. Opel on his Darracq won the five-mile handicap race reserved for members of the F.A.C. (3,585 metres start, time 4 min. 50 1-5 sec. An Adler car secured the first place in the amateurs' race for vehicles up to 16-h.p., distance eight miles, time 12 min. 5 3-5 sec., the professional event in the same category falling to the lot of F. Opel, time 11 min. 9 1-5 sec. There were seven entries for the amateur ten-mile race for cars up to 60-h.p., W. Poëge on his Mercedes winning in 12 min. 55 1-5 sec., Beconnais on a 35-h.p. Darracq carrying off the honours in the professional event over the same distance in 13 min. 32 1-5 sec. In connection with the last two



A Stop for Petrol at Partenkirchen.

Automobil Welt.

CONTINENTAL TOURING SNAPSHOTS.

events Herr Louis Peter, director of the tyre company which bears his name, presented a beautiful trophy, consisting of a handsome cup, to become the property of whoever holds it for two years in succession. The cup is an international one, and will be governed by conditions somewhat similar to those existing in the case of the Gordon Bennett Cup. Entries will be accepted only for large racing cars up to sixty horse power, and over a distance of ten miles. The first three in the last two races competed for the trophy, but the event proved an easy victory for Poëge, who won in 12 min. 51 sec., beating the second man by a lap and a half. The races were run off in the presence of fully 30,000 spectators, and in the evening a banquet was held.

MR. A. G. BERGMANN, who some time ago made an automobile trip from Paris across the whole of Europe and part of Russia, combining the same with shooting and fishing, is about to make a similar excursion from Paris, via Switzerland, Austria, South Russia, Caucasus, and on to Teheran, in Persia. This time, however, he would like to have a companion, who would share the expenses as well as the pleasures of the journey. Should any reader of the *Journal* think well of the project, I can put him in communication with Mr. Bergmann.

THE entries for the Deauville race meeting on the 10th inst. already include about thirty cars. Those in the racing section comprise two 70-h.p. Mors, a 60-h.p. Mercedes, a 60-h.p. Panhard and a Napier.

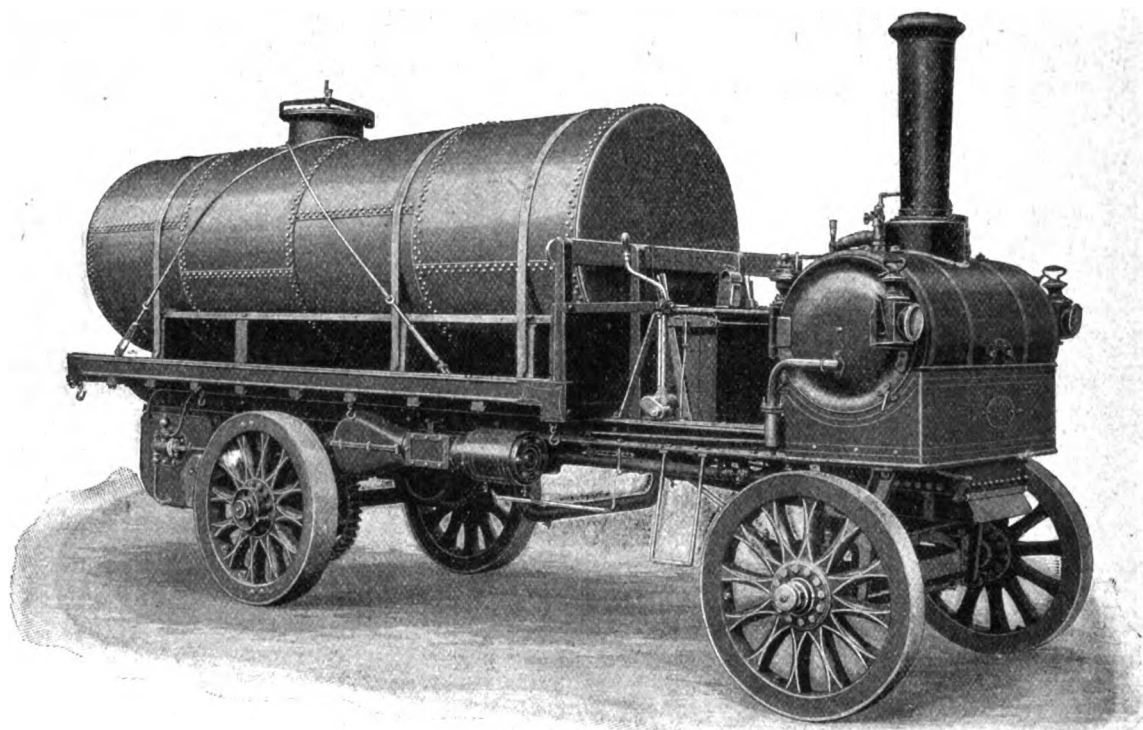
THE INSPECTION OF PETROL CARS.

NOWHERE is it more emphatically true that "an ounce of prevention is worth a pound of cure" than in the care of motor-cars. Frequent and conscientious inspection supplies the necessary "ounce of prevention," and is capable of minimizing, if not entirely precluding, the necessity of repairs upon the road. Repairs made in the stable are conducted under favourable conditions, with all the necessary tools at hand and free from the officious advice of the ever curious and embarrassing roadside committee. Repairs upon the road must be made under the most disadvantageous conditions, and the likelihood of their being required should be, as far as possible, forestalled.

If a motor-car be thoroughly and intelligently inspected before starting upon a run, its owner may go forth with the reasonable assurance that nothing untoward will take place, and may certainly have the satisfaction of knowing that whatever may happen upon the trip is not his fault, but due to some hidden weakness or defect in design for which he is not to

violent stresses caused by the surging of the liquid while traversing rough roads.

There are two portions of every automobile which deserve special care: the steering gear and the brakes. Upon them, more than on any other portions of the mechanism, depends the safety of the owner. All nuts upon any part of the steering gear should receive the most earnest scrutiny, to see that they are tight and that cotter pins or lock nuts are properly in place. When the steering wheel is in the straight ahead position the wheels should likewise be found to point directly forward—perfectly parallel one with the other. If any part of the gear be found bent, a close examination should be made. There should not be much lost motion between the movement of the steering handle and the wheels, as that shows that something is worn or loose, which will render the steering less positive than it should be. The steering gear throughout should be nearly free from spring or give when the handle is operated with the wheels at rest; on the other hand, it should work freely when the wheels are off the ground or the carriage is in motion, and this demands that all the joints be kept well lubricated.



A Steam Wagon built by the Yorkshire Patent Steam Wagon Co. for the Shell Transport and Trading Co., Ltd., London, to carry Petroleum. A description of the Yorkshire Co.'s vehicles was given in our issue of March 28th last.

blame. It may almost be said with truth that a well-designed motor-vehicle, of good workmanship and of the best material, will not give out on the road if it is given the benefit of a precautionary examination.

In the inspection of a motor-car the first consideration is to assure one's self that all working parts are free from dirt and dust from the road. A machine will not work well if it is dirty. Not only will it wear excessively in every moving part, but an accumulation of dirt from the road will sometimes destroy the free action of valve stems, throttle levers, and other parts of the vehicle which are returned to position by springs. All the working parts should be gone over with waste moistened with petrol, not only to remove the dirt, but to absorb the excess of oil upon exposed surfaces, the presence of which favours the collection of dirt from the dusty air. A glance should be given the petrol tank to see that it is well filled. The piping should be examined for leaks, and all unions, elbows and other connections tested to see that they are tight mechanically. A moment's attention is sufficient to assure one that the water tank is full and that it has developed no leaks in the soldering, due to the

The nuts which hold in place the various parts of the emergency brake and its operating mechanism should receive no less stringent examination. Oil should be carefully avoided upon leather band brakes, and an occasional application of "belt compound" to the band will keep it flexible and give it a grip, if it is well designed. One should see that the adjustments are such that the brake band comes fully into operation upon its drum before the operating mechanism—pedal or lever—reaches the limit of its motion, but the band should not drag unduly upon the drum when the brake is supposed to be off.

Chains should be carefully examined to see that they are not loose enough to make possible their breakage through climbing the teeth of the sprockets, and not tight enough to cause them to run stiffly. Chains should frequently share in the general cleaning operation, and it is well to see that the detachable link which fastens together the two ends of the chain is secure.

The adjustment of clutches requires to be looked after. One should not neglect to try the wrench upon all the nuts of the frame, and to see that cotter pins and lock nuts are doing their duty; or fail to see that all four wheels run freely when jacked

up off the floor, and have their bearings well lubricated. It is hardly necessary to remind one to inspect the tires, to make sure that they flatten but little under the weight of the car.

When the motor is reached in the process of inspection, turn it over by means of the crank and determine whether or not the compression is as high as it ought to be. If it is found that the engine passes the compression point too easily and that the charge escapes, one should look for leaks. Before going to extremes in the direction of taking the engine apart, it is well to start it and watch each of the possible leaky points while the engine is in operation. The leak may then often be located by the visible escape of gas during explosion. If a leak is found to have developed about the cylinder head, the cooling water will have to be drawn off, the cylinder head removed and a new piece of asbestos packing cut to fit, saturated with water or oil and put in place. Should the leak appear to be in or about either the exhaust or inlet valves, try tightening the bolts which hold the valve seating in place, see that the valve stems have not become bent through accident, and make sure that the springs which should hold the valves closed are in good working order. Perhaps new washers under the valve flanges will solve the problem, but if not, it is probable that the valve will have to be re-ground into its seat. If no leak is found at any of the points mentioned, and the compression still remains weak, it must be that the piston is not tight—a serious matter, which means that the engine must go to the repairers. Fortunately this should happen only after long use of the motor.

If oil cups are provided upon the engine they should be opened to see that they drip regularly and with proper frequency. If splash lubrication is the method employed, a sufficient amount of fresh oil should be supplied to the crank case and the drawing off plug screwed in firmly. In case the engine, while running, is unduly noisy, the "pounding" may be due to wear in the crank-shaft bearings or in the bearings of the connecting rod in the piston or upon the crank. If means are provided for so doing, this lost motion should be taken up by tightening the bearings as much as possible without causing the engine to turn stiffly. All the nuts upon the bolts which hold the engine to the car frame should be tried with a wrench to make sure that they are secure.

The transmission gears should be seen to be well covered with heavy oil or gear grease and to be in correct mesh. The gear shafts ought to fit well in their bearings, as any play there will cause the gears to "chatter" badly. If there is any means of adjusting these bearings, the lost motion may readily be taken up and the gears made to engage perfectly. There is a great deal of pressure on these gear shaft bearings, and they must be kept well lubricated. An automobile frequently inspected along the lines indicated may, remarks Mr. A. L. Clough in the "Horseless Age," be expected to give very little trouble while in use. "Everything tight and in correct adjustment" is the gist of motor-car inspection, and by following out this maxim one will be subscribing to the truth of the aphorism which someone has propounded, "The best way to deal with accidents in machinery is not to let them happen."

MR. E. KALKER, of Coventry, is specialising in insulating wire for motor-cars and motor-cycles.

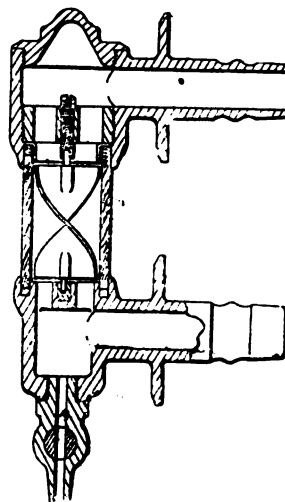
THE members of the Southern Motor Club are arranging a garden party at the Glyn Arms Hotel, Ewell, for Saturday next, the 12th inst.

A LIST of the registered automobile owners in the State of Connecticut which has just been issued discloses the interesting fact that up to August 8th last 1,050 automobile licences had been granted.

THE Library of Congress at Washington, U.S.A., is provided with large electric motor delivery wagons, the property of the U.S. Government. Notwithstanding this fact, it has been decided that the vehicles must be registered and numbered, and their drivers provided with licences, as would be required if the vehicles were owned privately.

THE KING WATER-CIRCULATION INDICATOR.

A NEW device for indicating the circulation of cooling water on petrol motor-cars has been put on the market by Mr. A. W. King, of Maywood, Hackensack, New York, U.S.A. The apparatus, which is illustrated in section herewith, is intended to provide means to show whether the mechanism employed for causing the water to circulate is in perfect working order. The indicator also enables the driver to ascertain the relative state of purity of the water moving through it, a transparent tube being provided for this purpose. The device further serves to remove some of the impurities that may get into the water-circulating system. To this end the lower part of the indicator is provided with a pocket into which any impurities finding their way into the device will settle, and from which they can be drawn by means of a drain cock. The water moving through the indicator impinges against a vane revolving upon



two spindles. The vane is always in plain view, and its motion is proportional to the rate of flow of the water. Should the circulation for any reason cease, the vane will come to a standstill, giving a visual indication of the fact. The indicator can be placed on the dashboard either in a horizontal or vertical position, without altering its effectiveness. The metallic parts of the indicator are of non-corrosive material, and the transparent member is an annealed glass tube of suitable thickness.

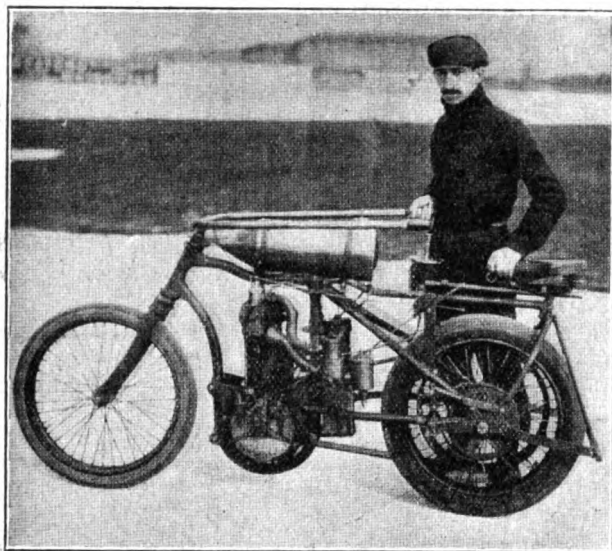
Should it become necessary to replace the glass tube, this can be readily accomplished by unscrewing the plug in the upper part of the device. The apparatus is inserted in the circulating system by means of rubber hose connections or metallic piping. It is claimed to be immaterial into which opening of the indicator the fluid enters and through which it leaves. To make the revolving motion of the vane more discernible portions of the latter are tinted in strongly contrasting colours.

At the Southport meeting of the British Association next week the Road Traction Committee will present a report, while among the papers to be read are one by Prof. Hele-Shaw on "Clutches," one on "The Problem of Modern Street Traffic," by Lieut.-Col. Crompton, and one by Mr. T. Clarkson on "Steam Traffic on Common Roads."

THE staff of the Wolseley Tool and Motor Car Company held their annual outing on Saturday, the 29th ult., the destination being Holt Fleet, on the Severn. About 600 of the staff and workmen availed themselves of the invitation of the firm, and travelled by the Midland Railway to Worcester, and thence to their destination by steamer. A most enjoyable day was spent, the sports which had been arranged among the men contributing largely to the success of the outing.

MOTOR-CYCLING NEWS.

THE Hon. Leopold Canning, D.L., recently invited the Motor Cycle Union of Ireland to Garvagh, which was also made the terminating point of a reliability trial. For the first stage of the journey the contest was from Glengormley at 10 a.m., via Antrim,



M. Sigonnaud, who won the 5-mile Race at Canning Town on Saturday last. *(La Locomotion.)*

Randalstown, Toomebridge, Maghera, and Garvagh; and the return journey was via Kilrea, Portglenone, Randalstown, Antrim, to Glengormley—a course which embraces every variety of road, and is undoubtedly a most exhaustive test of the thorough reliability of the machines. The total distance is about 100 miles.

FULLY 5,000 persons attended at the Canning Town track on Saturday last to witness some interesting motor-cycle races. One of the events was a mile match between G. A. Barnes, M. Sigonnaud and Maurice Fournier. The latter won two of the three events—covering the mile in 1 min. 17 4-5 sec. Fournier repeated his victory over Barnes and Sigonnaud, who finished in the order named in a three miles "flying start" contest. In the third contest—a five miles race from a standing start—Fournier and Sigonnaud frequently changed positions, but in the end Sigonnaud beat Fournier for first place by twenty yards in 7 min. 10 1-5 sec. Barnes had tyre troubles, and eventually retired.

THE awards in connection with the reliability trials organised by the Auto-Cycle Club have now been made known. The trials, it will be remembered, consisted of a series of daily runs, starting from the Crystal Palace, to Canterbury, Worthing, Brighton, Eastbourne, Basingstoke, Folkestone, etc., for nine days, during which the competitors covered 1,036 miles. As the weather during the greater part of the time was of the worst possible description, it says much for the high point of efficiency to which motor-cycles have now attained that so many competitors were able to secure certificates, notwithstanding the severe tests to which the machines were subjected.

THE following are the awards:—

First Class Certificates.—2½-h.p. spring-frame Bat, 2-h.p. Bradbury, 3-h.p. Chase, 2½-h.p. Kerry, 2½-h.p. King, 2½-h.p. Ormonde, 2-h.p. Werner.
Second Class Certificates.—2½-h.p. Alldays and Onions, 3½-h.p. Booth, 2½-h.p. Bradbury, 2-h.p. F.N., 2½-h.p. Griffon, 2½-h.p. J.A.P., 2½-h.p. Lagonda, 2½-h.p. Matchless, 2-h.p. Peugeot, 3½-h.p. Phoenix tricycle, 2½-h.p. Robinson and Price, 2½-h.p. Werner.
Third Class Certificates.—2½-h.p. Ariel, 2½-h.p. Castell, 2½-h.p. Phoenix, 3-h.p. Rex.

Mr. A. van Hooydonk was awarded a silver medal for the best performance in the Private Owners' Class.

THE motor-cycle reliability trial of the Southampton Motor Club, originally fixed for the 24th ult., was, owing to the bad weather, postponed until the 27th ult. Out of thirteen entries eleven actually competed, and of these ten finished. M. H. J. Byrne, who rode a 2½-h.p. Excelsior, was declared the winner, thus carrying off the vase offered as a prize by Messrs. Humber, Ltd.

IN the evening the members and a few friends partook of supper together at Scullard's Hotel, Southampton. Captain T. H. Stringer presided. "Boiled lamp," and "carburettor sauce," "roast tank," and "stuffed sparking plugs" were amongst the delicacies provided. After the loyal toasts had been honoured, the chairman presented the silver vase to the winner, Mr. Byrne, on behalf of the Humber Company, and the health of "the winner" was afterwards enthusiastically drunk. Responding to the toast "Success to the Southampton Motor Club," Mr. F. B. Wride said the gathering that day should prove a considerable factor in increasing the popularity of the club. As far as they were concerned, he believed the members would do all they could to see that the regulations of the Motor-Car Bill were kept.

THE third of the series of 200 mile trials for the S. F. Edge trophy was held by the Motor Cycling Club on Saturday last. The route was the same as followed on the previous tests, viz.: 1st stage, Hatfield to Stony Stratford, back to Hitchin, and thence to Hatfield; 2nd stage, Hatfield to beyond Berkhamstead and back; and third stage, Hatfield to Hertford, Royston, Buntingford and back to Hatfield. There were thirteen starters, of whom Crundall on a 2½-h.p. Humber, and Milligan on a 2½-h.p. Bradbury made non-stop runs. Moore (2½-h.p. Booth), Cox (2½-h.p. Ormonde), and Brown (Minerva) also went the full course.



Mr. J. H. Leonard, the holder of the "Motor-Car Journal" Challenge Cup.

THE Motor Cycling Club is holding a one hundred miles non-stop "passenger contest," and a fifty miles non-stop single motor bicycle competition on Saturday, the 12th inst. Riders who intend competing in this event should communicate with the hon. sec., Mr. G. E. Roberts, 17, Fieldhouse Road, Hyde Farm, Balham, S.W. To-day (Saturday) there will be a run to Chertsey.

THE Austrian military authorities have made arrangements to give a special course of training to motor-cyclists. Several officers and non-com. officers have been sent to factories to acquire technical knowledge of the construction and repair of motor-cycles and a large number of soldiers will be trained by these in handling and repairing machines.

HERE AND THERE.

INCREASING attention is being devoted to the question of utilising motor tractors in connection with agricultural work. At home, we have the "Ivel" agricultural motor, while in

A SYNDICATE is being formed in Dublin to run a service of motor-vehicles.

At Hastings there will shortly be six routes worked by motor-omnibuses.

THE Prime Minister has given £100 to a fund now being raised to meet the expenses of a committee to be formed to investigate the dust nuisance.

To meet the convenience of the trade, the Sirdar Rubber Company, Limited, have arranged to supply rims, rolled to their special section, at a price which does not include the royalty for the use of the patent. The rims so supplied can only be used or re-rubbered with rubber tyres supplied by the Sirdar Company, the royalty charged for the use of the patent being included in the price of the rubber—an arrangement which enables motor-car makers to build their wheels and pay no royalty until the cars have to be delivered.

A NEW fuel for petrol cars is being introduced by the British Refined Motor Spirit Co., of Bristol, they having put down plant for the rectification of a compound spirit, for which they claim remarkable results in the way of mileage per gallon.

MR. W. KINGDON, of Bideford, suggests that the London and South-Western Railway Co. should connect their terminus at Torrington with Okehampton by means of a motor-car service, thus saving some 40 to 50 miles in distance between the two places named.

Germany one or two machines somewhat on the lines of the latter have recently made their appearance. This week we are able to reproduce two photos sent us by Messrs. Alf. Dougill and Company, Limited, of Leeds, showing how the Maurer friction-driven lorries can be utilised to drive agricultural machinery. The 9-h.p. lorry illustrated is adapted to carry a load of 30 cwt.; by fitting a wood pulley on the end of the countershaft it is converted into a portable engine, driving a chaff cutter and threshing machine.

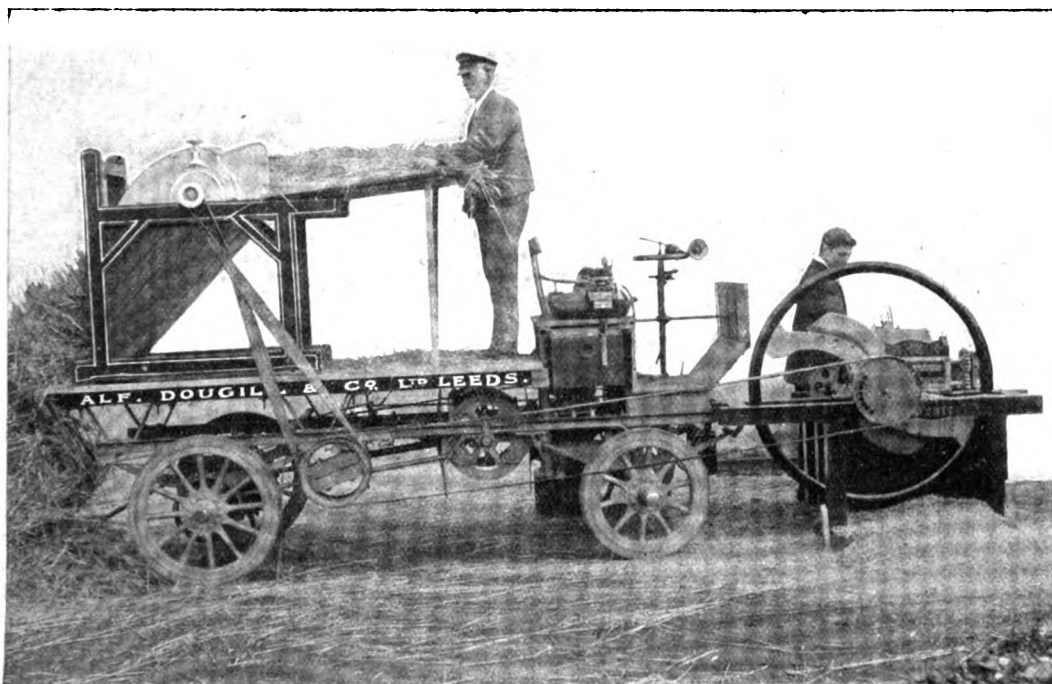
MESSRS. G. GREEN AND CO. have a well-equipped workshop at Reginald Road, Bexhill-on-Sea, where motor-car repairs of all kinds can be undertaken.

MESSRS. JOSEPH LUCAS, LIMITED, of Birmingham, are issuing a small pocket case of court plaster which they will send to any reader on receipt of a penny stamp.

MR. THEO. MASUI, the agent for Germain cars, has taken up the sole agency for a new leather tyre cover, with patent non-slipping tread attached, known as the Hutchinson-Samson.

THE Queen of Spain, who is at present in Paris, has been making a number of tours in the neighbourhood of the French capital in a Panhard landaulet.

M. A. S. Matier, of Lorne, Craigavad, Co. Down, who was motoring in England, has died suddenly at the Midland Hotel, Birmingham, from heart failure.



A Maurer Petrol Lorry Driving a Chaff-Cutter.



A Maurer Petrol Lorry Driving a Threshing Machine.

THE new Merryweather motor steam fire engine ordered by the borough of Brighton left London on Saturday last, and made a successful trip from Greenwich to the Brighton fire station. The new machine delivers 400 gallons per minute, and can travel, fully loaded, at any speed up to thirty miles an hour.

THE Toronto Automobile had a very successful run early last month.

MOTOR-CAR speed trials will be held at Southport on October 2nd.

THE Prince of Oldenburg has recently acquired a "Sage" 20-h.p. petrol car.

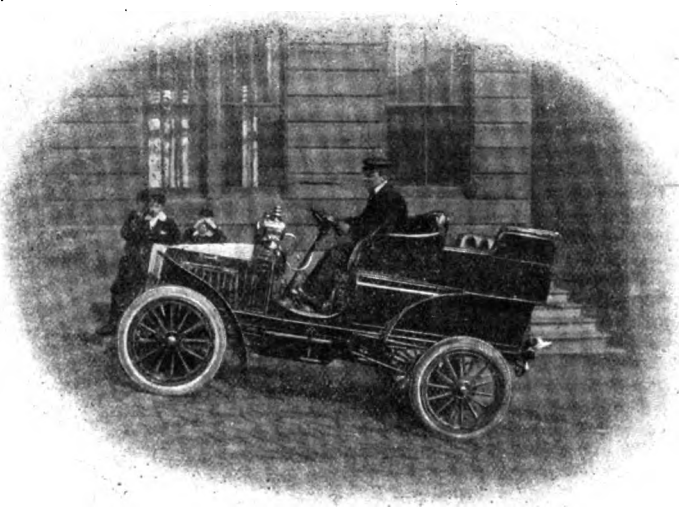
THE Sheffield Automobile Club will hold a run to-day (Saturday) to Buxton.

TO-DAY (Saturday) the Wolverhampton and District Automobile Club will hold a run to Shrewsbury.

THE business of Messrs. H. W. Van Raden and Company has been converted into a limited liability company with a capital of £10,000.

THE cabmen in Sydney are encountering opposition from motor-cars which are being used by the doctors of Sydney, who hire them, these motor-cars running in competition with ordinary licensed cabs.

A NEW model of the White steam car, specially designed for long distance touring, has recently been introduced. It is capable of running a distance of no less than about 250 miles on one filling of the tanks. This result has been secured, not



A White Steam Car ascending Scott Street, Glasgow—A Grade of One in Four.

only by the employment of larger fuel water tanks, but by increasing the efficiency throughout. One of these new cars is entered for the forthcoming reliability trials.

MR. J. W. SIMPSON has opened a garage in Broad Street, Margate, a fact of interest in view of the forthcoming reliability trials of the A.C.G.B.I.

THE R.L. Motor Engineering Company, Limited, has been registered with a capital of £1,000 to acquire the business of the Manor Park Engineering Company.

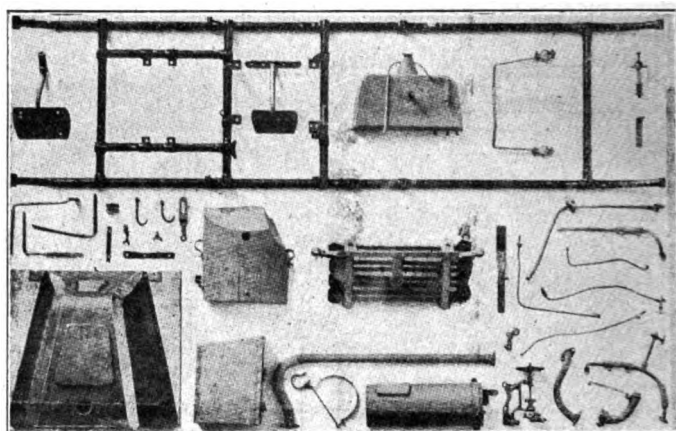
THE Forman Motor Co., Limited, Coventry, have just issued a new illustrated catalogue of their petrol motors, which are made in sizes ranging from 2½ h.p. up to 20-h.p.

MR. THOMAS BOOTH, whose depot at Frodsham is on the main road from Chester to Warrington, is now keeping a stock of petroleum spirit.

THE Motor Manufacturing Company, Limited, have issued a useful sheet of instructions for users of 10 and 20-h.p. M.M.C. cars with regard to the driving and lubrication of these vehicles.

AN autobiographical meeting is being arranged for by the Automobile Club of Toledo, U.S.A. Each member will be expected to submit a paper giving the name of his car, its cost, length of time in service, cost of running, cost of repairs, and any other information that might be of interest.

THOSE who are putting off the day of entering the ranks of motorists until the time motor-cars can be purchased at almost the price of a high-grade bicycle would do well to ponder over the two illustrations reproduced herewith from a French contemporary. They show the various parts, with the exception of the road wheels and tyres, which go to make up the chassis

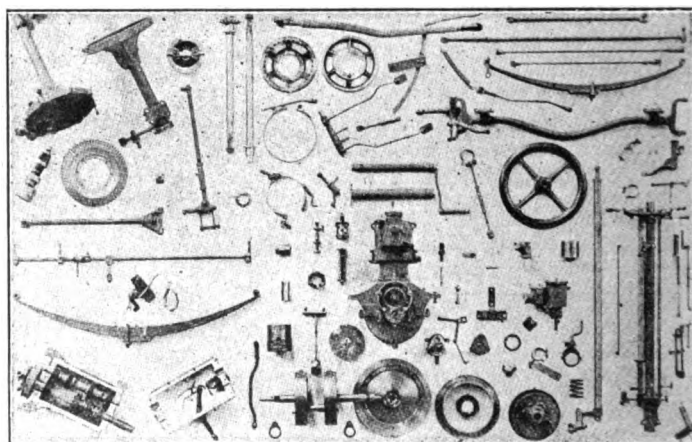


of a 6½-h.p. voiturette. When it is remembered that practically each and every part shown consists of several pieces, that have to go through many operations and many hands ere being ready for the assembler, the wonder is rather that cars should be available at such relatively low prices than that they are likely to undergo considerable reduction in the near future.

THE electrical charabancs illustrated in our last issue is built by the Vehicle Equipment Company, of Brooklyn, N.Y., for whom the Anglo-American Motor-Car Company, Limited, are agents in this country.

MESSRS. CARLESS, CAPEL, AND LEONARD have appointed Messrs. W. A. Mathew and Co., of High Street, Beckenham, their agents during the Reliability Trials. They have made arrangements with the Crystal Palace Company, enabling them to deliver petrol, at their garage, to cars running in the trials, between the hours of 6 and 10 a.m.

ON Friday last week Messrs. R. Reynold Jackson and Co. subjected one of their 8-h.p. "Jackson Tourists" to the ascent of Netherhall Gardens, N.W., one of the steepest hills in the London district. On the first attempt the climb was successfully



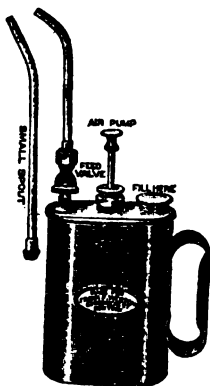
Some of the many parts of a Motor-Car (see above).

made with two persons; on the second attempt three passengers were taken; another with four; and finally the car mounted the hill with six persons up, the total weight being 56 stones. In view of the fact that no special preparation was made for the test, the performance of this little 8-h.p. car is undoubtedly a good one.

SOME USEFUL NOTES.

RUSTY and bent rims may be the cause of cut edges in pneumatic tyres. To prevent the rims from rusting, the tyres and especially the rims should be cleaned from sand and water after every run. Great care should be taken, in washing the wheels, to have the tyres fully inflated and the valve and thumb nuts properly tightened, so as to prevent water from getting into the edges, or through the stud-holes into the interior of the rim. If, nevertheless, water has found its way into the rim, detach the tyre at once, and carefully dry it. A good way is to paint the inside of the rim with some oil paint, so as to prevent it from rusting. A rusty rim is, states the Continental Tyre Company, greatly responsible for the rotting of the canvas, which is the cause of cutting the edges. The latter is also caused by dented rims. These dents are easily caused by violently knocking against the curb stone, driving with tyres deflated or down on the rims. For this reason alone it is advisable to detach the tyres now and then and to examine the rims, so as to remove by hammering any dents that may be there.

WHAT appears to be a useful form of oil can has lately been put on the market by Mr. Frank F. Weston, of 83, Chambers Street, New York. It consists of an oil reservoir, an oil pump, a spout and a tap. The capacity of the can is one quart; after filling it the cap is replaced and the pump worked a few strokes. To



lubricate any part of the motor or vehicle, the tap is opened, allowing the oil to escape, owing to the air pressure, in a continuous stream, the velocity of which can be regulated by the tap. The spout has a tube fitted to it which extends almost to the bottom of the reservoir, so that practically all the oil in the can may be forced therefrom.

BRAKES should not be applied suddenly, but gradually. By doing so, you not only save the tyres, but also avoid accidents, as the sudden application of the brake may cause the car to skid.

Go over the car carefully before your initial "spin." The manufacturer may have been most careful in every particular; nevertheless a lubricator may have been left unfilled; a nut perhaps was not tightened properly; the brakes may not have been set just right. Go over every nut and bolt and prove to your own satisfaction that everything is as it should be. Vibration will often loosen the tightest nut, so it is customary to hold them from falling off by means of cotter pins or otherwise. This is a wise precaution and should be insisted upon. The steering mechanism and brakes should receive very particular attention. Be sure that there is no lost motion or loose nuts in any part of the steering gear, and that the brakes may be easily and firmly applied on pressing down the foot lever. The means of adjusting the brake bands should be observed, as occasionally they will require adjusting. The hub caps should be removed to ascertain if the axle end nuts and lock nuts are properly tightened.

THE RELIABILITY TRIALS.

THE following is a complete list of entries for the Reliability Trials of the A.C.G.B.I., which commence on the 18th inst.

CLASS A1.

Tandems, Quadricycles, and similar two-seated vehicles, over 170 lb weight, and at a selling price of £160 or less.

Official No.	General description.	Diameter of cylinders.	Length of stroke.	Brake h.p.	Weight unladen. Cwt.
1	Century Tandem ..	88 mm.	110 mm.	6½	5
2	6-h.p. Eagle Tandem ..	90 mm.	110 mm.	6	6½
3	3½-h.p. Rex Tricar ..	3½ in.	3½ in.	3½	320 lb.

CLASS A.

Vehicles declared at a Selling Price of £200 or less.

4	Baby Peugeot ..	94 mm.	100 mm.	5	7
5	6-h.p. Regal ..	100 mm.	110 mm.	6	8
6	6-h.p. Siddeley ..	4½ in.	5 in.	6	8
7	6½-h.p. Century, two-seater ..	88 mm.	110 mm.	6½	9
8	7-h.p. Vesta ..	100 mm.	120 mm.	7	800 lb.
9	6½-h.p. Vulcan ..	4 in.	4 in.	6½	10
10	6-h.p. Wolseley light car ..	4½ in.	5 in.	6	9
11	Stanley Steam Car ..	2½ in.	3½ in.	5½	9
12	5-h.p. Coventry Humberette ..	3½ in.	3½ in.	5	5½
13	5-h.p. Beeston Humberette ..	3½ in.	3½ in.	5	5½
14	6½-h.p. Cadillac ..	5 in.	5 in.	6½	1,250 lb.
15	Pony Richard ..	90 mm.	100 mm.	5½	—
16	6-h.p. Relyante ..	90 mm.	110 mm.	6	8½
17	5-h.p. Oldsmobile ..	4½ in.	8 in.	5	7
18	6½-h.p. Clyde ..	90 mm.	110 mm.	6½	7½
19	6-h.p. Elswick ..	100 mm.	110 mm.	6	8
20	6-h.p. De Dion Bouton ..	90 mm.	110 mm.	6	8
21	5-h.p. Oldsmobile ..	4½ in.	6 in.	5	7
22	7-h.p. Cottareau ..	105 mm.	115 mm.	7	9
23	8-h.p. Achilles ..	100 mm.	110 mm.	8	11

CLASS B.

Cars declared at a Selling Price of more than £200, and not more than £300.

24	6-h.p. Swift ..	90 mm.	110 mm.	6	10
25	8 to 10-h.p. Regal ..	100 mm.	110 mm.	8 to 10	15
26	7-h.p. Coronet ..	95 mm.	110 mm.	7	9.5
27	10-h.p. Century ..	88 mm.	110 mm.	10	15
28	9-h.p. Beaufort Tonneau ..	110 mm.	120 mm.	9	13
29	9-h.p. Argyll ..	100 mm.	120 mm.	8	12
30	10-h.p. Pick Tonneau ..	4½ in.	4½ in.	10	19
31	10-h.p. Pick Voiturette, with dickey seat ..	4½ in.	4½ in.	10	17
32	9-h.p. Mathieu ..	110 mm.	130 mm.	9	13
33	9-h.p. Renault ..	100 mm.	120 mm.	9	13½
34	10-h.p. Georges Richard ..	100 mm.	100 mm.	10	11½
35	9-h.p. Eagle ..	85 mm.	110 mm.	9	19
36	10-h.p. Rex ..	4½ in.	4½ in.	10	15
37	4-h.p. two-seated Roots Car ..	4½ in.	5 in.	4	7
38	9-h.p. Mohawk Manon ..	100 mm.	120 mm.	9	12
39	8-h.p. M.M.C. ..	100 mm.	130 mm.	8	10
40	9-h.p. Darracq ..	..	..	..	..

CLASS C.

Cars declared at a Selling Price of more than £300, and not more than £400.

41	10-h.p. Gladiator ..	105 mm.	130 mm.	10	14½
42	12-h.p. Albion ..	4½ in.	5 in.	12	21
43	10-h.p. Hallamshire ..	105 mm.	120 mm.	10	15½
44	8-h.p. Standard ..	5 in.	3 in.	8	12
45	12-h.p. Arrol-Johnston Dogcart ..	4½ in.	6 in.	12	25
46	7-h.p. Star ..	4 in.	5 in.	7	14½
47	9-h.p. James and Browne ..	4 in.	6 in.	9	17
48	10-h.p. Argyll ..	88 mm.	120 mm.	10	13
49	14-h.p. Argyll ..	90 mm.	120 mm.	14	14½
50	10-h.p. Simms Welbeck ..	95 mm.	110 mm.	10	10
51	12-h.p. Wolseley ..	4½ in.	5 in.	12	19
52	10-h.p. Wolseley ..	4½ in.	5 in.	10	19
53	12-h.p. Century ..	105 mm.	130 mm.	12	17
54	12-h.p. Krupkar ..	115 mm.	120 mm.	12	15
55	9-h.p. Humber ..	3½ in.	4½ in.	9	14
56	10-h.p. Horbick ..	105 mm.	114 mm.	10	17½
57	12-h.p. Georges Richard ..	104 mm.	100 mm.	12	13½
58	12-14-h.p. Relyante ..	100 mm.	140 mm.	12 to 14	15½
59	13-h.p. Rex ..	4½ in.	4½ in.	13	16½
60	10-h.p. Dechamps ..	100 mm.	140 mm.	10	16½
61	10-h.p. Ryknield ..	3½ in.	4½ in.	9	14
62	7½-h.p. Wolseley ..	4 in.	4 in.	7½	15
63	10-h.p. Spyker ..	100 mm.	120 mm.	10	13
64	12-h.p. Darracq ..	..	..	..	..

CLASS D.

Cars declared at a Selling Price of more than £400, and not more than £550.

Official No.	General description.	Diameter of cylinders.	Length of stroke.	Brake h.p.	Weight unladen Cwt.
65	12-h.p. Sunbeam ..	80 mm.	120 mm.	12	15-16
66	12-h.p. Gladiator ..	88 mm.	110 mm.	12	15½
67	12-h.p. Ariel ..	3½ in.	3½ in.	16	17
68	14-h.p. Brooke ..	3½ in.	4½ in.	14½	18½
69	16-h.p. Okodyne* ..	3½ in.	4½ in.	9	21
70	10-h.p. Thornycroft ..	4 in.	4½ in.	10	15½
71	10-h.p. Peugeot ..	105 mm.	105 mm.	10	—
72	20-h.p. Hallamshire ..	105 mm.	120 mm.	20	19
73	Cremorne Car* ..	3½ in.	4 in.	12	25
74	12-h.p. Arrol-Johnston 6-seater ..	4½ in.	6 in.	12	27
75	8-10-h.p. Elswick ..	110 mm.	130 mm.	8 to 10	15
76	16-h.p. Century ..	88 mm.	110 mm.	16	19
77	10-h.p. Star ..	3½ in.	4½ in.	10	17
78	14-h.p. Beaufort Tonneau ..	115 mm.	130 mm.	14	16
79	16-h.p. Argyll ..	88 mm.	110 mm.	16	16
80	15-h.p. Belsize ..	4 in.	5 in.	15	17½
81	12-h.p. Belgica ..	120 mm.	140 mm.	15	17
82	14-h.p. Brooke ..	3½ in.	4½ in.	14	19
83	10-h.p. Relyante Steamer* ..	2½ in.	3 in.	10	18
84	10-h.p. White Car* ..	3 in. h.p.	3½ in.	10	16
85	12-14-h.p. Dennis ..	105 mm.	130 mm.	12 to 14	15
86	12-h.p. Clement ..	75 mm.	120 mm.	12	14½
87	10-h.p. Lanchester ..	5½ in.	5 11-16 in.	10	19½
88	12-h.p. Sunbeam ..	80 mm.	120 mm.	10 to 12	16
89	12-h.p. Brush ..	85 mm.	118 mm.	12	18
90	16-h.p. Maxim ..	110 mm.	120 mm.	16	—
91	12-h.p. De Dion Bouton ..	100 mm.	110 mm.	12	14
92	12-h.p. New Orleans ..	95 mm.	110 mm.	12	17
93	10-h.p. Renault ..	100 mm.	110 mm.	10	13

CLASS E.

Cars declared at a Selling Price of more than £550, and not more than £700.

94	20-h.p. Thornycroft ..	4 in.	4½ in.	20	17
95	12-h.p. Chelmsford* ..	4 in.	4 in.	12	28
96	15-h.p. Germain ..	95 mm.	130 mm.	15	18
97	15-h.p. New Orleans ..	100 mm.	110 mm.	15	19
98	16 to 20-h.p. Elswick ..	110 mm.	130 mm.	16 to 20	17
99	15-h.p. Star ..	4 in.	4½ in.	15	18
100	18-h.p. James & Browne ..	4 in.	6 in.	18	18½
101	20-h.p. Simms Welbeck ..	95 mm.	110 mm.	20	12½
102	24-h.p. Wolseley ..	4½ in.	5 in.	24	23
103	12-h.p. Gobron-Brillié ..	90 mm.	110 mm.	12	18
104	20-h.p. Winton ..	5½ in.	6 in.	20	23½
105	10-h.p. Gardner-Serpollet* ..	75 mm.	72 mm.	10	20
106	24-h.p. Georges-Richard ..	104 mm.	100 mm.	24	16½
107	20-h.p. Velox ..	105 mm.	110 mm.	20	19
108	16-20-h.p. Dennis ..	88 mm.	110 mm.	16 to 20	18
109	16-h.p. Lanchester "Single Tonneau" ..	5½ in.	5½ in.	16	20
110	12-h.p. Chelmsford* ..	4 in.	4 in.	12	28
111	20-h.p. Spyker ..	100 mm.	120 mm.	20	19½
112	15-h.p. Pipe ..	100 mm.	135 mm.	15	20
113	14-h.p. Renault ..	85 mm.	105 mm.	14	15
114	14-h.p. Martini ..	100 mm.	130 mm.	14	16½
115	25-h.p. Cassell ..	100 mm.	120 mm.	25	14
116	10-h.p. White* ..	3 in. & 5 in.	3½ in.	10	16
117	12-h.p. Humber ..	3½ in.	4½ in.	12	19
118	24-h.p. Darracq ..	—	—	—	—

CLASS F.

Cars declared at a Selling Price of more than £700, and not more than £900.

119	12-h.p. Peugeot ..	85 mm.	90 mm.	12	17
120	20-h.p. Germain ..	105 mm.	140 mm.	20	19
121	20-h.p. Beaufort Tonneau ..	95 mm.	110 mm.	20	21
122	20-h.p. Humber ..	4½ in.	5½ in.	20	21
123	12-h.p. Wilson and Pilcher ..	3½ in.	3½ in.	12	19½
124	15-h.p. Daimler ..	95 mm.	130 mm.	18	20
125	25-h.p. Maudslayi ..	5 in.	5 in.	25	23
126	16-h.p. De Dietrich ..	104 mm.	120 mm.	16	18½
127	15-h.p. C.G.V. ..	90 mm.	130 mm.	15	19
128	18-h.p. Chenard and Walcker ..	100 mm.	130 mm.	18	20
129	15-h.p. Pipe, with magneto clutch ..	100 mm.	135 mm.	15	20
130	16-h.p. Rochet-Schneider ..	100 mm.	150 mm.	16	20
131	18-h.p. Mors ..	106 mm.	125 mm.	18	22
132	20-h.p. Holcar ..	4½ in.	5 in.	28	21
133	20-h.p. M.M.C. ..	100 mm.	130 mm.	26	19½
134	16-h.p. Fiat ..	100 mm.	110 mm.	16	17½

* Steam cars.

CLASS G.

Cars declared at a Selling Price of more than £900.

Official No.	General description.	Diameter of cylinders.	Length of stroke.	Brake h.p.	Weight unladen Cwt.
135	22-b.h.p. Daimler ..	105 mm.	130 mm.	22	26
136	22-b.h.p. Daimler ..	105 mm.	130 mm.	22	29
137	22-b.h.p. Daimler ..	105 mm.	130 mm.	22	21
138	24-h.p. Har, Petrol-Electric ..	112mm.	135mm.	24	21
139	18-h.p. Wilson and Pilcher ..	3½ in.	3½ in.	18	20½
140	24-h.p. De D'trich ..	120mm.	120mm.	24	19½

Parts of Motor Vehicles Entered by their Manufacturers or by their Authorised Agents.

Official No.	Manufacturer or agent.	Part of Motor Vehicle not Entered in any previous Automobile Club Trial.	Price.
1	Clarkson, Limited ..	Chelmsford combined engine, differential gear, and pumps complete, in one three-point suspension case and frame, with automatic lubrication, Joy gear, circular slide valve, and bronze packing to rods for pistons and valves.	£225
2	Clarkson, Limited ..	Clarkson burner, with oil starter, and with a combination of automatic and hand control.	£35
3	Clarkson, Limited ..	Chelmsford boiler feed device, with a combination of automatic and hand control.	£15
4	Albion Motor-Car Co., Limited.	Electric ignition. Albion patent magneto and ignition gear.	£20
5	Albion Motor-Car Co., Limited.	Murray patent governor for internal combustion engine.	£22 10
6	Cremorne Motor Manufacturing Co.	Johnston patent liquid fuel burner	£10
7	New Orleans Motor Co., Limited	A live axle fitted on a 12-h.p. New Orleans Car.	£120*
8	New Orleans Motor Co., Limited	A gear box fitted on a 15-h.p. New Orleans Car.	£120*
9	New Orleans Motor Co., Limited	The clutch and combination of levers controlling same from foot pedal.	£25*
10	Langdon-Davies Motor Co., Ltd.	New control valve. A common suction valve to all cylinders. The tension of the spring can be varied to regulate gas supply. When valve is held closed altogether air only is let into the cylinders.	£5
11	Langdon-Davies Motor Co., Ltd.	New ring type clutch, running in oil bath, metal to metal without cone.	£20
12	Langdon-Davies Motor Co., Ltd.	New change speed gear, having four speeds and reverse; wheels, always in mesh and arranged so that changes can be made from any one to any other, including the reverse, without putting in any intermediate gear.	£30
13	Simms Manufacturing Co., Limited	Ignition device. Rotary Simms Bosch magneto machine, running at half the speed of engine.	£8
14	Hozier Engineering Co., Limited.	Govan patent gear box.	£30
15	Hozier Engineering Co., Limited	Hozier water-cooling bonnet, with out pump.	£20
16	Spyker Bros. ..	Gear box.	—
17	Spyker Bros. ..	Steering gear.	—
18	Spyker Bros. ..	Front axle.	—
19	Capt. H. H. P. Deasy	Radiator.	£18
20	Motor Manufacturing Co.	High-tension magneto ignition.	—

* Only supplied with car.

THE Mohawk Motor and Cycle Co., Ltd., of Chalk Farm Road, N.W., have turned their ground floor into a motor garage, with inspection pits and ample floor space for storing cars. A large stock of petrol and spare parts is kept, while facilities are at hand for recharging accumulators and the carrying out of repairs of every description.

MESSRS. DRAKE AND GORHAM, LIMITED, have sent us a pamphlet describing the Holden magnetic clutch. This is of very simple construction, consisting of a thick disc of wrought-iron keyed on the main shaft, and having a magnetising coil wound in a groove on its face; an iron plate is fixed to the pulley to be driven, and between the polar faces a thin steel disc is placed to prevent their adhesion due to residual magnetism.

CORRESPONDENCE.

THE MOTOR-CAR ACT.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having just returned from France after a fortnight's stay, visiting some of the finest motor-car works there, including those of Clement, Peugeot, Darracq, etc., and being particularly observant the whole of the time in the movements of automobiles, horses, and constables in connection with the former, I can quite bear out what Mr. Sturmev stated in his excellent letter to Mr. Long, that on the Continent, in the open country, notwithstanding the speed limit, nothing seems to be said, whatever the speed, unless, of course, the traffic is such as to be dangerous. In this country, on the other hand, we have been carefully watched on the most favourable and safest roads, where a speed of twenty-five miles an hour would inconvenience nobody. Still, if the unfortunate motorist is said to have exceeded his twelve miles an hour, he has been subjected to unreasonableness and gross injustice, which is monstrous, thus checking an industry in this country, the magnitude of whose possibilities no one can calculate.

Fully nine-tenths of the danger of fast motoring is done away with through the horses being trained to all the requirements of all conditions of the road. During the whole of my movements, not in one single instance did I see a horse make the smallest possible ado even when motors were most numerous, proving that the cause of most of the trouble in this country is through horses that ought never to be allowed on the public highway. In my opinion, with reason and justice, the Motor-Car Act, with fair treatment by the Local Government Board, will not impede the industry. If, however, on the contrary, we suffer from incorrect statements and biased conclusions, we shall at once starve as regards engineering possibilities.—Yours faithfully,

A. E. JOHNSON.

received our note and invoice in an envelope marked "O.H.M.S. address not known."—Yours truly,

WEBSTER AND Co.

AN "ACT" OF DISCOURAGEMENT.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Before advocating the "teaching of everyone in a position of influence that the safety and absolute control associated with the modern motor-car is undoubted," as you do in concluding your article on this subject in your current issue, it will be absolutely necessary to satisfy such that what you claim is a reality, because they are perfectly aware that, on the contrary, it is not so, which is proved by the frequent fatal accidents which occur almost every day through their not being under proper control, on account of defective brakes and tyres, and not being provided with safety appliances.

In these circumstances, it is not surprising that the Act just passed is "An Act of Discouragement," or, as described by your contemporary, "The Automobile Club Journal," "Killing an Industry," but which, under existing conditions, would have been more appropriate as "Killing : Industry."

Perfect and reliable brakes and safety guards are, as you are aware, provided on tram cars, and they only run at a speed of from five to ten miles an hour, whereas motor-cars often exceed that several times; therefore, would it not be more advisable, in the interests of motorists and the motor industry, to teach your readers to change this opinion, by providing such appliances, and thus rendering such occurrences, which are now so frequent, and rapidly increasing with the number of cars, less frequent, if not entirely conspicuous by their absence, instead of being almost inseparable, as one can scarcely see a paper nowadays without reading of one or more, the results of which are often appalling.—Yours truly,

HUMANE MOTORIST.



The Meet of the Kent Automobile Club at Shipbourne.

TRAPPED BY TELEGRAM.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Last Friday, driving through Dorchester, two policemen stopped my car and wanted to know if I had come from Bridport, as they had orders by telegram to stop a large red car, and as mine is a small green voiturette, I cannot regard this as otherwise than unnecessary persecution by some addle-pated country officials who must be colour blind. This took place in the centre of the town and in pouring rain, the usual crowd collecting and my engine stopped, of course. Cannot every motorist carry a little confetti and sprinkle it near traps.—Yours truly,

A LOCAL MOTORIST.

GRATITUDE ?

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—On Saturday, August 15th, we received a message urging us to send out immediately to a breakdown eight miles distant from our place at St. Albans. Although it was raining in torrents at the time our Mr. F. Webster hastened out to their assistance, and found two men in charge of a 9-h.p. car almost exhausted trying to get it going. Examination found various repairs necessary, which took 4½ hours. The car was put in order and proceeded to St. Albans on the way to Coventry. After filling with oil and ordering a few spare parts, the men asked for the account to be sent in to the owner, a gentleman at Shepherd's Bush, pretending they had only sufficient money to take them on to Coventry. Of course they were questioned, but they gave such satisfactory answers that the account was booked to the address given and sent in the same evening, but two days afterwards we

At the moment of going to press we have received a long and interesting reply from Mr. Norman Macdonald to Mr. Staplee Firth's letter in last week's issue, which we shall print next week.—Ed. M.-C. J.

MOTOR-CYCLE RECORDS.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am surprised to note that the Bat Motor Manufacturing Company, Limited, state that T. Tessier beat world's records for 1, 2, 3 and 4 miles at the Canning Town track on August 3rd last, riding a 2½-h.p. Bat motor. I had the pleasure of witnessing Mr. Tessier's remarkable performance in company with M. Soncin, who manufactured the identical motor used, and the nominal horse-power of the engine, which is now known as the "Automotor" (bore 87 mm., stroke 108 mm.), is 4½-h.p. but it develops nearly 6-h.p.—Yours truly,

P. G. ASTON.

CLUB NEWS.

KENT.

ON Wednesday, the 26th ult., the members of the Kent Automobile Club were hospitably entertained to tea by the Rev. and Mrs. Cotton, at the Grange, Shipbourne. A most enjoyable afternoon was spent in the beautiful grounds of the host. Before leaving, the photograph of the members present and their cars, reproduced herewith, was taken.

The club had a very enjoyable afternoon on Saturday last, when a hill-climbing contest was participated in on Wrotham Hill. Some very

fine cars turned up, but particulars of the times, etc., will not be published until after the committee meeting.

MIDLAND.

—ON the invitation of Mr. and Mrs. A. L. Chance, a club run is being held to-day (Saturday) to Great Alne Hall, Alcester.

FURIOUS DRIVING CASES. MOTOR-CARS.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Heanor.....	S. Ratcliffe	20	Dismissed.
Downham	M. Stocks, J.P., Hilgay	—	20s., etc.
Market			
Eastbourne...	B. Macdonald, Eastbourne	18	£5.
Northleach...	E. H. Ripley, Charlton Kings	—	£5, etc.
Longton	R. Corn, Burslem	30	£10, etc.
Gillingham....	H. R. Farquharson, Blandford	—	Dismissed.
Worthing.....	E. Umfreville	20	£3.
Kingston.....	E. G. Williams, Surbiton	20	£2.
"	Campbell Muir, Bath Club, W.	30	£5.
Steyning	H. E. Gwinner, Kensington	25	£5, etc.
"	P. K. Thomason, Kensington	19	£4, etc.
East Grinstead	A. Valengo, Leicester Place, W.	30	£3, etc.
"	Clifton Robinson, Piccadilly, W.	30	£3, etc.
"	A. Grace, Hammersmith	23	£2, etc.
"	W. Chapman	23	£2, etc.
"	G. Hill, Brighton	25	£2, etc.
"	E. A. Barker, Upper Norwood	22	£1, etc.
Arundel	Major Balfour, Piccadilly, W.	26	£5, etc.
Chertsey	B. Keyner, Twickenham	22	£3, etc.
"	I. Viola, London, W.	—	£5, etc.
Snaith	F. L. Baines, Gainsborough	—	£7, etc.
Banbury	W. E. Moss, Liverpool	25	£1, etc.
Retford	C. Sieveret (driver to Mr. H. Watt)	24	£10, etc.
York	J. W. Fryer, Mansfield	18	10s., etc.
Lincoln	S. Ball (driver to Capt. Ruston)	16	30s., etc.
Torquay	C. H. Woolley (driver to Mr. Jefferson)	—	£5, etc.
Steyning	A. Ruff, Fulham	—	£10, etc.
Staines	F. Hunt, Marylebone	25	£5.
"	W. Rewsey, Rotherhithe	21	£5.
Cupar, N.B.	F. Marshall, Edinburgh	—	Adjourned.
Beaconsfield	L. Gagon, Russell Square, W.C.	20	£5, etc.
"	W. L. McBride, Portman Sq., W.	21	£5, etc.
"	H. Damoulu, Lancaster Gate, W.	20	£3, etc.
"	E. Davis, Sunningdale	—	Dismissed.
Leatherhead	E. G. Sullivan (driver to Dr. Bruntton)	—	£2.
Gosport	R. Blake, Anglesey, Hants	30	£2, etc.
Clacton	L. T. Fullagher, Hertford	—	£1, etc.
Garstang	V. A. Simon, Liverpool	24	£5, etc.
"	G. Graham, Midlothian	19	£5, etc.
Torquay	C. H. Woodley	18	£3, etc.

MOTOR-CYCLES.

Chulmleigh...	E. Saunders, Winkleigh	—	£1, etc.
Croydon	W. Hill	—	£1 8s. 6d.
"	H. Sprunt, Kingston	—	10s., etc.

Where no alleged speed is given it is understood to be above the legal limit.

FINES amounting to £51, exclusive of costs, have been inflicted on motorists at Arundel in one day.

DURING the past fortnight fines amounting to £100 have been imposed on motorists in the county of Huntingdon, who have exceeded the legal limit of speed. Twenty other summonses are returnable for next week for alleged offences on the Great North road in the northern part of the county. In no instance, however, have the police taken action unless the pace was found to exceed twenty miles an hour, although fourteen miles is the limit stated in the county council bye-laws.

AMONG the batch of motor cases heard at Shoreham recently was that of John Bruton, who answered to an accusation of covering a quarter of a mile along the upper road at Southwick at thirty miles an hour. Defendant said he could not dispute the constable's word, but he did not believe he was travelling at the rate named, or anywhere near it. He had a brass plate on his car, so that there was no difficulty as to identification. That plea, however, did not mitigate the amount of the penalty, for he was fined £5 and 7s. costs.

HENRY R. FARQUHARSON, of Blandford, was summoned at Gillingham for driving a motor-car to the common danger at Gillingham on July 8th. Mr. Staplee Firth appeared to defend, and pleaded not guilty. The evidence of Sergeant Butson and P.C. Bishop was to the effect that defendant was driving a car, in their opinion, at over thirty

miles an hour. Sidney Hayter and Edwin Francis also gave evidence; that of Hayter differing materially from that of the police, except as to speed, while Francis could only state his opinion as to the rate the car was travelling at some distance beyond the spot spoken to by the other witnesses. Mr. Firth contended the evidence of Francis was irrelevant. Defendant went into the witness box and stated he was not travelling at more than nine to twelve miles an hour, and that he saw no children in danger of being run over. This evidence was corroborated by defendant's cousin, Mr. J. J. E. Farquharson, who was in the car with him. The magistrates retired, and on returning into court the chairman said the majority of the Bench had decided to dismiss the case. Each party would have to pay their own costs.

AT Retford County Police Court, on Saturday, Charles Sieveret, motor-driver, in the employ of Mr. Hall Watt, Bishop Burton, Beverley, was summoned for driving a motor-car at a greater speed than twelve miles an hour, at Torworth, on July 18th. P.C. Evans, of the Doncaster Borough Police, in response to a telegram from the police at Torworth, stopped the car, which was just approaching, at Doncaster. A fine of £10 and costs was imposed.

POLICE TRAPS.

ONE of the most dangerous police traps on the Brighton road is that between Purley and Horley.

OUTSIDE Warwick are three or four traps of a quarter of a mile in length.

ALLEGED REFUSAL TO STOP.

MR. L. GOLTWALTZ, auctioneer, Cardiff, was charged at Abergavenny, by Mr. Victor Bosanquet, chief-constable of Monmouthshire, with aiding and abetting the driver of his motor-car in driving at an excessive speed, refusing to stop when signalled, and giving a false name and address. Mr. Bosanquet said that on the 7th ult. he was driving a horse that had only recently been put in harness; it was attached to a brake. When about two miles out from Abergavenny, on the Monmouth road, he heard a motor-car approaching from behind, and held up his hand, his horse being restive. The car passed at something like thirty miles an hour. A few minutes later he found the car stopped by the roadside, and demanded the name and address of the driver, who told him "Thomas Johnson, Primrose Terrace, Shrewsbury." He also said he was the owner of the car. Subsequent inquiries proved this to be wrong. Witness called on defendant for the name and address of his driver, which he declined to give. After hearing the defendant's evidence the Bench accepted the statement of three other witnesses that no hand was seen by them signalling them to stop, but convicted on the other two charges, and fined defendant £5.

LICENSESES.

THE Inland Revenue authorities at Portsmouth prosecuted Edward Harding, cycle dealer, of Landport, for having kept a carriage without a license. The defendant was discovered driving a motor-bicycle with a trailer attached, in which his wife was seated. Two separate licenses were required—one for the motor and the other for the trailer.—A fine of £1 8s. was inflicted.

NO STAIN ON CHARACTER.

A SINGULAR prosecution took place at the Congleton Town Hall at the instance of the Chief-Constable of Congleton, Charles S. Hudson and John Nield, both of Stockport, being summoned for failing to pull up a motor tri-car in response to a signal from a person in charge of a restive horse. It was stated for the prosecution that on July 23 a man named John Broadhurst was in charge of a horse and cart in Congleton, when the defendants approached in a motor tri-car. Broadhurst, it was stated, put up his hand for them to stop, as the horse was becoming restive, but they failed to do so. The defendants were travelling at a reasonable speed. For the defence it was denied that Broadhurst put up his hand and both defendants went into the box, and stated that they had received no warning to stop. The police who had taken up the prosecution saw nothing whatever of the occurrence. The magistrate dismissed the case against Hudson, it being proved that he was not the driver. Nield was fined 5s. and costs, the chairman adding "There will be no stain on your character."

CLAIM FOR DAMAGES.

THE hearing of the action brought by Mrs. Elizabeth Greaves against Mr. Thomas Whitaker, of Newlay, to recover £500 damages for injuries sustained by the alleged negligence of the defendant in driving a motor-car, has been concluded. The accident out of which the action arose happened on December 27th last, while the plaintiff was crossing the Kirkstall Road, near the Cardigan Arms, Leeds, when the defendant drove his motor-car against her. In consequence of the shock she sustained serious injuries. Her skull was fractured, many of her teeth were knocked out, her sight and hearing had been impaired, she suffered from palsy of one side of the face, and had, since the accident, suffered from dizziness and indigestion. The jury, after half an hour's absence, returned a verdict for the plaintiff, assessing the damages at £125. His Lordship gave judgment accordingly.

THE Motor-Car Journal.

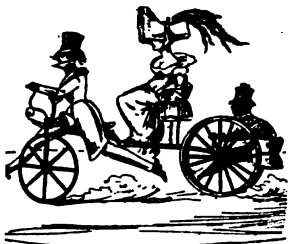
VOL. V.]

LONDON, SATURDAY, SEPTEMBER 12, 1903.

[No. 235.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



ON October 2nd and 3rd some important speed trials will take place at Southport, which now boasts an Automobile Club of its own, of which Mr. Marshall Hall, K.C., M.P., has just become the vice-president, and the secretary, Mr. F. Hugh, is proving an energetic officer. The trials have been organised by a local committee in conjunction with the Liverpool Self-Propelled Traffic Association, and the Mayor of Southport, Mr. T. Scarisbrick, and Mr. Leonard Williamson, the nephew of Lord Ashton, are taking great interest in the events, which will include motor-cycle races over a course of seven furlongs. In the tourists' car section there will be eight events over a kilometre course. The Lancashire clubs handicap will be another interesting item in the programme, and the racing car section should also be productive of exciting contests. Entries must be received at the A.C.G.B.I., 119, Piccadilly, W., before noon on the 25th inst., and, although an exception may be made in the case of foreign entries, no notice will be taken of applications from English competitors after that date.

"Blundering Legislation."

In a thoughtful article in the current number of the "Fortnightly Review" Mr. J. A. Spender discusses the question of Free Trade, and comes to the conclusion that "no commercial policy whatever could save us from the consequences, if the inheritors of wealth lost the strenuousness which had made wealth, or if, trusting to the old ways, we despised the weapons of precision and the scientific armaments which are as necessary in modern commerce as in modern warfare. Our industrial methods have indeed in recent years been somewhat analogous to our military methods. We mismanage the beginning, and are slow at the uptake of a new discovery, putting obstacles in our own path by blundering legislation; as in the case of the electrical industry, or more recently of the motor-car industry." Mr. Spender's conclusions with regard to the automobile show that he has followed the progress of the industry, and has recognised how the hampering conditions of modern legislation have prevented its early development to great things.

After the Race.

ECHOES of the great motor-car race in Ireland continue to reach us from the other side of the Irish Sea. Last week a woman was fined half-a-crown and costs at the Castledermot Petty Sessions for allowing her five head of cattle to wander on the public road near Castledermot two days before the event on July 2nd. Several people were also summoned for allowing their donkeys to wander at Abbeylands two days previous to the motor race. The usual nominal fines were imposed. Another example of the leisurely methods prevailing in Ireland is seen in a court of inquiry held at the police barracks, Naas, a few days ago, for the purpose of investigating a charge against Constables Godfrey and Fay, of the reserve force at the

depot, of having left their lodge at Ballyshannon after ten o'clock on the night of the 1st July. The accused, with other members of the Constabulary, were stationed at Ballyshannon for duty in keeping the course for the Motor-Car Race on 2nd July. After some contradictory evidence, it was announced that the result of the inquiry would be made known in about a week—two months after the event.

A Harmless Motorist Pulled up.

DURING the discussion on the Motor-Car Act, it was suggested that until a member of Parliament had been killed by a motor-car the House could hardly be expected to recognise the importance of the subject. Although not killed, nor in any way injured, a certain indignity has just been inflicted upon a member of the House of Commons, which should do something to show his colleagues how even a most harmless motorist is exposed to the carelessness and ignorance of anyone whom he may pass on the road. Mr. Alfred Davies went for his first run in a car to Sheringham, near Cromer, last week. All went well until they reached a village a few miles off Thetford, in Norfolk. There the driver stopped the car to lubricate certain parts of the machinery, and, whilst the engines were slowed down, a milk cart, driven recklessly by a youth, collided with a post in entering a gateway near by. The wheel was knocked off, and the lad who was driving forcibly ejected from his seat. A few minutes later the driver of the car re-started, and after going a few miles, Mr. Davies saw a policeman standing in the middle of the narrow road with his bicycle lengthways. The policeman demanded the name and address of the driver of the motor-car, and when asked as to the reason for his stopping the vehicle he replied that he had received a telegram saying that the automobile had collided with a milk cart and made off. It appeared that he was an inspector of the West Suffolk Constabulary, and Mr. Elliott, agent to Lord Iveagh, was the sender of the telegram. A few miles further on Mr. Davies was again stopped by two policemen on the same errand, and it was very clear to him, as a Parliamentary motor novice, that the carelessness of the police in these matters leaves much to be desired.

A Foretaste of the Future.

MR. A. E. ELLIOTT sends an explanation of the foregoing incident which, while showing he has no particular animus against motorists, illustrates the general readiness of the public to blame motor-cars for any mishaps that may happen on the road. He corroborates the M.P. in every detail save that he attributes the collision to the fact that the horse was frightened by the noise of the motor-car. Mr. Elliott sent his telegram on the evidence he received second-hand, and takes advantage of the occasion to warn motorists that under the new Act they would be liable to a fine not exceeding £10. Section 6 provides that a person driving a motor-car shall, in any case, if an accident occurs to any person on foot, horseback, or in a vehicle, or to any horse or vehicle in charge of any person, owing to the presence of the motor-car on the road, stop, and, if required, give his name and address, and also the name and address of the owner, and the registration mark or number of the car, and in default is

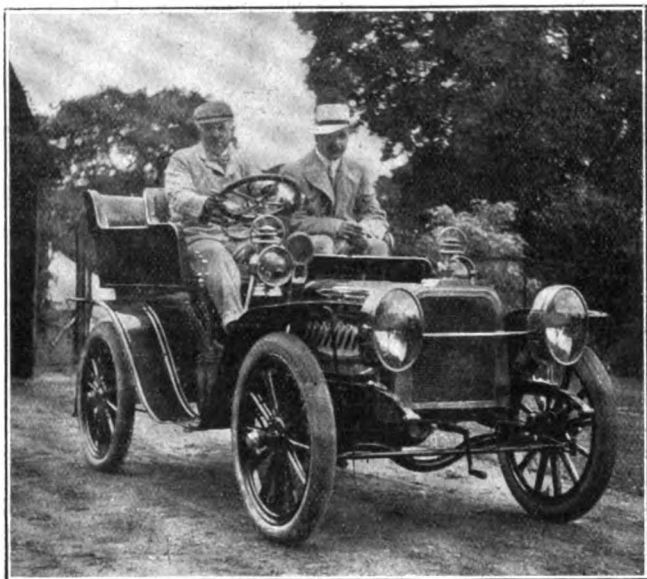
liable to a fine of not exceeding £10 for the first offence. We have italicised the word presence as indicating how very careful motorists will have to be, although we would remind Mr. Elliott that in the case which elicited the correspondence the motorist was not asked for his name or address.

The Emission of Steam.

As already intimated in these columns, the London County Council is actively interesting itself in the question of the emission of steam from light locomotives. In a case heard at the Lambeth Police Court on Monday, Mr. Helman-Pidsley, who appeared for the Council, mentioned that in consequence of numerous complaints of the sudden emission of steam from vehicles on the road, the police throughout the metropolis had been instructed to report all such cases. The Act makes the owner of the locomotive responsible, and according to the contention of the prosecuting solicitor, if a light locomotive emits steam, except from an accidental or temporary cause, the case comes under the Act of 1865.

Another Convert.

MR. SAMUEL SMITH, the governing director of Messrs. S. Smith and Sons, Limited, the well-known motorists' chronometer makers, is one of the latest converts to automobilism. His car is a 12-h.p. Clement, and his son, Mr. Herbert Smith, proved an efficient tutor in the art of driving. Mr. Smith, sen., has become quite an enthusiast, and may often be seen at the wheel of his car.



Mr. Samuel Smith on his Clement Car.

Restrictive Regulations Withdrawn.

THE Acting-Burgomaster of Antwerp has withdrawn the recently-made regulations by which motor-cars passing through the streets were limited to a speed of five kilometres an hour. The reason given for the withdrawal of the regulations is the fact that the festivities in celebration of the centenary of the Antwerp docks are now ended, and that consequently the town has resumed its normal aspect, and traffic is no longer congested. The real reason is, however, the outcry raised by motorists and manufacturers, who declared that motoring was impossible under these rules, and that an end to the motor industry would follow

their continued enforcement. The Burgomaster's proclamation, which notifies the withdrawal of the obnoxious regulations, points out that the regulations made in 1899 remain in force. These limit the speed of automobiles in country districts to thirty kilometres an hour.

Mr. Stanley and the Club.

FOLLOWING the criticisms of the Parliamentary Motor Party which were made in the official organ of the A.C.G.B.I. comes a copy of correspondence between the Hon. Arthur Stanley, M.P., and the Chairman of the Club, which unfortunately is too lengthy for publication. Mr. Stanley, however, protests against an alleged injustice done to Mr. Montagu in the journal of the organisation of which both are committeemen. He declares that the article voiced the views of a section, but not the ideas of the "great mass of sensible motorists." Such a statement can only be proved by a plebiscite of the Club; for the present, however, our own view is that the universal feeling—save among members of the Parliamentary Motor Party and their friends—is that it fairly well gauged the situation, and that the line taken by the Party in the House was distinctly unfortunate.

The Point at Issue.

MR. STANLEY criticises the statement that the Parliamentary Motorists accepted the Bill and adds that it was not for them "to accept or reject it, the decision obviously lay with the House of Commons." Of course that was so; but it was possible for Mr. Montagu and his friends to have voted against the measure, just as it was possible for them to vote for it—a way of showing acceptance. The point in dispute is that motorists were led to believe that the numbering proposals were a *quid pro quo* for the abolition of the speed limit, and that their position in that matter should have been made clear. Identification was secured, and when the speed limit was introduced no effective protest against such an arrangement was made.

Hard Words do no Good.

It is a pity that Mr. Stanley should have introduced into his letter such phrases as the "raving of a few extremists" to indicate the arguments of his opponents, and to describe as "ignorance and intolerance" the views of those with whom he differed. Motorists who could not see eye to eye with the Parliamentary Motor Party are denounced as having "raved and shrieked like hysterical old women," and yet Mr. Stanley wants to see the differences smoothed down—a rather striking way of beginning such a process.

Mr. Macdonald's Article.

ON another page we publish an article by Mr. Norman D. Macdonald, the chairman of the Scottish Automobile Club, which emphasizes the position we assumed some time ago. This article was written by Mr. Macdonald before he had read our leader of the 22nd ult., although it was called forth by Mr. Firth's reply to our own view of the situation. We are glad thus to find a confirmation of the attitude taken by the *Journal*, and trust that Mr. Macdonald's opinions will be carefully considered.

The Reliability Trials.

THE work of organising the forthcoming 1,000 miles reliability trials of motor-vehicles organised by the A.C.G.B.I. is well in hand. The competing cars must be within the goods entrance under the South Tower of the Crystal Palace by 12 noon on Tuesday next, otherwise they will be disqualified. Wednesday and Thursday will be devoted

to a series of brake, dust and noise trials. The daily runs start on Friday, the 18th inst., the programme being as follows:—

	Miles.
Friday, September 18.—Margate and back	150½
Saturday, September 19.—Eastbourne and back (Westerham Hill)	120
Monday, September 21.—Worthing and back (Bury Hill)	120
Tuesday, September 22.—Folkestone and back	139½
Wednesday, September 23.—Southsea and back (Hindhead)	144½
Thursday, September 24.—Bexhill and back	121½
Friday, September 25.—Winchester and back	133½
Saturday, September 26.—Brighton and back (Handcross)	91½

Vehicles will be started from outside the Crystal Palace at twenty seconds' interval in order of numbers, which will be secured by drawing lots for each day, the first car being started at 7.30 a.m. The drawing of lots will take place at the Crystal Palace on Wednesday next, at 12 noon.

Our Imports.

IN a previous issue we have given the Board of Trade returns with regard to automobiles for the month of July, and in our next number particulars of the August imports will be published. Some particulars as to the countries of origin in the former month will be of interest as well as of value.

valued at £8,192. Of 29 cars sent from Belgium to the United Kingdom, 18 were despatched from Ostend, 9 from Antwerp, and Brussels and Ghent sent one each. Thirty-nine motor-cycles were sent from Ostend, and cycle parts to the value of £3,186 from Antwerp.

The Turn of the Tide.

MR. W. B. PRITCHARD presided at the first ordinary general meeting of the Motor Manufacturing Co., Ltd., on Tuesday, when the shareholders were evidently gratified at the state of affairs disclosed in the balance-sheet. The payment of a dividend of 5 per cent. on the shares was approved. Mr. Mark H. Buckea was re-elected a director, and the chairman, directors and secretary (Mr. A. Burgess) thanked for their services.

Motor-Omnibuses.

REPRESENTATIONS are being made for increasing the facilities for communication between Haslemere and Farnham. A petition is about to be presented to the railway company asking them to institute a motor-bus service between those two places, via Frensham, Headley, Grayshot, and Shotermill, to

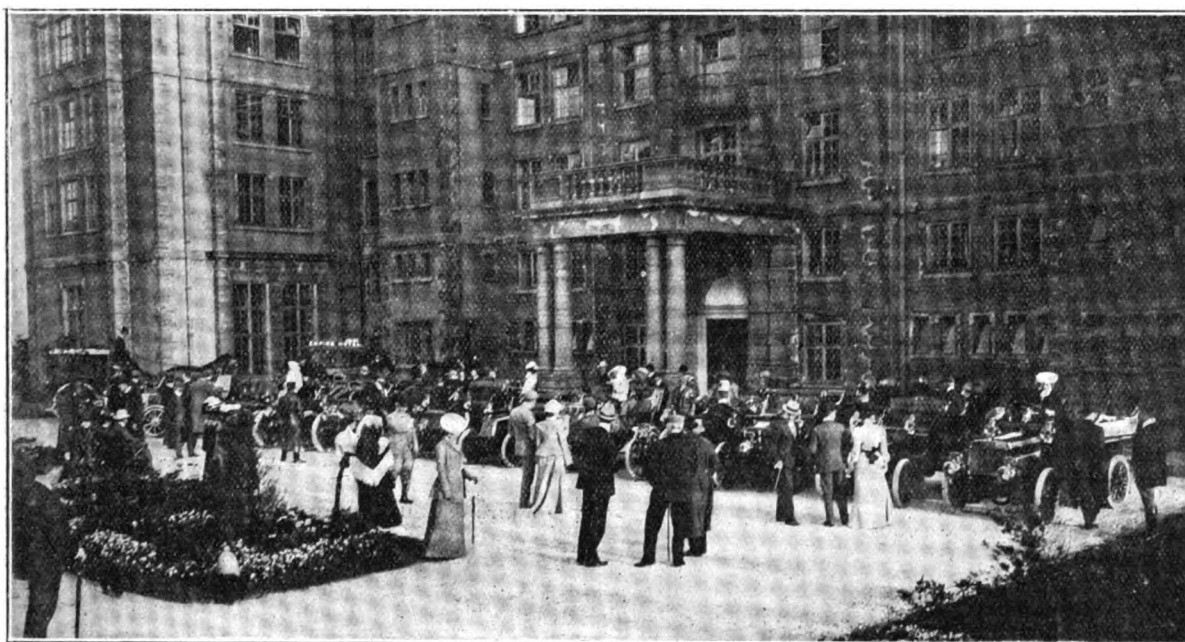


Photo by)

The Joint Meet of the Manchester, North-East Lancashire, Nottingham, Sheffield and Lincolnshire Automobile Clubs at Buxton.

(R. Banks.

From Christiania came a cargo the Scotch port of Grangemouth—an isolated instance that is more curious than valuable. From Holland the receipts at English ports comprised twenty cars and a motor-cycle, the value of the former being recorded as £4,590, and the bulk of the exports coming from Rotterdam. Germany sent fourteen cars from Bremen. The value of the cars from the United States was over £8,000, New York sending thirty-five and Boston eight, the former port also exporting parts to the value of £1,455, and a small export of tyres being separately classified in the Customs returns.

From France and Belgium.

SOME interesting comparisons can be made with regard to the exports from French ports. Thus 209 cars were exported to this country from Boulogne, their value being £66,447 as compared with 201 cars from Dieppe, valued at £88,860—an average from the latter port of £442. From Dieppe and Boulogne alone came parts totalling £6,300. Calais sent 48 cars valued at £20,651, and from the ports of Havre, Honfleur, Rouen, Dunkirk and Treport we received a total of 28 cars

run at regular fixed times. The matter has been discussed by the Council at Haslemere, who will forward the petition. At St. Dennis, in Cornwall, notable for the Cornish clay industry, an agitation is being promoted for a motor-car service. In Devonshire and elsewhere, the example of the Great Western and North Eastern Railway companies is inspiring local men of influence to commence agitations for the extension of the idea, while hardly a day passes when we do not hear of some Irish public body or other adopting a resolution hoping that its area may shortly have the benefit of a public motor service. Evidently the time is coming when such will be secured on a remunerative basis.

Closing the Roads.

AFTER considering a similar matter at a public meeting at Yateley, in Hampshire, it was resolved to petition the L. and S.W. Railway to run a motor omnibus from Eversley, Blackwater, through Yateley and Hawley, to Farnborough Station and back on the mornings and evenings of all days except Sundays. Unfortunately this decision was coupled with

a resolution to petition the Hampshire County Council to place a limit on the speed of motor-cars on certain roads in the parishes of Eversley and Yateley. This question of closing roads should have been deferred until the people have seen the motor-vehicles in regular operation.

A Case at Perth.

THE Town Council of Perth has prohibited motor-cars and carriages being driven over that part of the recreation ground of the burgh of Perth known as the North Inch, without the written permission of that body. The other day Dr. Walford Bodie innocently ventured across the way, and had, in consequence, to appear in the local police court. Asked if he had anything to say in mitigation, the doctor replied that he had nothing except that he regretted having offended. It was quite innocently done. He saw carriages had been there, and in the morning observed a carriage proceed up part of the drive. He drove round to see if he could get an opening, and he found a big opening and drove right along the Inch. He came out again, and no one said anything to him. On Tuesday he again came along the drive. There was no notice that he saw prohibiting carriages or motors from driving there. Afterwards he saw a board, but it was too high for him to read it. Bailie Barlas said the town council had framed bye-laws, and they had received the approval of the Secretary for Scotland. In the circumstances he thought the case could be met with a fine of £1, with the alternative of fourteen days' imprisonment. Notice boards in such places should be properly fixed, so that they can be read with ease, and we mention the matter now to remind the provincial clubs and other interested bodies to carefully watch the Local Government Board regulations on this point.

The Herefordshire Club.

ANOTHER automobile club has been formed, viz., the Herefordshire Automobile Club, of which Mr. J. T. Hereford has been elected president, with Mr. Wilfred Groom, of Wroxeter, Hereford, as secretary and treasurer. We are glad to welcome this addition to the organisations now being formed throughout the country for the purpose of social intercourse among motorists, and also, if necessary, to keep a watchful eye on the doings of local busybodies who may seek to harass those who own cars.

Motor Volunteer Corps.

A SERIES of staff rides in preparation for the manoeuvres have been organised for the last six week ends, and have been very largely attended by officers and members of the Motor Volunteer Corps who anticipate taking part in the manoeuvres. Great keenness has been shown by the members in tracing out and driving over the roads allotted to them, and conspicuous punctuality and regularity has been demonstrated in arriving at the points of concentration, while considerable soldierly aptitude and discernment has been shown in the excellent road reports sent in. On last Saturday's ride the detachment were in the uniform of the corps, and turned out very smartly on parade in the High Street, Marlborough. The corps goes into its quarters at Marlborough and other points in the manoeuvre area to-day (Saturday).

Police Object to Publicity.

AN interesting dialogue occurred at the Kesteven Court at Lincoln the other day, when four prosecutions for exceeding legal limit came before the Bench. The solicitor for the defence naturally inquired the method of signalling adopted by the police to secure their evidence, but the superintendent objected to the public being permitted to know the methods that were adopted. The chairman of the Bench, however, expressed the desire to get to the bottom of the motor cases, and pointed out that a few days before a doctor had been pulled up

on his way to see a patient. In the second case the defendant was pushing his automobile up the hill, and the magistrates had to acknowledge that they did not think it was much of an offence. The policeman was on the top of the hill, and the evidence was not very satisfactory. They, however, came to the conclusion that they must convict, because the defendant was exceeding the legal limit, but they reduced the fine to one shilling. Evidently it was not a case to take into court at all. If, however, such was the fact, why did they mulct the defendant in the sum named?

An Inter-Club Meeting.

ON Saturday last contingents from the North-East Lancashire, Lincolnshire, Sheffield, and the Nottingham Automobile Clubs had a week-end run to Buxton in order to meet there the Manchester Club, making the Empire Hotel their headquarters. The cars began to arrive shortly after 4 o'clock and took up their position in the spacious drive in front of the hotel. The total number of motor-vehicles taking part in the run was 45. The members of the various clubs met together after dinner in the smoke room and exchanged opinions on such matters as the new Bill and affiliation. Before lunch on the Sunday a number went in their cars to different points of interest in the neighbourhood. After luncheon Mr. L. G. Schwabe, one of the committee of the Manchester Club, proposed a toast to the success of automobilism. The Vice-President and Hon. Secretary of the Nottingham Automobile Club supported it, and the toast was drunk with enthusiasm. After lunch the cars began to disperse, only two or three remaining over until Monday morning. The only disappointment was that owing to runs having been arranged on the same date the Yorkshire and Midland Clubs were unable to join in the run to Buxton.

A PETROL motor hose cart has just been supplied by Messrs. Merryweather and Sons to the Capetown Fire Brigade.

MESSRS. DE DION AND BOUTON are building a 30-h.p. steam water cart for the municipal authorities of Paris.

A PETITION for the compulsory winding up of the London Motor Omnibus Syndicate (Limited) has, by consent, been dismissed.

A BILL regulating motor-car traffic throughout the German Empire is to be introduced into the Reichstag by Count Posadowsky, Minister of the Interior.

THE MOTOR CYCLING CLUB run on Sunday, the 13th inst., will be to the Bedford Arms, Woburn. Meeting place 11.15 at the Old Salisbury Arms, Barnet; lunch at 1.30.

THE Automobile Club de Namur and Luxemburg is organising a tour into France for the end of the present month under the guidance of Baron Pierre de Crawhez.

A POSTAL motor-car has been secured from the General Motor-Car Company, Limited, by the General Post Office, and is now travelling fifty-eight miles daily in the metropolitan area.

THE Automobile Club of Avignon, being unable to organise its annual hill-climb, is organising in its place an excursion to the observatory on the summit of Mount Ventoux for the 24th inst.

AT Warrington, Mr. Bellian stocks petrol and motor-car accessories at his place in Sankey Street. He has an excellent plant for repair work, and is recommended by well-known motorists who have toured in the district.

UNDER the name "Marlborough" the Pall Mall Autocar Company have introduced a new four-seated car. It is fitted with either a 6-h.p. De Dion or a 6½-h.p. Aster engine, and has three forward speeds and a reverse controlled by a single lever.

MESSRS. KELLY, B. UMPEY and COMPANY have arranged for their garage in Market Street, Birkenhead, to be open day and night. Repairs can be executed at any hour. They also stock petrol, oils, etc. Being close to the ferry, motorists will no doubt find this garage convenient when too late to cross into Lancashire.

AN "ACT" OF DISCOURAGEMENT.

BY NORMAN D. MACDONALD.

MY friend, Mr. Staplee Firth, knows me well enough to know that I am making no attack on his genial and able self if I use him as a whipping-post to impress certain points and recall certain things, as to the doings of a number of well-meaning folk, some from that dangerous love of compromise—the one thing which in many ways has cost Great Britain so much—some from undue haste and impatience, and some from a childlike innocence, which led the A.C.G.B.I. into a false position, and the whole of us into a mess. The bland faith and innocence of those who thought they had pocketed a Government by the remarks of some Cabinet Ministers, and could control the Parliamentary den of lions by entering it with their hands full of compromises, was incredible. What rabid ignorance, spite, false conservatism, and a true British hatred of progress was capable of they might have judged by the continuous and unconcealed prostitution of the Seat of Justice in all parts of England—by men sworn to do justice, but who had often so little control over their rabid minds as not to have the decency and dignity to at least conceal their shame by holding their tongues. Or they might have been warned by the torrent of nonsense and abuse in letter and article in otherwise sane and honest journals, and signed by men of education and position, not to mention County Councils, and minor meetings of all sorts.

I only rake up the past in order that we may not be led so softly and falsely in the future. We want policy, principle, and backbone. I don't mean we should fight and defy or do anything not fair and gentlemanly. But the descendants of the men who opposed stage coaches and early motor-cars by violence, and railways and bicycles by all Parliamentary and legal means, and by stupid, ignorant stuff on oath, are not to be converted by a turning of the cheek to the smiter. They will best learn the sensible side by time, and by those who do know their subject boldly standing on principles and educating them by carrying a war of facts in uncompromising geniality into their camp.

Mr. Staplee Firth once again seems to defend the giving away of the first important principle—that a private carriage should neither be numbered nor licenced to run, unless all kinds are. And this, forsooth! because there be blackguards about. On the same lines I could argue more strongly the other way. The fact that there were gross miscarriages of justice in abundance, and deliberately too, was a real reason for not aiding such scandals by either making it easy for all drivers to be persecuted, or putting a stigma on motor-cars and so making an official notification (as it were) that these vehicles are in themselves extra dangerous, or their drivers extra wicked, and hence that the whole thing wanted marking down, and a severe control. The country swarms with blackguards of all sorts who would be better shipped to the Sabara in the public interest, but no one has yet ventured to say that folk should be labelled and licenced to go about in order that these gentry may be known to the police and tracked from point to point. Our ideas of the liberty of the subject are wide enough yet to save even the worst convict from being made conspicuous *pro bono publico* on release. The number of "road hogs" who are a real danger is extremely small in proportion, and the police and the law could have dealt with them, just as it does with any public danger, if it were necessary. With all respect, I fear Mr. Firth, when he careers around, is a "road hog" in the eyes of the folk who have got up the hue and cry—and of all the other ignorants.

The statement that "the Club" considered numbering, etc., the only means of getting rid of the "road hog," I venture stoutly to deny. The Club never had any chance to discuss or give views on the matter. We were told over and over again that if we would swallow a principle we would get no speed limit, not abolition of "road hogs." And I go further and say that "the Club," as a whole, did not want the matter opened up at all, and certainly did not want numbering, etc. I know all about

the vote. This was put off and off until we knew the Government had a Bill for certain, when all interest in the old question was lost, and a very small vote took place, because most automobilists knew the only real point was what was in the Bill, which was, after all, a matter beyond the Club's control. Even the useless vote was taken on false issues. Instead of a straight point on a principle, we were asked to vote for numbering, etc., "provided" three things, I think. One of these was the utterly impossible idea that Parliament would deliberately undo a high legal decision. Another was an extraordinary proposed attempt to introduce a very bad principle indeed into law, and especially criminal law—viz., an appeal on facts. On principle, for the good administration of justice, points of fact should be left solely to the Court which has seen the witnesses and heard them cross-examined. In any case, as I understand (feebly) the archaic law and procedure in England, I fancy the appeal may be only from a few amateur and narrow-minded justices to a sort of meeting of the same. The looseness of the procedure, the so called "evidence," and the generally off-hand and truculent procedure in inferior Courts in England is an astounding mystery to a Scotsman, and specially to a Scottish lawyer. It only shows in another way the vast conservatism and worship of "what has been" which enables an Englishman to be content with, nay proud of, institutions and procedures thereof which are harmful and oppressive in many ways.

But the movement to vote for branding ourselves, baited as it was with impossible and undesirable things (which a kind Parliament was to grant us as favours in legal matters such as no other section of the community enjoyed before the law and the Courts) was forced down our throats by a circular signed by many honoured names in all walks and ranks of life who formed the Legislative Committee. I venture to say that very few of these noblemen and gentlemen had ever met to go into the subject, even if they were qualified to understand legal and Parliamentary points, and the future results of any enactment. Moreover, the circular was signed by some who were openly opposed to numbering, etc. I doubt not they did it either to please others or to seem unanimous, or in hope that they were doing the best for us all round, and misled by the impossible "provided that," perhaps. But it was hardly fair to the ordinary members to parade all these honoured and great names as if they had deliberately considered the whole matter and come to a solid conclusion.

Events have proved all too strongly how wise was the admonition addressed by the Scottish Club to the A.C.G.B.I. that it was most unwise to go playing with fire by stirring up the Legislature, and that the true and safe position for the Club was to "watch jealously any attempt to alter the present law." In fact, we should have entrenched ourselves and awaited the enemy, and used every exertion to postpone more Acts of repression, knowing that every day meant more recruits, more public knowledge, and every month more motorists in the two Houses.

The funny thing now is to note that few motorists see the real dangers and hardships ahead. All our rage and doubts and fears seem to revolve round the same speed limit point. If our furious and blind enemies are at all wise, they will not bother themselves *re* such a petty thing as the speed limit and its fines, etc. Parliament has actually put in the fore-front of the Act, first, the suggestion that we are likely to be dangers, and then gives unprecedented powers and pains and penalties to enable us to be held down and persecuted by the very men in power, whose wish and intention openly is to drive out the new thing or to make it crawl.

Because, note, that the £20 and £50 fines, and three months imprisonment, are placed in the hands of a couple of old-wife J.P.'s, on the evidence of any pair of those hysterical persons who shriek about dangers and talk of furious and reckless driving where such is only the vain imagination of their fussy, or horsey, or prejudiced, or generally dense and ignorant minds. The "speed," or "manner which is dangerous," or "recklessly," or "negligently," the "circumstances" of real or imaginary traffic,

the "nature," "use" and "condition" of the highway are points which give the prosecution and the persecutors on the Bench every possible help and hint to find such facts proved in order to come down promptly with a fine or sentence in line with their desires. What little quibbles will be sufficient evidence and proof of danger, recklessness, etc., we may guess from the drivelling nonsense poured forth in the press and Parliament. And what chance of a fair trial will a man have who appears before one of these petty courts with the conviction of another ditto endorsed on his permit to do the acts of a free citizen? In Scotland the utmost care is taken that a calm, hard-headed jury shall know nothing of the previous convictions of the worst convict brought before it. And there are no petty prejudices in a Scottish jury. Worse still, on the third conviction, for any offence connected with a motor-car, the court can, in addition, absolutely prevent a citizen from doing an act of ordinary life and freedom for as long as it chooses. So far as I know not even ticket-of-leave men are so far deprived of ordinary liberty. Such a power against the doing of a thing belonging to legitimate freedom has never even been given to the highest Courts. It is monstrous, and a subversion of the primary principles of liberty.

I, of course, speak of England mainly. Scotland can look after itself, and will, in any case, keep its head and not really impede progress. Luckily our law is administered by paid and trained servants of the Crown, who are assisted by Public Prosecutors of the same position, and both of whom work together not to persecute but to get at the truth and deal fairly; and these advocates who fill the local chairs of Justice have only the welfare of the public and the dignity of the Bench as their aim. We are not cursed with the iniquitous system of a policeman prosecuting, or of a private person doing the same, or hiring an able advocate to do it for him. But the main struggle against ignorance, prejudice and persecution must go on in England, and I suggest the following as the main plan of campaign for our side:—

1. The formation of a big fund with which to fight every case and to appeal, using good solicitors and barristers who can press the matter firmly, calmly, and fully on the Courts, and handle the witnesses, of enough experience and address to prevent themselves being browbeaten by the bench or prosecution. Alas! there can be only one Staplee Firth, and he can only be in one place at a time. But with money the Club could command good men, who would soon learn the points for all cases where the party could not well pay himself. No legal stone should be left unturned, and the Courts made to hear each case and every appeal at full length.

2. The fund also to be used for a vigorous prosecution of all the horse breakers of the law—specially those cases of driving on the wrong side, horses not attended, training horses on the roads, showing off horses to purchasers on the road, and so on.

3. Motorists should, whenever fair, carry the war at once into the enemy's lines by giving notice that they intend to proceed by criminal information or by civil action against the other party, and follow this up by a complaint to the police or by a letter from a solicitor. Take the case of the very harsh and false position provisions of Clause 6, wherein everything is laid so that in the case of a horse accident, the driver of any motor-car within sight is assumed to be to blame. In most cases it will frighten off persecution if the motorist goes for the horse party and lets him know that he will denounce him for having a dan-

gerous horse on the highway. If there is a collision and damage to the car, at once threaten damages and follow up with a demand per a solicitor.

4. The motorists in Parliament should ask questions about any gross injustice to the Home Secretary, the Lord Advocate of Scotland, and the Chief Secretary to the Lord Lieutenant. Plenty of cases will arise where the same Court will fine wife-beaters, drunken, furious horse-drivers, and gross cruelty to animals or children fiends a few shillings, and then some motorist a great many more pounds under the imagination stimulated by Clause 1. Every case of injustice or inequality or marked revengefulness should be held before the public per Parliament.

5. The motor-car party should introduce, and press upon Government, Bills to prohibit persons under seventeen from driving horses; compelling all vehicles to show front and rear lights at night; identification plates and numbers on all carts, vans, etc., going faster than a walk (showing front and rear); restricting all tramcars to ten miles an hour maximum; imposing higher minimum penalties for being drunk in charge of a horse, having untrained horses on the high road, leaving horses unattended, and the like. Other points to make it lively and in the real public interest will occur. Why is the general law compelling 9 ft. 6 in. between the tram lines and the kerb so regularly over-ridden?



A Motor Meet at Dessau, Germany.

Automobil Welt.

What makes one so warm over the whole business is that Parliament has deliberately set its seal to the thing as specially dangerous or noxious, and thus set back, and perhaps for ever restricted, what is not only a safer mode of transport but the one most able to benefit the whole community, if it had been given scope, and also that we should have unwittingly helped it all by the well-meant but confiding or hasty weakness of a few men who seemed blind to the dangers certain to come

unless fresh legislation were not only not talked of, but kept back as long as possible.

The only gleam of humour in the thing is that the twenty miles an hour absurdity will compel kings, princes and governors, judges and magistrates, nobles and men of estate, and even common M.P.'s, to be daily law breakers, when they are at the same time doing no harm whatever to anyone.

If the Legislative Committee was really playing so low as making "the Club" seem to take upon itself the *ultra vires* nonsense of exterminating a few vermin by putting the whole of us as marked victims before the whole enemy and giving away a great principle of private life, it should have said so clearly, in place of trying to make us believe we could get unlimited speed if we agreed to be branded. Then things would have been focussed and the Committee asked to devote itself to practical politics and leave the few "road hogs" to the certain consequences of their actions if they really caused accidents. The pains and penalties and damages of daily criminal law are always heavy enough to protect the public from any serious menace. Judge and jury might have been trusted to make the punishment (and damages) fit the crime.

A PUBLIC motor-car service has just been started on the island of Corsica, between Bastia and Cape Corse.

THE President of the German Automobile Union has issued a circular urging the members to observe more carefully the regulations with regard to motoring in Berlin.

CONTINENTAL NOTES.

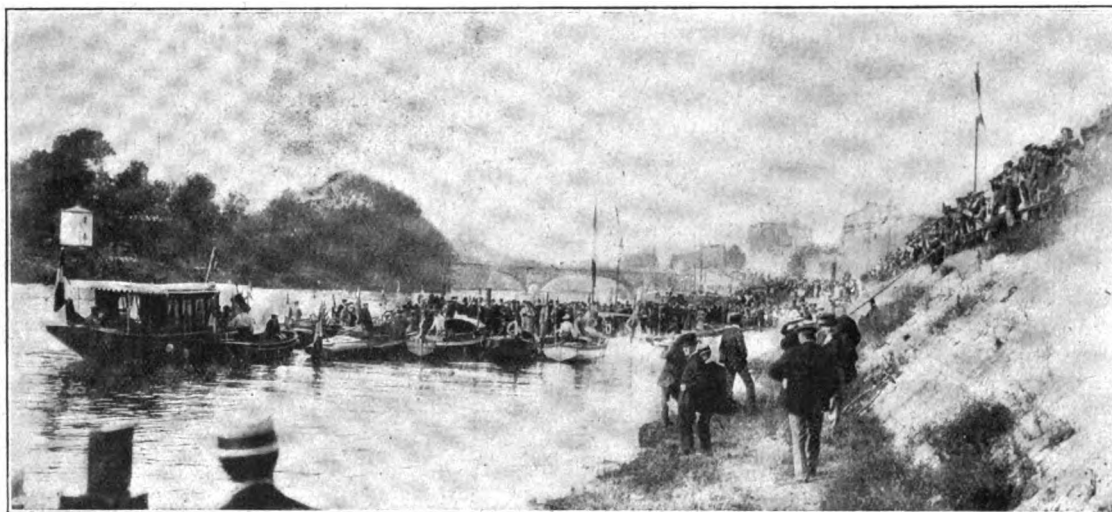
BY "AUTOMAN."

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THE motor-boat race from Paris to the sea, which "went up like a rocket," has "come down like the stick" through a complete want of organisation or rather want of knowledge on the part of the organisers. The Paris or river end of the competition went very well, but as the sea was approached it became painfully evident that the race was in the hands of "land lubbers," who completely ignored such insignificant matters as tides, tidal basins, ebb and flow. Last week's *Journal* left the competitors at the end of their first day's journey at Mantes on Sunday evening. On the Monday morning the first boat got off at 6.33 a.m. Just after the start an accident occurred to an automobile wagon which had been provided by M. Védrine to carry luggage for those on board the competing motor-boats. The wagon was being driven by a negro in the service of M. Védrine, and was loaded with a nondescript lot of portmanteaux, valises and hat boxes, and sundry parcels, and was placed back on to the river at a spot where there was a sheer drop of about five yards from the quay to the surface of the water, which was 12 feet deep. The coloured driver, not realising how near he was to the water, put in the reverse motion and plunged

the first time there were no locks to go through. Here, however, the sea began to make itself felt. The start should have been made at 11.30 in order to arrive in Rouen ready for a mile race which was to take place at 2 p.m. The tide, however, had been forgotten, and the start had to be put off until 1 p.m., the last boat getting off after 2 o'clock. The boats should have been handicapped at Elbeuf, and there was to be a kilometre race at the start for a cup given by the Elbeuf municipality, but the timekeeping organisation for the handicap and the kilometre were so hopelessly imperfect, and the times as worked out so fantastic, that Tampier refused to give them out officially, and both events were relegated to the shades of Nimbo.

At Rouen the harbour was decorated, and the mayor and the general commanding the district and a great many distinguished people gathered to welcome the motor-boats, and to witness the mile race, which was put off until four o'clock in the afternoon. As on the preceding days the Mercedes was an easy victor, and it also won the mile race, doing the distance down stream in 3 minutes 33 2-5 seconds. In the evening a Venetian fete had been organised, but an altogether untoward and unrehearsed event rather dampened the ardour of the visitors. Just at the conclusion of dinner at the Hotel d'Angleterre, which faces the quays at Rouen, in the busiest part of the port, for some inexplicable reason a crowd of dock loafers crowded



The Start of the Paris-Trouville Motor Boat Race.

calmly but definitely backwards right into the river, where, still holding on to the now useless steering wheel, he went down to the bottom and was completely lost sight of until he reappeared spluttering and shouting for help amidst a medley heap of floating bags and hat boxes. Two passengers who were in the wagon had time to jump on to the quay before the negro went over with his load. The driver and the floating baggage were fished out slightly damaged by water only, and later in the day the wagon was hoisted up from its watery grave. M. Védrine, who was on board his motor-boat, heard of the accident at Port Villy and gave up the race, but later, having heard that the results were not serious, followed in a motor-car which had the damped baggage on board, and joined the whole party at the Hotel at Elbeuf, where the wet clothes were all hung up to dry and gave the place the appearance of an old clothes shop.

THE day's racing was almost without change in the relative positions of the boats and almost without incident, the Mercedes being an easy winner and covering the 109 kilometres (67 miles 6 furlongs) in 3 hours 29 minutes 42 seconds, more than half an hour ahead of its competitors. A crowd awaited the arrival at Elbeuf, where the official timekeeper, Tampier, anchored out in a punt, took the times under a tropical sun.

THE third day's course lay between Elbeuf and Rouen, over a distance of only 22 kilometres (13 miles 5 furlongs) and for

round the hotel, bombarded the guests with all kinds of projectiles and used insulting language to the ladies, and a battle royal took place before the police turned up to re-establish law and order.

THE fourth day of the motor-boat race consisted of a journey of 62 kilometres (38 miles 4 furlongs) from Rouen to Caudebec, which is the place where the tidal wave in the river Seine makes itself most felt, mounting, at certain tides, many feet above the normal surface of the water. The weather was very fine for the start, which was made from 10 to 11 a.m., and it held up all day, getting gradually threatening towards the evening, when a heavy rain storm took place. The competitors kept nearly the same relative positions, the Mercedes being still unbeaten as a racing boat, and the Narval always at the head of the cruisers.

THE fifth day should have consisted in a journey from Caudebec to Havre via the harbour of Honfleur, along the navigable channel of the river Seine, arriving at Honfleur at about noon, but at this time the harbour in question, owing to the ebb tide, was a sea of mud, and the few spectators who had come to see the arrival of the motor-boats at once recognised that they could not come that way, and that they must have been forced to take the Tancarville Canal, and this turned out to be the case; but to add to the difficulties, the boat which was carrying Tam-

pier, the official time-keeper, drew too much water to get past Tancarville at low tide, and so, as there was no automobile or other means of transporting him, he did not arrive at Havre until late in the night. The motor-boats arrived at Havre without incident, but the public in crowds waited for them on the jetty, whilst they actually arrived in quite another part of the basin, the Mercedes leading, as usual.

THE sixth and last day of the Paris to the sea race should have consisted in a triumphant arrival at Trouville, across the estuary of the Seine opposite Havre, but, alas! there was a change in the time of starting from Havre, and the boats arrived at Trouville at half-past-eight in the morning instead of at two in the afternoon, and although there is both telegraph and telephone between Havre and Trouville, the organisers of the race had completely forgotten to inform Trouville of the change of plans. Monsieur Hoe, the sympathetic Mayor of Trouville, who is a great sportsman, intended to give the motor-boats an official reception, and the "Auto" says that after the boats had arrived he was informed of the fact by a "mud-lark" from the harbour, and was very naturally furious.

AT Trouville there were races on the following day, first of all over a nautical mile, and then over a three-mile course, for a

the other way round, that is to say, from the sea to Paris, when the true racing qualities of the competing boats would be brought out at the end, and the race would be much more exciting and interesting to the spectator, whereas from Paris to the sea it is "all over but the shouting" long before the arrival at Trouville. In any case, the organisers of the event are to be congratulated on the idea of such a race, and no doubt the experience they have gained will enable them to avoid mistakes another time.

THE Gordon Bennett cup race will be held next year on roads in the neighbourhood of Homburg, and the Emperor of Germany is taking personal interest in the event and will in all probability be present at the winning post. The German team will be made up of two Mercedes cars, and there will be eliminatory trials for the third place. Three firms have sent in a request to compete; they are the Benz Company of Mannheim, de Dietrich and Company, and the New Automobile Company of Berlin. It is suggested that the eliminatory trials should be held on the sandy sea shore of the north-eastern end of the island of Usedom, where the sand is quite hard enough to support the weight of the heaviest car. There is a course there of fifty kilometres in length which is frequently used by automobiles. The road is flanked on one side by precipitous cliffs



The Paris-Madrid Tour.—At Cahors, France, the Bishop inspected the Cars.

[Le Chauffeur.

cup given by Gaston Menier. The two races were both easily won by the Napier motor-boat, which was sent over too late to do the whole journey from Paris to the sea, but which arrived in time to completely take the shine out of the Mercedes, which had hitherto been triumphant all along the route. In the mile race the Napier took 3 minutes 33 seconds, while the Mercedes took 3 minutes 50 4-5 seconds. The Gaston Menier Cup which was won by the Napier is a cup given exclusively for boats completely of French manufacture; however, in order to add to the interest, the Napier and the Mercedes were allowed to compete, so that the cup is now held by a boat of purely English manufacture, whilst the second in the race was the Mercedes, of which the hull only is of French manufacture.

AFTER the Paris to the sea race was completed, it gradually oozed out that the measurements and classifications of a great many of the competing boats were wrong, and many protests were lodged which it will now be very difficult to settle. It is quite evident that the race was undertaken without the experience or care required for such an event, and should there be another such race next year, no doubt greater precautions will be taken. It would also be better, in my opinion, to hold the race

and on the other side by the sea. Another suggestion is to hold the eliminatory trials on a 250 kilometre course along the uninhabited shores of the Gulf of Dantzig, between Dievenow and Putzig.

FROM another source the news comes to hand that the Homburg course chosen for the 1904 cup race is over very bad roads, with sharp curves abounding, and also dangerous hills.

LAST week I indicated an automobile excursion to Compiègne. About ten miles south-east of Compiègne is situated the town of Pierrefonds, where the chief object of interest is the ancient feudal castle, which was destroyed at the same time that all the castles in France were destroyed to prevent the barons and feudal lords using them as fortresses against the King. The castle of Pierrefonds was completely rebuilt and restored under the Napoleons by the famous architect Le Duc, and it is now the finest specimen extant of a mediæval castle, complete in every respect and well worthy of a visit. The road from Compiègne to Pierrefonds cuts through the heart of the forest in a straight line, commencing at the Carrefours Napoleon, where you take the left hand road; the surface is perfect, and you may indulge in the highest speeds until you reach the town of Pierrefonds and

see the mighty battlements of the castle towering above the town on the side of a pine clad hill to the left. You will find garages and every accommodation in Pierrefonds, and you will be well looked after in the Hotel des Bains if you decide to make a stay and try the effect of the sulphurous waters of the lake.

FROM Pierrefonds to Paris is about eighty miles, and through lovely country. You leave the castle on your right hand side and take the road leading to Retheuil and Tailfontaine, after leaving which village you turn to the right up the hill and through heavily timbered country into Villers Cotterets, which is situated on the border of a forest of the same name. Villers Cotterets is about twelve miles from Pierrefonds and is the birthplace of Alexandre Dumas, who wrote the famous "Three Musketeers," and to whom there is a monument in Villers Cotterets. On arriving in the town turn sharp to the left, and go right along past the statue of Dumas and over a level crossing on to the road which leads to La Ferte Melun. When you first arrive in the main street of Villers Cotterets beware of the right hand road, which also leads to La Ferte but which is very badly paved, and insist on crossing the village and passing the statue. La Ferte Melun, the birthplace of Racine, is about nine miles further on, and you had better take in petrol there if you require it, as you are not likely to find any more until you reach Meaux. The writer found himself without any on this road and had to be contented with two litres of lamp oil, which took him along in fine style. At La Ferte Melun you cross the river Ourcq and the Eastern Railway, and after going through the main street of the town, turn sharp to the right along the main road towards Meaux, which is some thirty miles further on. The road passes along the lovely valley of the Ourcq, over a veritable switchback railway with beautiful views developing on the ascent of every hill. On the road to Meaux you pass through the villages of Bourneville, Mareuil-sur-Ourcq, Neifchelles, May, and Gue-a-Tresmes. At Meaux there is a cathedral dating from the 12th century, and with a facade that will repay a visit. From Meaux into Paris is a distance of about thirty miles, and there are several different roads, but the one I should recommend goes due south along an almost interminable avenue of big trees to Saint Germain-les-Couilly, where you turn to the right and make for Chessy, up a steep hill on a long curve in the road. From Chessy you make for Lagny, which overlooks the valley of the Marne. After Lagny, you pass through Bussy, Torcy and Champs, all overlooking the river Marne, and on to Noisy-le-Grand and Bry-sur-Marne, where you keep to the left up the hill instead of following the tram lines and crossing the river as the main road does. This brings you direct to the bridge which crosses the Marne and leads you into Joinville-le-Pont, where you keep right on up the hill and avoid the turning to the right, which leads you into the thick of the town. In a few minutes you are in the Bois-de-Vincennes, where you keep along the Avenue de Gravelles until you reach the Rue de la Republique, on your left, which leads over the railway lines and down to the banks of the Seine, where you turn to the right and keep the river on your left, following it along to the Octroi gates, where you declare your petrol, and go on along the river without leaving it until you reach the Place de la Concorde.

THERE was much excitement in the square in front of the Cathedral of Notre Dame on Monday last, when Madame Lockert set out on a 14-h.p. Tony-Huber car on a journey from Paris to St. Petersburg. The intrepid *chauffeuse* expects to make the trip in easy stages in about three weeks.

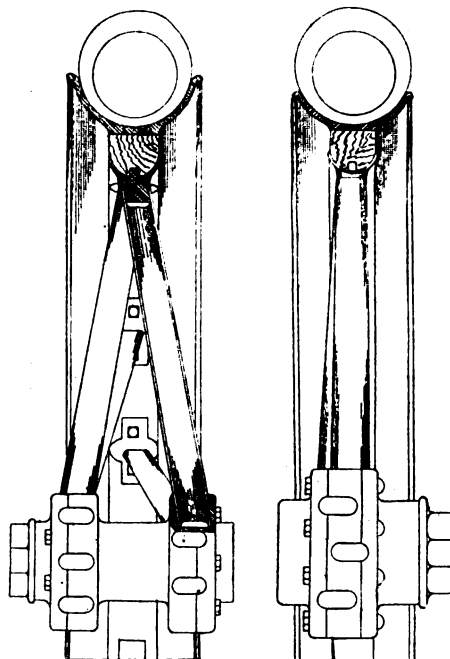
THE Semmering hill-climb organised by the Austrian Automobile Club will be held to-morrow (Sunday). In the motor-cycle class there are fourteen entries, while among the racing cars are four 60-h.p. Mercedes, three De Dietrichs, a Lohner-Porsche and a Regent.

THE Automobile Club de Spa held its first race meeting last week end. The proceedings on Saturday opened with the Mal-

champs hill climb over a distance of 5 3-5 kilometres. Rigaux on a Sarolea (Kerry), won the light motor-cycle class in 4 min. 30 1-5 sec. Pilette on a De Dion tricycle was first in the heavy motor-cycle category (time 5 min. 37 4-5 sec). The light car class was carried off by Pirmez on a Delahaye in 4 min. 51 1-5 sec. The mile trials, standing start, on the Malchamps Hill were next run off. Rigaux (Sarolea) was again successful in his class (time, 1 min. 33 3-5 sec.); Barbaroux on his Benz Parsifal car was first in the light car class and in the general classification (1 min. 20 sec.). The Coupe de Spa thus goes to Barbaroux, who has, however, to win it two years in succession ere it becomes his own property. The event on Sunday was a race for touring vehicles from Spa to Sart and Niveze, and back to Spa. Lambert on a Panhard won the four-seated car category, Madame Lehman on a Metallurgique the five-seated vehicle class, and Bidault on a Dechamps the two-seated car section. Monday was devoted to a driving competition, the meeting being brought to a close by a banquet in the evening.

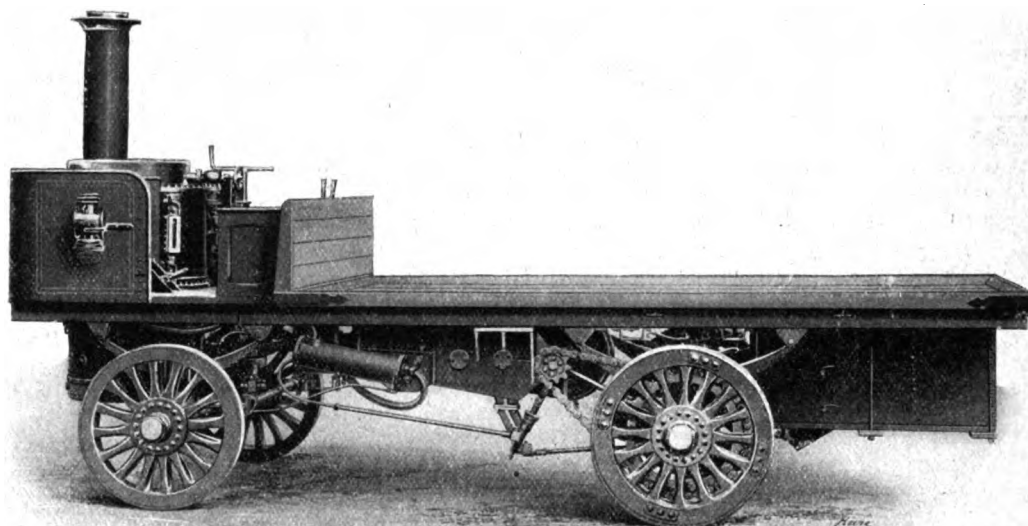
THE MERCER TUBULAR WHEEL.

WHILE artillery wood wheels are now almost exclusively used on motor-cars in this country, a number of American manufacturers give their preference to tubular steel wheels, one type of which—the Mercer—is illustrated herewith. The Mercer tubular spoke wheels manufactured by Messrs. F. J. Mercer and Co., of Hyde Park, Mass., are made in sizes from 28 to 36 inches in diameter, and can be fitted with either pneumatic or solid tyres. The spokes are of steel tubing oval in cross section tapering slightly toward the hub. They are fitted into a peculiar shaped pocket in the hub and are securely fastened to the rim by a special forging



braced to the spokes. This is fastened to the rim in such a manner that each spoke is held in an independent pocket of which the flanges form a part. To remove a broken spoke it is only necessary to detach the flanges at the rim end and pull the spoke out of the hub by means of a special jack furnished with the wheel. In replacing a spoke the jack is used to force the spoke into the hub pocket. The whole operation of removing and replacing a spoke is said to require not more than ten minutes. In assembling the wheels they are held firmly in a jig and set up upon their own bearings. The spokes, being of steel, are claimed to be unaffected by climatic changes, so there is no liability of the wheel getting out of truth.

The "Wantage" Steam Wagon.



STILL another addition to the list of steam wagon builders in this country has to be made, the Wantage Engineering Company, Limited, of Wantage, Berks, having lately taken up the construction of this type of automobile. The vehicle, of which we give an illustration herewith, is intended to carry a load of 4 tons. The underframe is of channel steel, stayed with cross channels and angle plates, and riveted up throughout. The boiler can either be of the water-tube or the fire-tube type, having eighty square feet of heating surface, fitted with steel tubes, and built for a working pressure of 200 pounds per square inch. The safety valve provided is set at 225 pounds. The boiler is constructed so that the outside shell can be taken off for cleaning purposes. Coke is used as fuel, and the fire is regulated by a hinged ash-pan, and also by a lid covering the central firing shoot. A "Klinger" water gauge is fitted; as will be seen, the boiler is placed in front of the driver's seat, and the coke bunkers are on either side of the same, the latter holding sufficient fuel for an ordinary day's work. An automatic pump, fitted with double check valves to both suction and delivery, is driven by the eccentric from the compensating gear-shaft. There is also a small steam pump for supplying the boiler when the engine is standing. The latter is of the horizontal compound reversing type, having cylinders $3\frac{1}{2}$ in. and $6\frac{1}{4}$ in. by 6 in. stroke, and running at 500 revolutions per minute. The engine is entirely cased in and dust-proof, runs in oil, and requires little attention. The transmission gear is adapted to give two changes of speed. The gear-wheels are bolted to turned-up flanges, thus dispensing with all keys. The drive from the end of the compensating gear shaft is taken by roller chains to the felloes of the wheel, instead of to the spokes, thus relieving the latter of strain. The compensating gear shaft is of special construction, being hollow from end to end; a bolt is put through this shaft which takes the end thrust caused by the bevel wheels off the bearings, thus considerably reducing the friction. The compensating gear can be locked by an internal clutch arrangement by pulling a lever under the frame of the vehicle. A point worthy of note is that not only are all parts made to gauge and template on the interchangeable system, but all the castings are numbered, making it easy to obtain replacements. The water tank has a capacity of 130 gallons. The long platform is entirely independent of the working parts and the main framework of the vehicle; it measures

12 ft. 6 in. by 6 ft. 5 in., giving 75 sq. ft. of available space for goods. The road-wheels are of the artillery type, with oak spokes and ash felloes, steel naves bushed with hard gun-metal and weldless steel tyres. The front wheels are 2 ft. 10 in. dia. by 4 in. tyre width, and the rear wheels 3 ft. by 6 in. One of the "Wantage" wagon has been on the road for six months, and as a result of the experience thus gained the makers state that the vehicle is capable of doing a journey of fifty miles in a day of twelve hours, loaded with four tons, on fairly good roads, and it can also carry a full load and haul a trailer loaded with two tons with ease.

MESSRS. LAFAYETTE, LTD., have prepared a set of thirteen pictures fully illustrating the Gordon Bennett race.

THE See Motor-car Supply Company have opened a garage, with accommodation for thirty cars, at 151, Oxford Street, W. Petrol, oil, and motor accessories are kept in stock, and facilities are available for washing and repairing cars.

MESSRS. FRISWELL, LIMITED, inform us they have been appointed sole representatives of Les Fils de Peugeot Freres, of Valentigney, manufacturers of all sizes of automobile chains, and that they intend to hold a large stock of these chains in future at No. 1, Albany Street, N.W.

THE STAR ENGINEERING COMPANY are early in the field with particulars of their 1904 models. These will consist of a single-cylinder 6-h.p. two-seated car (not yet on the market), a two-cylinder 9-h.p. vehicle, and three four-cylinder cars of respectively 12-h.p., 18-h.p., and 24-h.p.

AS we recently announced, the business hitherto carried on by Mr. J. E. Hutton has been converted into a limited liability company. An extensive establishment has been opened at 81 and 83, Shaftesbury Avenue, W., the building being a fireproof structure of five storeys, having a handsome facade of stone, ornamented with glazed green bricks. The basement is provided with an inspection pit, washing space for two cars, steam heating apparatus, petrol store for sixty gallons of petrol, etc., and is connected with the ground and first floors by means of an electric lift, sufficiently large to accommodate the biggest car. Vehicles can be driven directly on to the lift and taken down to the basement to be washed.

HERE AND THERE.

THE Queen of Italy has lately acquired a Krieger electrical brougham.

A PROPOSAL is afoot to link up Kingsclere and Newbury by motor-car.

A MOTOR-BUS is now plying for hire at Shipston-on-Stour, Worcestershire.

THE Lincolnshire Automobile Club will hold a run to Sutton-on-Sea to-day (Saturday).

CASES in which motorists have been fined for driving without lights have been reported from Slough, Selby, and Chertsey.

TO-DAY (Saturday) the Western Section of the Scottish Automobile Club will hold a run to Aberfoyle.

THE Russian postal authorities are reported to be negotiating for the supply of a number of motor-cars to be used in the postal service.

By a majority of two votes, the main roads and bridges committee of the Carmarthenshire County Council have decided not to provide a motor-car for their county surveyor.

THE Government of West Australia is reported to be about to inaugurate some experiments with motor-vehicles for the carriage of produce in agricultural districts not touched by the railways.

MOTORISTS in North-East London will be glad to learn that arrangements have been made at the Borough of Hackney electric light station at Millfields Road, Clapton, for re-charging ignition accumulators.

MESSRS. S. BOWLEY AND SON have made arrangements with Verinder's Stores, Anerley, S.E., to have a supply of their motor spirit in the Crystal Palace grounds for those taking part in the reliability trials.

THE Thompson Motor-Car Works, of Armadale, Melbourne, Victoria, will be glad to receive price lists from all English makers of petrol, steam, and electric motor vehicles, both for pleasure and other purposes.

MESSRS. DALE AND CO. have asked the Marlborough Town Council for a license to store about 550 gallons of petrol during the progress of the military manoeuvres. It was stated that every care would be taken to ensure the safety of the petrol, and the license was granted.

MR. PERCY OWEN, who was one of the American team in the Gordon Bennett race, is credited with the statement that he will do no more racing, the Winton Company having decided that in future its officials and agents shall abstain from racing and attend strictly to business.

THE Association de la Presse Technique, of Brussels, have published the August issue of the "Index of the Technical Press." In this useful pamphlet are carefully indexed all the principal articles appearing in the recent issues of the technical magazines and papers, including those in the *Motor-Car Journal*.

ON the occasion of the Automobile Club's Trials, from September 14th to 26th inclusive, motor-cars not taking part in the trials will be admitted at the Rockhills entrance of the Crystal Palace on payment of half-a-crown per car; this will include free garage accommodation inside the grounds during the morning only.

IN view of the requirements of the new Motor-Car Act, which emphasize the importance of competent and judicious driving and observance of the law, and indirectly the amenities of the road, Messrs. Ewart-Hall, Limited, the agents for the C.G.V. cars, have decided to establish a department for giving lessons in driving and technical instruction to intending owners of cars and to applicants for employment as drivers. Certificates according to merit will be issued to the latter, and a register of drivers will be kept.

AN ingenious nail detector for use on motor-cars, to detect nails and avoid punctures, has just been introduced by Mr. H. N. Hickley, electrical engineer, Taunton. As will be seen from the illustrations given herewith, the device consists of a main casting A, which is screwed to a bracket fixed to the frame of the car, the detector being placed on the horizontal centre line passing through the wheels. Inside this casting is an electrically insulated terminal, shown in dotted lines, to which an insulated wire is taken from the cells or magneto. D is a thimble fitting into the main casting, containing a spiral spring, acting on the plunger P, which is suspended, or detained by the wire W, fastened to

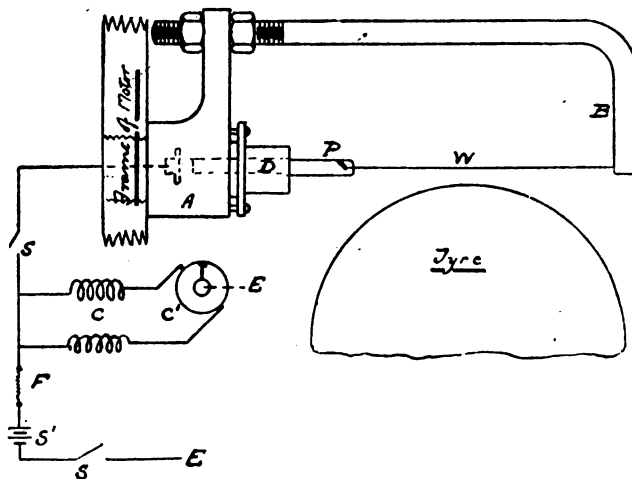


Fig. 1.—Showing Method of Wiring.

the adjustable bracket B. S S are two switches, one for disconnecting the nail detector if desired, the other the ordinary switch in the electrical circuit of any car. E E represents the return circuit through the frame of the car; some vehicles are wired in such a way as to avoid this earth return, but this does not prevent the use of the detector. C and C' are the induction coils, one or more, and the commutator found on most cars. S' are the storage cells or magneto. F is an ordinary electrical fuse of about five amp. capacity. The

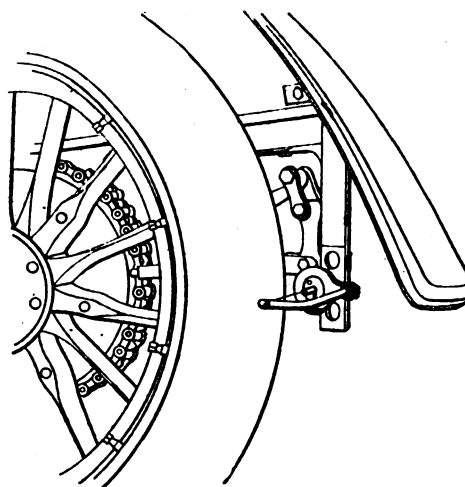
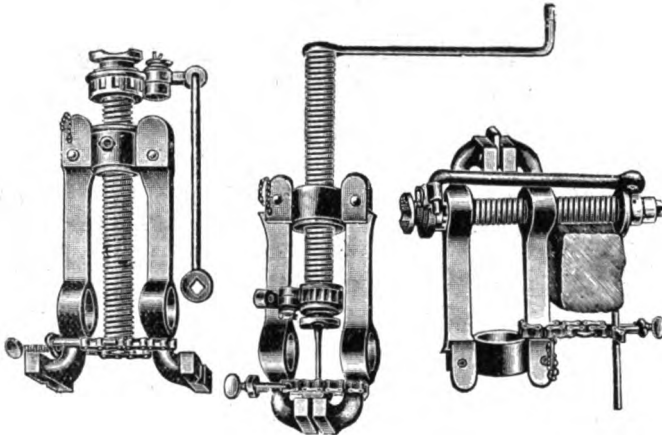


Fig. 2.—Showing Method of Attachment.

action of the nail detector is as follows:—On a nail being picked up by the tyre, the wire W, which is held half-an-inch off the wheel, is broken, releasing the plunger P, which, by the action of the spring, comes in contact with the terminal holding the insulated wire from the cells; plunger P being in contact with the casting and frame of the vehicle, earths the insulated wire, thus short-circuiting the cells; fuse F is immediately blown, and the car brought to a standstill owing to the current being cut off. The same action may also be arranged to give other warning, such as ringing an electric bell. The work of replacing the broken wire and fuse can be done in a few minutes. Mr. Hick-

ley informs us that experience has shown that a 25 gauge brass wire, while being broken by a nail $\frac{1}{4}$ inch in the tyre, has not been broken by mud or dust after continual use on a car, fitted with Collier tyres, weighing about 15 cwt. and speeded to about thirty-five miles an hour. There being nothing to wear out, the detector is practically everlasting; it can be fitted to any car, and to the front wheels as well as the rear; it is practically weather-proof, and will save a puncture in any heavy tyre, as the use of the detector has shown that nails do not get through the tyres until the car has run a considerable distance after they have been picked up.

A USEFUL roadside combination tool has recently been introduced by Messrs. W. Glover and Sons, Ltd., Warwick. It consists essentially of a yoke casting, to which are hinged two long jaws, and a large screw bored hollow to receive a central spindle with a ball-thrust bearing in the screw. In its ordinary form, it constitutes a lifting jack capable of raising two tons, but by turning up the feet and putting the screw at right angles to its



Arranged as a Jack.

Arranged as Drill.

Arranged as Vice.

former position, it becomes a hand vice, which can be clamped to a gate or any other convenient object by the roadside. Then by another small manipulation it can be used as a hand vice and drill for drilling holes up to half inch in diameter. A considerable range of emergency work appears to be provided for by this clever contrivance, which takes up no more room than an ordinary jack.

In connection with the Reliability Trials of the A.C.G.B.I. an inaugural luncheon will be held at the Crystal Palace on Thursday next, the 17th inst. No seats can be reserved after Monday next, and all orders for tickets (5s. each) should be sent to the Hon. Press Secretary at the Club.

ON Friday of last week we went for a trial spin on a new petrol car of American design which is being introduced into this country by the Challenge Engineering Company. The feature of the vehicle is that the power is supplied by a double-cylinder engine of the two-cycle type, in which inlet and exhaust valves of the usual form are entirely dispensed with. We hope to refer to the new car at greater length in a subsequent issue.

A USEFUL tool designed to facilitate the removal and replacing of exhaust valve springs of petrol engines on motor-cars has recently been put on the market by Mr. A. W. Berry, of Colchester. It comprises a lever used in connection with a piece of cycle chain with hook attached to one end. The hook is connected to any convenient stud, bolt, or projection on the engine above the exhaust valve spring, and the lever is passed through the link of chain which comes $\frac{1}{2}$ in. or 1 in. above the plane of the spring cup, which forms the fulcrum for the lever. By pressing the latter with one hand the spring is easily compressed and the cotter extracted by the other hand. The same method is applied to replace the spring and cotter. A screw-driver or pin wrench is formed on one end of the lever, which can be used for grinding in valves, or as a pin wrench for box spanners etc.

OUR French contemporary, *La Locomotion*, has changed its title to *La Vie Automobile*.

BOTH the candidates for the Wisbech Division of Cambridge-shire own motor-cars.

MR. BALFOUR motored to North Berwick from Whittinghame on Monday afternoon.

THE Mercedes is the name of an English company with an address in Victoria Street, Westminster.

THE Duke and Duchess of Devonshire have left Bolton Abbey for a motor-car tour in Scotland.

MESSRS. J. AND J. GRAHAM, Castle Street, Sligo, are stocking petrol, and supplying accessories for motorists.

LORD PLUNKETT, the Secretary to the Lord Lieutenant of Ireland, has just received delivery of a 10-h.p. car of Lanchester make.

THE Folkestone Motors, Limited, are arranging occasional excursions by motor vehicles to Dover and other places in their locality.

IT is reported that the Adler Fahrrad Gesellschaft, of Frankfort-am-Main, is building a 90-h.p. car for the 1904 Gordon Bennett race.

THE Ryper Motor and Engineering Company, Limited, has been registered with a capital of £5,000, and with offices at 183, Spring Hill, Birmingham.

ARRANGEMENTS have been made with a well-known firm of engineers at Slough for the manufacture of four hundred Mors chassis to be delivered during 1904.

WE are officially informed that the trials in connection with the competition for tractors for military purposes will commence on the 22nd prox., at Aldershot.

MR. W. G. PURSER, who has done so much to improve the roads in West Sussex, has just been appointed engineer for roads and bridges to the Lincolnshire County Council.

FROM the Automobile Club of America we have received a copy of the report and awards of the contest committee with regard to the Commercial Vehicle Contest held in May last. The book is well got up and contains illustrated descriptions of the vehicles which took part in the trials.

WE have often mentioned that among the most enthusiastic of motorists are to be found those who have long maintained a large stud of horses. We are reminded of this by seeing in the "Road" a full page illustration showing that pioneer of the automobile movement, Sir David Salomons, driving his four-in-hand.

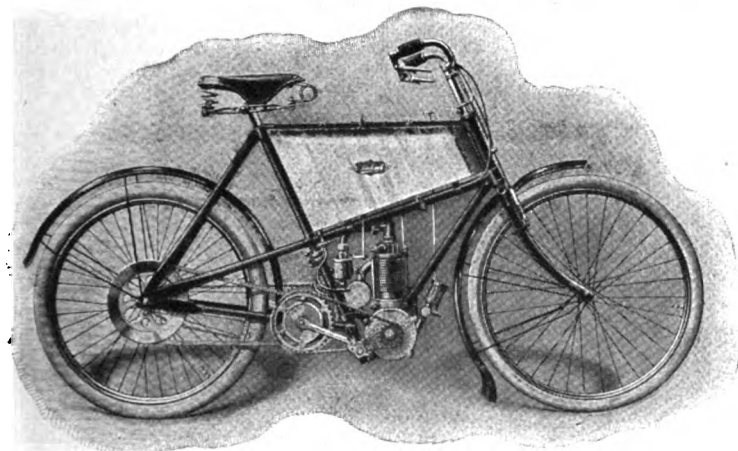
IN Princes Road, near the Holland Park Station on the Central London Railway, the Holland Park Motor Company has a showroom for motor-cars, and are making a feature of the 8 and the 12-h.p. Prosper Lambert cars. They have some good agencies, and have lately added a motorists' tailoring department to their business.

MESSRS. E. T. FETCH and M. C. Krarup have just succeeded in making the journey from San Francisco to New York in a 12-h.p. single-cylinder Packard petrol car. The journey occupied no less than 61 days, and the experiences of the two hardy motorists would fill many pages of the *Journal* in the telling. A remarkable feature of the long ride was that the car arrived in New York with one of the original Diamond tyres that were put on at the start.

MR. WARD, representing the Great Southern and Western Railway Co. of Ireland, recently visited Glin with reference to a suggested motor-car service from Foynes to Newtownsandes via Glin and Tarbert. He said that his company were disposed to institute a motor goods service in the district provided they were assured of the support of the business people, and they were prepared to put it into immediate operation, a motor-car being actually ready for the purpose.

MOTOR-CYCLING NEWS.

HEREWITH we give an illustration of the motor-bicycle recently introduced by the Raleigh Cycle Company, Limited, of Nottingham. By an ingenious modification of the cross frame a 2-h.p. motor is placed vertically in front of the bracket, to which it is bolted in four places. The motor is entirely controlled from the handle-bar, the operating mechanism being very simple: an ordinary hook lever on the left breaks the electrical contact and raises the exhaust valve; another hook lever on the right actuates the front rim brake. The two handles revolve, the left opening and shutting the throttle valve, and the right advancing or retarding the spark. A quadrant is fitted on top of the tank for setting the air supply to the carburettor: the correct position of this once found needs practically no alteration, as the hot jacket of the carburettor effectually does away with the variation usually caused by the state of the atmosphere. A plunger rod is fitted to the front of the tank on the left hand side, for lubricating the engine. On pushing this rod down a charge of oil is delivered to the engine; when pulled up the hollow cock receives a new charge from the glass lubricator, which is not delivered to the engine unless the plunger rod is pushed down again. The method of transmission is on somewhat novel lines. A chain connects the engine with a countershaft on the bottom

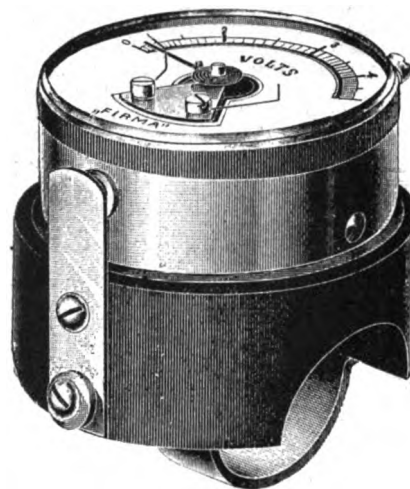


racket. On the inner side of the large chain wheel on the bracket spindle is a second chain wheel, and from this the drive is carried by a second chain to a large chain wheel attached to the rear wheel instead of by belt, as shown in the illustration, giving a very efficient drive. On the left-hand side is the ordinary chain and pedal drive for starting purposes. The tank holds one and a half gallons of petrol, sufficient for about 150 miles, and contains the accumulator and coil, also a spare lubricating oil tin.

FORTY-THREE entries have so far been received for the "Criterium du Quart de Litre" trial, which the "Auto" will hold on the Parc des Princes track in Paris from the 14th to the 20th inst.

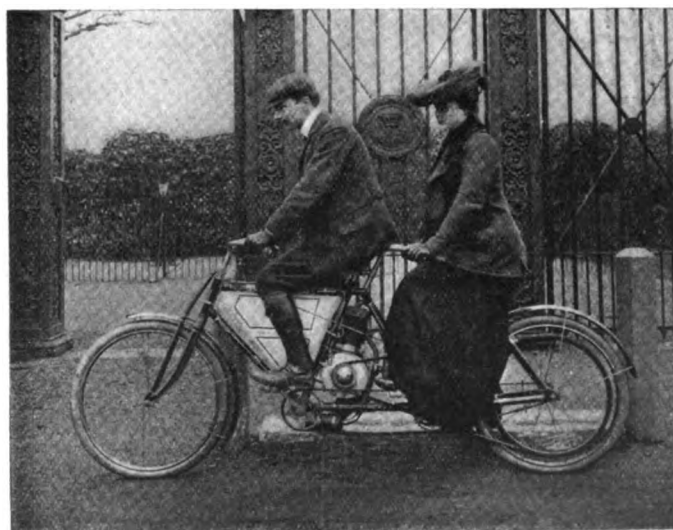
THE Lincoln Wheelers' Sports, on Wednesday of last week, included a two miles motor-cycle handicap for the "Lincolnshire Motor-Cycle Club" Challenge Cup, held by H. W. Stones. The first heat resulted: 1, H. E. Wilson, Lincoln, 500 yards; 2, J. T. White, Scunthorpe, 350. Stones started badly, and retired after a few laps. Time, 4 minutes 18 1/5 seconds. Second Round: 1, A. Hornsby, Scunthorpe, 400; 2, B. C. Holmes, Dowby, 200; J. Evans, Lincoln, fell, and C. Wallis, Lincoln, had his belt off. A good race. Time, 4 minutes 37 seconds. Final: 1, Wilson; 2, Hornsby; 3, B. C. Holmes. Wilson, who rode a Quadrant machine, had broken his exhaust valve just before five o'clock, and a new one was turned for him out of the solid steel and ground in within the hour, and he went to the track and won easily. Hornsby and Holmes both rode well. Time 4 minutes 10 seconds.

A BERLIN firm has lately brought out a voltmeter specially designed for motor-cyclists' use. As will be seen from the accompanying illustration, the instrument is arranged to be fixed on



the handle bar or to the frame of the machine; it is permanently connected up to the accumulator, so that by simply pressing the spring and completing the circuit the rider can ascertain the condition of his battery at any time without having to dismount.

TO-DAY (Saturday) two events are to be run off in the Godstone district by the Motor-Cycling Club. The first is a fifty miles "non-stop" trial for motor-bicycles. The distance is to be ridden at a regulated pace in the presence of a riding committee of inspection, the pace to be such that the distance shall be completed in not less than three hours, nor more than four hours and a quarter. The second contest is a hundred miles "Bicycle and Passenger" trial. The idea of the trial is that it shall be for tandem motor-bicycles, or motor-bicycles carrying two passengers by means of a separate attachment, such as a fore-carriage, sidecar, or trailer. The distance to be traversed is to be one hundred miles, to be ridden in two sections of fifty miles each, an interval of one hour being arranged for at the end of the first fifty miles. The passenger must be a lady, and the total aggregate weight of the driver and his passenger must not be less than 18 stone (252 lbs.). No adjustments will be allowed during the run, but



The Ormonde Motor Tandem Bicycle.

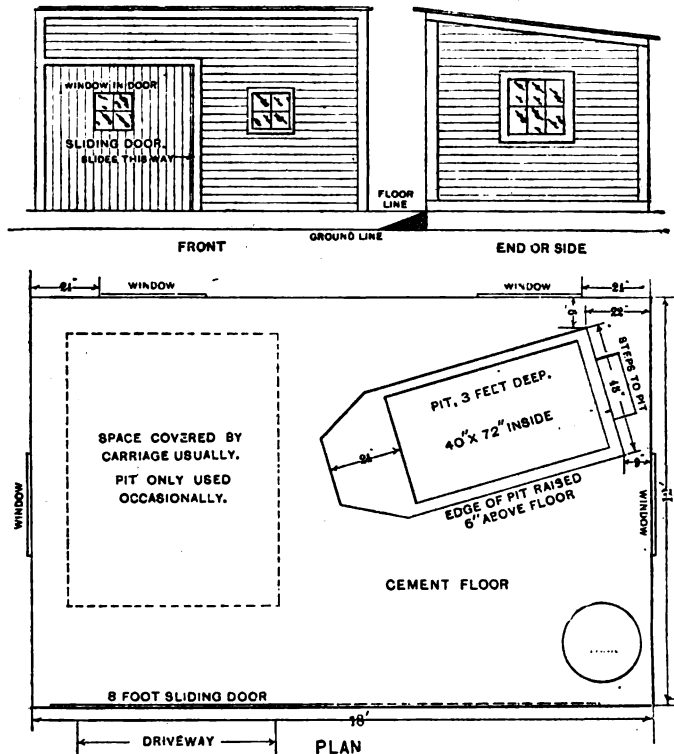
the tanks may be refilled with petrol during the official interval at the end of the first fifty miles, providing the petrol has been carried by the competitor during the run. Competitors will be started at 11 o'clock in small batches, according to the number of entrants.

CORRESPONDENCE.

PRIVATE MOTOR-CAR STABLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read the article on this subject in your last issue with interest, and have pleasure in sending drawings of the stable I have erected. The space at disposal measured about 12 ft. by 18 ft. The plan view shows the general arrangement, and it will be noted that the door is on the side, and slides to the right. The windows in the door and in the stable are arranged so as to come together when the door is open, in order to admit light in either position. The dotted lines show where the car stands generally. I have allowed 6 ft. by 9 ft., room enough for a



large car, and also space to get around it to clean, oil, and repair. The floor is made of cement, and raised about a foot. The pit is on an angle in the corner, with steps down from the back end. It is 40 in. by 72 in. inside, has raised sides to prevent running the wheels in the pit, and pointed front end to aid in getting the car in position. The idea of the angle is that the carriage can be backed on from the door, and can be run straight out without trouble. The petrol tank is in the corner, as shown. Having a separate pit gives one the opportunity of housing a friend's car when he comes to spend the night.—Yours truly,

WINDLESHAM.

CONSISTENCY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I regret to see that a member of the committee of the A.C.G.B.I. has been fined for driving above the legal speed. What is the use of our spokesmen in Parliament and our advocates in the Press extolling our virtues if the official leaders of the movement are so unwary as to become victims to police watchfulness? Really people ought to be more careful and recognise the necessity of respecting public opinion—especially in view of the power about to be exercised by the Local Government Board. Only the other day I saw a criticism in a morning contemporary of a motoring editor who deplored the practice of high speeds, while in the same issue of his journal was an account of a run in which his representative greatly exceeded the legal limit. Such inconsistency is not conducive to good feeling on the part of the public.—Yours truly,

T. C. H.

COST OF REPLACEMENT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have had a little 5-h.p. car for some time past, out of which I have derived no inconsiderable amount of pleasure. The vehicle is undoubtedly well constructed and is one which, up to a week ago, I should have had no hesitation in recommending to my friends. The reason of this sudden change is this: All cars at times need certain parts replaced, due to wear and other causes, and I have discovered that those for my machine can only be obtained at what I consider most exorbitant charges. For instance, I received an invoice for over a sovereign for a

little pinion which at the outside could not have cost more than 3s. 6d., while for other parts I have been asked prices equally excessive. I have heard it said that in some cases it is not the profit out of the sale of the car that the agents rely upon but upon the subsequent repairs. In the case of my car few repairs have been necessary, consequently it would appear that when it is necessary to replace certain parts one has to pay a price which includes a margin to make up the missing repair bill. This system does not appear to be one which is likely to cause motorists to recommend their particular type of car to their friends, and so be conducive to business.—Yours truly,

SPARK GAP.

MOTORING IN BELGIUM.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—There is no doubt that the regulation issued by the Burgomaster of Brussels limiting the speed of motor-cars to five kilometres per hour in certain parts of the city is having a detrimental effect on the movement. During the course of a recent visit to the Belgian capital I was surprised at the relatively small number of cars to be seen and the antiquity of those in use, consisting largely of early Panhards and Peugeots. Whether the new regulations have frightened motorists away or not, the fact remains that during three days I only saw two modern-type automobiles in Brussels. On the other hand, motor-cycles are to be seen buzzing along on all the principal thoroughfares. By the way, it may interest you to know that the local authorities at Ostend have gone even a step further than Brussels by closing certain thoroughfares entirely to motor-cars and motor-cycles.—Yours truly,

C. G. W.

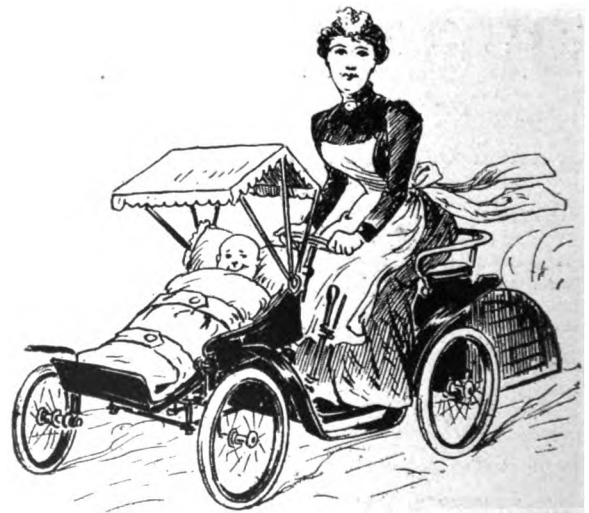
LOOK TO THE VALVES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have recently had an experience with a Baby Peugeot which, I think, will probably be of service to some of your readers, and may save much trouble and expense. The trouble took the form of a terrific grating and pounding noise which seemed to proceed from the gear box or differential. The vibration became unbearable. Hitherto the car had travelled with unusual smoothness. I engaged a good mechanic from one of the best motor works in the Midlands, and after careful inspection he agreed with me that the trouble was in the gear-box bearings, so this was accordingly taken to pieces, only to find that everything was in perfect order. When replaced the car was again tried, but the trouble was still there. My man was therefore now convinced that the axle bearings were at fault. Again this part of the machine received attention (all the differential being taken apart); this also proved to be in perfect condition. Could it be the clutch? Well, this was taken out and found all right. We gave it up, and I had made up my mind to take the car to a first-class garage, when one day, more from fad than anything else, I put in a spare inlet valve and spring. When the car was started I was delighted and astonished to find the trouble gone, and she ran like a clock. Cause of the trouble a weak inlet spring. I should very much like to know how a too weak inlet could cause all this. Can any of your readers tell me?—Yours truly,

A REGULAR SUBSCRIBER.

M. P. writes:—What is the best make of speed indicator for a 10-h.p. motor? I want one with a dial which will show me, as driver, what speed I am travelling at.



The Up-to-Date Nursemaid.
(Das Schnauferl, Munich.)

ALLEGED FRAUD.

AT Bow Street (London) Police Court, Charles Francois, Sinclair Road, Kensington, was charged before Mr. Marsham with fraud. Mr. Harry Wilson prosecuted; Mr. Searle defended. Mr. Wilson stated that on the previous Friday the prisoner went to Mr. O. C. Selbach, of Great Russell Street, W.C., and said he wished to purchase a motor-car. He looked at some, and after a trial purchased a Regal car, the price of which was £180. He presented a card bearing the words, "His Grace the Duke Charles J. Francois de Nevers," and said that his father, who was in Paris, was Prince Oscar de Nevers. He handed Mr. Selbach a cheque for £180 on the Newry branch of the Northern Banking Company (Limited). Mr. Wilson added that after calling one or two witnesses he would ask for a remand. The vehicle had not been recovered, but the police knew where it was. Mr. Selbach, the prosecutor, gave evidence in support of this statement. The prisoner was remanded. At the adjourned hearing the prisoner was again remanded, but the magistrate, Mr. Marsham said the prosecution had better consider the advisability of going on with the case after the statement of a witness that he was told not to leave the car until prisoner's cheque had been cleared.

A DRIVER'S CLAIM.

IN the City of London Court, Judge Rentoul, K.C., has decided a case in which Mr. Hicklin, a motor-car driver, claimed against Mr. Tynney Smith, of 17, Old Broad Street, E.C., for wages and money due in default of notice. Mr. Smith said he engaged the plaintiff as a thoroughly competent motor-car driver, but, as a matter of fact, he was reckless, and knew nothing about putting things right—a most important part of motoring. The plaintiff alleged that defendant wanted

bridge members, who is a magistrate, thought discretion the better part of valour and returned home. A start was at length made after Mr. Hall had cleared the way on his Darracq. After the cars had competed, tea was taken at the Ball Hotel, Wrotham, and following tea, members repaired to Trotterscliffe Hill, but only three cared to try their cars on the very stiff gradient. An Excelsior and a Jehu motor-bicycle, and a De Dion tricycle also ascended Vigo Hill successfully.

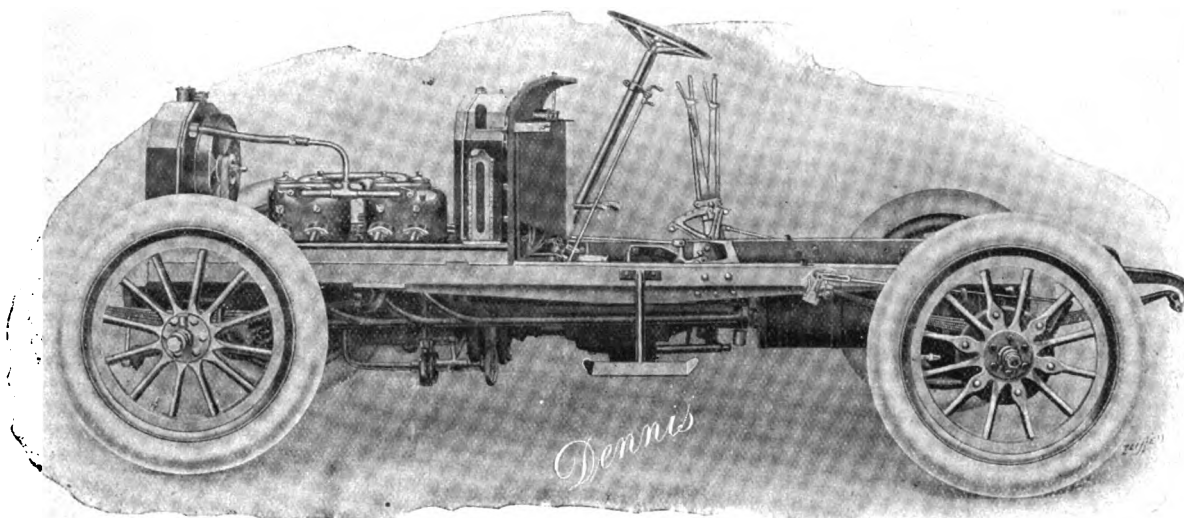
The length of the hill was half a mile, the steepest gradient being 1 in 9. The official results were as follows:—

	H.P. of Car.	Weight in Cwt.	No. of Pass.	Min.	Sec.	Speed (Miles per Hour).
Hall, H. O.	24 (Darracq)	19	4	1	11	25.3
Lucas, R.	12 (Lucas)	12	2	1	40	18.0
Edwards, W. T.	14 (Renault)	16	4	1	53	15.9
Packham, E.	5 (Baby Peugeot)	7	2	2	18	13.6
Cornell, A.	5	7	2	2	38	11.4
Hearne, A. B.	9½ (Clement)	12	4	2	56	10.2
Morgan, C. J.	7 (New Orleans)	11	4	3	10	9.4
Spencer, S. L.	10 (Gladiator)	14	4	3	13	9.3
Morgan, C. J.	12 (Brooke)	19	4	3	16	9.2
Bull, F. C.	8 (Peugeot)	16	4	3	47	7.9
*Hallows, F. S.	12 (Belsize)	17	4	4	0	7.5

* Two stops through missing gear.

Up Trotterscliffe Hill, 1,700 feet long, with the steepest gradient 1 in 5.2, the following results were recorded:—

	H.P. of Car.	Pass.	Time Min. Sec.	Speed (Miles per Hour).
R. Lucas	12 (Lucas) ...	2	1 42	11.4
H. O. Hall	24 (Darracq) ...	4	1 50	10.6
F. S. Hallows	12 (Belsize) ...	5	3 10	7.2



Chassis of Dennis 16-20-h.p. car. (See last issue.)

a terrific speed. He took him to Guildford from London in an hour and a quarter, and was timed forty miles an hour coming from Clacton-on-Sea. His Honour said there might be truth in all that had been said, and there might not. A compromise of £2 to be paid by defendant would, he thought, settle the matter.

CLUB NEWS.

YORKSHIRE.

DESPITE the wet morning a fair number of members of the Yorkshire Club kept their promise to visit Mr. A. F. Burton at Turnham Hall, near Selby, on Saturday last, and were rewarded with a very pleasant afternoon, the weather turning out fine. The roads, except where sheltered by the trees, dried quickly. Turnham Hall is a pleasantly situated old house on the bank of the river about two miles below Selby, and Mr. Burton kindly showed the party round his gardens and hothouses. A start was made for home about 6 p.m. The police on the road were not in any way officious, and the general opinion in this part of the county is that if drivers will exercise care at the cross roads and in towns and villages, the police do not make themselves obnoxious. There were present Mr. and Mrs. W. Jackson, Mr. Milnes, Mr. Atkinson and Miss Atkinson, Mr. and Mrs. Rowland Winn, Mr. C. Parker, Mr. Sykes, and Messrs. A. W. Dougill and E. Dougill.

KENT.

Excellent weather prevailed at the hill-climbing trial of the Kentish Automobile Club on the 28th ult. The surface of the road up Vigo Hill, between Wrotham and Gravesend, was in good condition, but a strong force of police occasioned great perturbation, and one of the Ton-

MIDLAND.

To-day (Saturday) a hill-climbing handicap is being held at Sun-rising Hill, Kineton, Warwickshire, by the Midland Automobile Club. The weighing-in will take place at Stratford-on-Avon, commencing at 11 a.m., and the first car will ascend the hill at 12 noon. A dinner will be held after the competition at the Shakespeare Hotel, Stratford-on-Avon.

ON THE WRONG SIDE.

GEORGE KIDDLE, of Dersingham, was summoned at the Docking (Norfolk) Petty Sessions for driving a cart on the wrong side of the highway at Heacham. The Rev. F. F. Taylor said that on the 19th August he was driving a motor-car, and when by the bend in the road opposite Heacham Hall he met defendant driving a horse and cart on the wrong side of the road. In attempting to avoid a collision he ran his motor-car up the bank by the side of the road, and it turned over. The three persons who were in the car were thrown out, but not injured. His car was damaged. Defendant drove off when the car was upset. Mr. Wilkin, for the defence, said defendant was the landlord of the White Horse Inn at Dersingham, and had recently recovered from a severe illness. On the day in question, he overtook a brewer's hooded dray drawn by three horses, and while passing it at a bend in the road he saw a motor-car in front of him, and the accident happened immediately. Defendant gave evidence in support of Mr. Wilkin's statement, and in cross-examination said he was upset at the time, and gave a wrong name and address.—The case was dismissed.

FURIOUS DRIVING CASES.

MOTOR-CARS.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Smethwick	F. Merrick, Smethwick	20	Dismissed.
Marlborough St., London	A. Smith, New Kent Road, S.E.	—	40s., etc.
Margate	J. Jolliffe, Cliftonville Hotel	—	Dismissed.
Lincoln	Miss Eleanor Neville	30	£1, etc.
"	C. Neville, Wellingore Hall	—	£1, etc.
"	R. Diggle, Lincoln	25	£1.
Swainesthorpe (Norfolk) ..	A. G. Beer, Newmarket	34	15s.
Haywards	H. Cocks	—	15s.
Heath	E. Caberpine, Gt. Titchfield St., W.	32	£2, etc.
"	C. Hoffer, Kensington	30	£2, etc.
"	F. Atherley, London, W.	28	£2, etc.
Shrewsbury ..	E. C. Smith (driver to Lord Berwick)	20	£2, etc.
Grantham ...	Lady Hartopp, York	20	£5, etc.
Warwick	C. Hatherley, Coventry	25	£2, etc.
Worthing	G. Lereculey	—	£5, etc.
"	W. Scott	—	£1, etc.
St. Neots ...	C. T. Long, Berwick, Sussex	—	£5.
"	A. Mitchell, Edmonton	—	£5.
"	F. Barnes, Northumberland	—	£5.
"	W. R. Fenn, Acton	—	£5.
"	E. Hanlon, Long Acre	—	£5.
"	G. Shaw, Sheffield	—	£5.
Kingston	A. Gentili, Oxford Street, W.	30	Dismissed.
Bishops			
Stortford ...	L. Turner (driver to Mr. Churnside)	—	£5.
"	T. Rochford, Cheshunt	—	£5.
"	E. Turner, Winchmore Hill	—	£5.
Penrith	H. J. Moore, Stourbridge	—	£3, etc.
Rhyl	H. Buckley, Manchester	—	£10, etc.
Christchurch	W. Lucas, Fordingbridge	19	£5.
"	W. Hewson	22	£5.
"	Dr. J. H. Caldecott, London	—	Adjourned.
"	A. Montes	21	£3.
"	A. Candy, Boscombe	—	£4.
Winchester...	P. Natural, Ascot	—	£5, etc.
Southampton	H. Ashby	25	£5, etc.
Dumfries	F. Cosse (driver to the Earl of Londesborough)	30	£5.
Thetford	G. Barnes-Buxton, Icklingham	30	£1, etc.
St. Neots	Lord Abinger	21	£5.
"	H. Shaw, Albemarle St., W.	29	£7.
"	T. Constantine, Middlesbrough	25	£3.
"	F. A. Denny, Bryanston Sq., W.	25	£5.
"	R. Hatfield, Bermondsey, S.E.	27	£7.
"	B. Finter, Windsor	23	£5.
"	E. Martin, Walton-on-Thames	21	£5.
"	F. Wallace, Eaton Place, W.	21	£6.
"	A. Fletcher, Clapham	21	£5.
"	A. G. Drexall, Oxford	20	£5.
"	E. Quilter, 7, Savile Row, W.	20	£5.
"	W. S. Bowker, Whittlesea	20	£3.
-Croydon	W. Glass, High Street, Croydon	—	Dismissed.

Where no alleged speed is given it is understood to be above the legal limit.

MOTOR-CYCLES.

Walsall	J. Stevens, Wolverhampton	22	40s., etc.
"	C. W. Collins, Cannock	25	20s., etc.
Yarmouth	V. Rowe, Yarmouth	—	5s.
Whittlesey ...	H. A. Whittame	—	£5, etc.
Bishops			
Stortford ...	C. Wilson, Holloway	—	Dismissed.
Worthing ...	W. Hardwick	20	£1, etc.
"	E. Jones	—	£2 6s.
Ulverston ...	W. Walker, Ulverston	20	20s., etc.
Belfast	J. Stanfield, Belfast	14	Dismissed.
Broadstairs...	H. Fildes, Broadstairs	—	30s., etc.
Lincoln	J. Hunt, Newark	24	1s. etc.
Haywards			
Heath	R. Sinclair, Epsom	25	£1, etc.
"	F. Carmen, Brighton	—	£1, etc.
Midhurst	W. Weston, Westminster	—	10s.
"	A. Alderton, Aldershot	20	5s.
Warwick	E. Harris, Coventry	23	£1 1s.
Bowness ...	A. J. Palmer, Windermere	—	£1, etc.

AT Kingston-on-Thames, on the 4th, Alban Gentili, a French driver, of 532, Oxford Street, W., was summoned for driving a motor-car at an excessive speed on the Portsmouth road, Surbiton. Defendant had just been liberated after serving a term of three months' imprisonment for furiously driving in Hyde Park. He was engaged by a motor company, and the offence at Surbiton—driving at thirty miles an hour—was committed three days before he was charged for the Hyde Park offence. The chairman of the magistrates thought that defendant had been sufficiently punished, and discharged him with a caution.

THE Bishop of St. Asaph on Monday told the Rhyl magistrates that he was driving between St. George and St. Asaph with a pair of horses, when he met Mr. Buckley, of Rycroft Hall, near Manchester, going at the rate of nearly fifty miles an hour. He held up both hands, but the defendant made no attempt to reduce his speed. Defendant did not appear, but a limited to a police superintendent who served him with the summons at the Grand Hotel, Llandudno, that he was exceeding the limit. A fine of £10 and costs was inflicted.

WALTER HEWSON, who recently stayed as a visitor at Priory Mansions, Bournemouth, was summoned at Christchurch for alleged furious driving of a motor-car. Mr. J. Druiett, the magistrates' clerk, said the defendant had written a letter to the bench. In this the defendant said his occupation in France having compelled him to return to Paris, his usual residence, before the date on which the case was down for hearing, he was prevented from personally presenting his defence to an "over-zealous charge." As an old driver he held the different French certificates of ability. Defendant expressed his willingness to pay a nominal fine, but said if the bench intended taking a serious view of a ridiculous charge he must ask that the summons might be adjourned so that he could appear and defend himself.—Fined £5, including costs.

DR. J. H. CHALDECOTT, of London, has been summoned for a similar offence, but did not appear, and the magistrates' clerk read a letter from his solicitors in which they stated that their client had not been in Bournemouth or the neighbourhood for 20 years, and that he had never driven a motor-car and never owned one. The only explanation they could offer was that the driver of the car which was stopped by the police gave their client's name instead of his own. The clerk added that he had replied to the letter stating that the communication from the solicitors should be laid before the bench. Supt. Payne said he wrote to the defendant informing him that he should ask the bench to adjourn the case. The bench adjourned the case until Sept. 28th.

POLICE TRAPS.

THERE is a police trap at Holnicote, half-way between Minehead and Porlock.

THE trap at Iford, near Bournemouth, has been the cause of many captures of late.

THE SPEED OF MOTOR-CYCLES.

AT Aylesbury Petty Sessions, William Browning was recently charged with driving a motor-bicycle at a greater speed than twelve miles an hour at Aylesbury. Police-sergeant Shore stated that defendant covered a measured quarter of a mile in 46 1-5 seconds, which was at the rate of between nineteen and twenty miles an hour. There was a fore-carriage attached to the bicycle. The bench convicted the defendant, but only fined him 15s. including costs.

MR. CHARLES WILSON, 22, Arthur Road, Holloway, summoned at Bishops Stortford for driving a motor-cycle with a trailer attached on the same road at more than six miles an hour, swore that the policeman at the Bishops Stortford end stopped him in mistake for another person, as he was detained for an hour on the road between the two points with a breakdown. His companion in the trailer corroborated his statement, and the case was dismissed.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, SEPTEMBER 19, 1903.

[No. 237.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



WE have now entered upon the great automobile Trials of the year, and Mr. Basil H. Joy is to be congratulated on the way in which the preliminary stages have been carried through. Experience is a certain guide, and not only has he and the Committee had the advantage of previous Trials but they have, where it has seemed necessary, discarded tradition for present convenience. Much of the success of the Trials, from a popular point of view, depends on the weather, and with that in a more settled mood than has been the case these last few weeks, the success of the tests should be assured.

A Club for Surrey.

SURREY, which has been regarded as officially opposed to automobilism, has now an automobile club, with headquarters at the White Hart Hotel, Reigate. This will be known as the East Surrey Automobile Club, and Mr. David J. Barry, the Hon. Secretary and Treasurer, of High Street, Reigate, will be pleased to receive the names of gentlemen in the district interested in the movement, and likely to associate themselves with the new club. In view of the importance of rightly influencing public opinion during the next two or three years, we trust the new association will be strongly and loyally supported by Surrey motorists.

A Prize in 1931.

A LETTER has been addressed by Sir Frederick Bramwell to the President of the British Association enclosing a cheque for £50, which is to be invested in 2½ per cent. cumulative Consols and to be accumulated until 1931. The amount, about £100, which will then be standing to the credit of the account is to be paid as an honorarium to a gentleman to be selected by the Council to prepare a paper dealing with the whole question of prime movers in 1931, and especially with the then relation between steam engines and internal combustion engines.

Motor-Car Imports and Exports.

THE imports of foreign automobiles into this country continue on a very large scale, no less than 612 cars and cycles being imported last month, the value of the same being returned at £159,202. The value of the "parts thereof" is given as £37,162, so that we get a combined total for August of £196,364, as compared with £235,947 in July last, and £141,883 (representing 474 cars) in August, 1902. Some of the imports were of only a temporary character, being re-shipped to foreign destinations. Thus last month the re-shipments comprised 31 vehicles, amounting in value to £14,067. For the first eight months of the year, the net import of motor-cars, cycles, and parts stand at no less than £1,402,326 (representing roundly 4,600 vehicles), practically double those during the same period of 1902. As regards the exports of automobiles of home manu-

facture, the shipments during the past month were the largest so far recorded, amounting to 111 vehicles, of a value of £31,212. Of parts the exports attained a value of £3,859, making a combined total for August of £35,071, as compared with £33,142 in July last, and £21,577 (representing thirty-seven vehicles) in August, 1902. To the end of August 502 vehicles of British manufacture had been exported this year, these, together with the "parts," representing a sum of £201,102.

Street Traffic.

AUTOMOBILISM has proved a large factor in the proceedings of the engineering section of the British Association at Southport, and the fact that the leaders of this department of science are studying such matter of fact problems as street traffic is encouraging to all interested in the motor-car industry. For the advance of our movement will be practically contemporaneous with the improvement in the construction of roads and the better regulation of traffic by our local authorities. The speedy automobile that seeks to take its passengers quickly along the streets is now restricted to the snail-like progress of the most lumbering market wagon that, in turn, is slackened in speed by the dilatory vans that linger along the edges of the roadways in cities. Hence the importance of the paper read by Lieut.-Col. Crompton.

The Three Types.

As might have been expected, Mr. Clarkson's paper at the British Association meeting was mainly concerned with the steam propelled vehicle, in the development of which he is playing an interesting part at the present time. Latterly the steam and electrical vehicle seem to have been relegated to, an obscure position in view of the undoubted popularity of the petrol motor. But it must not be forgotten that both steam and electricity have a place in automobilism, and that inventors in every country are still doing what they know to introduce the ideal vehicle. Mr. Clarkson's paper contained many useful points, and the fact that he gave with regard to the absence of boiler explosions, although more than four thousand steam cars have been supplied to the public, should reassure those to whom the idea of "sitting on a boiler" is rather alarming.

Royal Motorists.

THE Duke of Connaught is well known as an enthusiast for motoring, and the other day Mr. W. Birkett, whose name will be familiar in Derbyshire in connection with automobilism, drove his Royal Highness from the Curragh to Torboy, a distance of thirty miles, to attend some manoeuvres. The roads were very greasy, but the party got well past Dunlavin without incident. Turning a sharp corner, a flock of sheep was met, only one of which, however, got under the car, and it was able to walk away as though quite heedless of the danger it had survived. After lunch, the return journey was made, and at Dunlavin a sideslip caused the car to run up the side of a bank. The Duke of Connaught jumped out and merrily assisted to get the vehicle on the road again. A few weeks ago, the Prince of Wales saw his vehicle pushed up one of

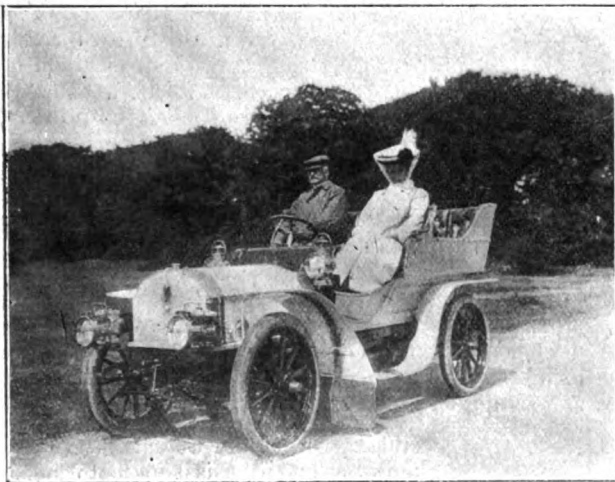
the Cornish hills, and it will appear that our Royal family are taking to motoring, as they have to other sports, with enthusiasm and thoroughness.

Tar v. Dust.

MR. T. E. WARE, surveyor to the Epsom District Council, has had about eighty yards of road in the Epsom rural district coated with coal tar and pitch to test the practical value of such a means of preventing dust. The tar was laid early in July last, it has been several times flooded with water, and there is a fair amount of traffic over it; but, to all appearance, it is still as good as when first laid down. The road is a flat one, the tar was spread as thinly as possible, and afterwards coated with road sand, and the cost worked out at about 2d. per square yard of surface treated. With an ordinary coat of tar laid on by unskilled labour, a mile of road 20 feet wide would cost less than £100, and in view of the growing use of automobiles, the idea is worth the practical consideration of local councils.

Graphite for Petrol Motor Lubrication.

MR. P. E. LONG, of the John Dixon Crucible Company, has been making some experiments with graphite for the lubrication of petrol motors. He has had three different cars, each of American construction, and in the cylinders of which he claims to have successfully used graphite as a lubricant. He states that it may be introduced into the cylinder by placing a very small quantity in the crank case—not over a teaspoonful to each quart of oil used. When the engine is standing the graphite will settle in the oil, but while in motion, enough of the graphite is stirred up to show its usefulness later on by filling all the pores of the cylinder walls. If a microscope is used on even the smoothest surface turned out by man, it will be discovered that the surfaces are full of microscopical inequalities. The pure flake graphite is said to so fill these irregularities that there is a veneer-like coating of great smoothness and endurance. Mr. Long also states that the use of graphite reduces the amount of oil necessary and that he had no trouble with the ignition.



Col. H. Stratton Bates on his 16-20-h.p. Dennis Car. The Colonel is over 70 years of age and drives the vehicle regularly.

Motor Haulage in Ireland.

MR. THOMAS JONES, of the Jones' Haulage Syndicate, is in Ireland investigating the possibilities of motor haulage there in connection with the Iveagh-Pirrie scheme. His opinion has been obtained about the establishment of a motor traction system between Dublin and Slane and Finglas. Some steps are being taken towards the introduction of a system of carriage which may finally revolutionise the methods of transit

in that country. Irishmen had been gradually falling into the belief that the Iveagh-Pirrie scheme was an economic mirage of a splendid kind, which dazzled them for a while, and was going to fade away like a dream and leave no perceptible traces behind, but it now looks as though business were about to commence.



Queen Marie Christine of Spain and the Infanta Marie Therese in a Panhard Car in Paris.

Motor-cars in Military Operations.

LIEUTENANT GENERAL MILES, who has just retired from active service in the American Army, has addressed a long communication to the U.S. War Department, in which he makes some important and sensational recommendations for the improvement of the army service. He regards the cavalry as obsolete, considering the automobile will take the place of the horse in the next war. For that reason he advises reducing the cavalry branch to the minimum and the building of military roads of strategic importance throughout the country in time of peace. He cites the Spanish-American War as an example showing that the horse is no longer of much practical value in military service and advises that a corps of five regiments be organised for thorough training and constant employment in the use of motor-cycles and automobiles, the corps to be known as a flying corps or a corps of observation. Its duties would be to open the way for the advance of an army, to obtain information, to reconnoitre the country and to repair or build roads and bridges.

Police Activity.

WE recently gave some particulars showing the amount of fines on motorists during the month of August, and a morning contemporary has totalled our weekly chronicle of fines for the past few months, thus familiarising the public with the lucrative occupation in which the police are now engaged when trapping owners of motor-cars. During the last six weeks, Hampshire, Huntingdonshire, and Berkshire have displayed an uncomfortable antipathy towards motorists. In the former county, no fewer than forty-five cases of alleged furious driving have been reported to us, Huntingdon coming second with forty-two. At Windsor, twenty cases have been heard, eighteen at Arundel and Uckfield, nine at Beaconsfield, eight at Newbury, whilst Guildford, which was formerly prominent in this connection, is very low down on the list. Evidently the boycott of Surrey by motorists has had its effect, but it is regrettable that Hampshire should have become so distinguished in the attack on automobilism. It has so frequently been urged that the police of that county are particularly tolerant, that a glance through the recent lists of furious driving cases for the purposes of this Comment has given us somewhat of a surprise.

Garden Cities.

In the development of the Garden City and allotment schemes now being advocated in various parts of the country, the motor-car should be conspicuous. The Small Holdings Association has acquired an estate in Surrey, and hopes to maintain a motor vehicle for the conveyance of produce and goods to and from the station. In this way, not only will the exorbitant cartage terms of the railway companies be saved, but land which has hitherto been somewhat of a drug in the market, owing to inaccessibility, will be given a value for market gardeners and others. This aspect of automobilism is one that should enlist the sympathy of social reformers in its progress.

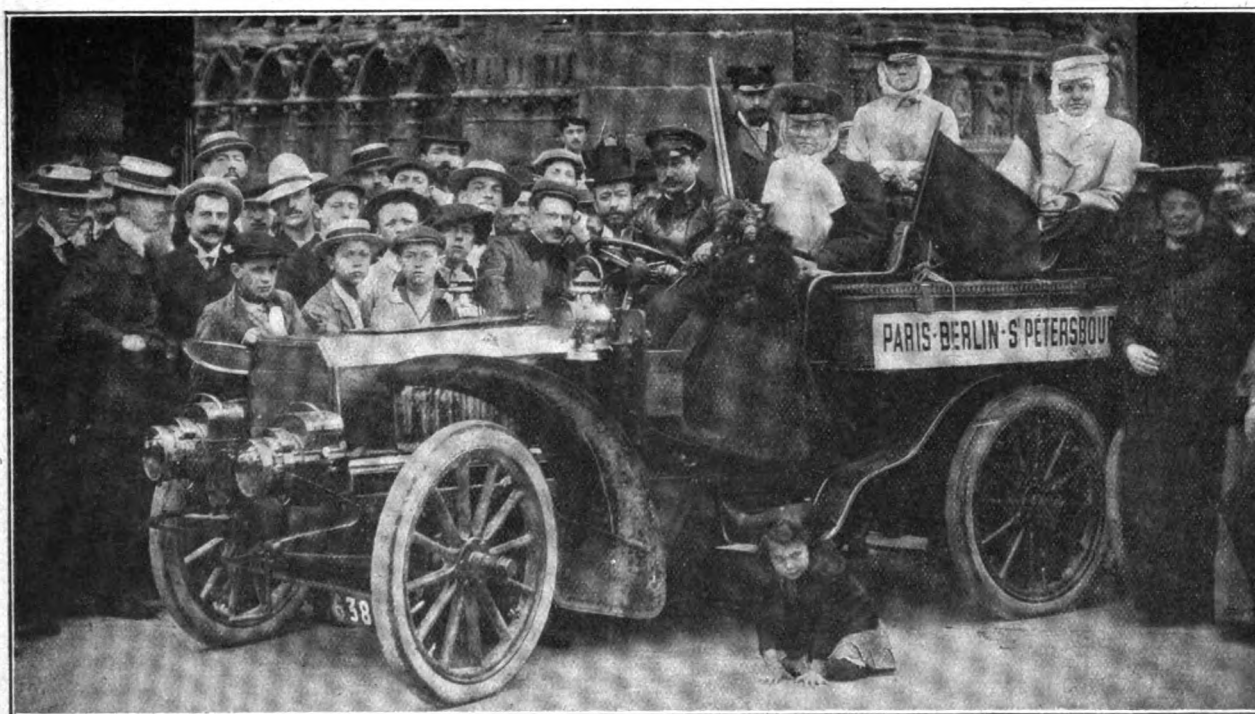
A Coventry View.

NATURALLY the vicar of St. Michael's, Coventry, the Rev. Canon Atkinson, is interested in the progress of automobilism, and in the current issue of his parish magazine says that if "Coventry will set an example in producing motor-cars at a moderate cost, not for speed, but for ordinary practical

Devonshire, enjoyed the sweetly varied scenery of the Lake District, and crossed the border to bonnie Scotland, calling on old friends and making new ones on the way.

New Sport.

REPORT says that the advice of the gallant knight who recently advised farmers and others to bring motorists to a standstill by shooting at their tyres has been followed by an agriculturist north of the Tweed. Unfortunately, however, no names have been given, or the identification of the valiant shooter and the reported London motoring victim would have been possible. It is said that the farmer and the motorist repeatedly met on the road, and the former, to protect his horses, held up his hand as a signal to the latter, who, however, paid no attention, and drove his car at full speed. His signals having been several times disregarded in this way, the farmer became incensed, and on the next occasion of their meeting he burst the tyres of the motor-car wheels by firing the contents of a rifle into them. Such sport ought to be as exciting as rabbit shooting.



The Start of Madame Lockert on the Tony-Huber Car from Paris for St. Petersburg.]

use, and if the machinery can be so regulated as not to be constantly breaking down, the custom would increase an hundred-fold, and Coventry will gain another such reputation as it won by the Starley improvement in the bicycle. I calculate this is common-sense, and I trust my friends of the motor-car will not become alarmists, but will take a sanguine view of the situation and have an eye to the future of the industry."

Commercials and the Car.

AUTOMOBILISM should be popular among "commercials," enabling them to be independent of the rigid timetables of the railway companies and to economise time and money in many ways. During the past summer many heads of firms and leading commercial men have combined business and pleasure by motoring in pleasant districts, calling on customers on the way. Our bright contemporary "Music" records an instance of such harmony in Mr. Heiden-Heimer, of Messrs. E. Hirsch and Co., the music firm, covering 2,000 miles in three weeks on a 16-h.p. "Martini Simplex." He visited the principal places in

At the Manœuvres.

MOTOR-CARS have played an important part in the military manœuvres on Salisbury Plain. Lord Roberts spent Monday night at Corsham Court, Lord Methuen's residence, and on Sunday proceeded to Marlborough, from which he has directed the manœuvres. The Commander-in-Chief has made extensive use of a motor-car, and these vehicles have also been largely employed by members of the directing and umpire staffs and by the newspaper correspondents. A large number of members of the Motor Volunteer Corps have been on duty, under command of Lieut.-Colonel Mayhew, and the corps has proved of great utility in carrying orders and in conveying officers on duty from place to place. On Monday, the Duke of Connaught made a wide tour of the invaders' position, crossing the heights of Hackpen Hill in his motor-car. Judging by the difficulties which beset the march of the gallant patrols of the 5th Lancers, who were the captors of Swindon on Monday morning, the one thing above all others to stop cavalry is a thoroughly startled herd of milch cows, especially if they have young calves at foot. Even motor-cars, directed by

the most recklessly brave of Motor Volunteers, could not charge the horned mob with success. The correspondent of the "Daily Telegraph" saw a line of the fiercest motors stopped in helpless confusion by a small detachment of two cows and a calf, and a town held by a herd would baffle even General French himself. Infantry and guns and cavalry are no doubt excellent in their limited way, but for real stopping power a bovine brigade is matchless.

Appeals.

A FUND is being formed for the purpose of taking certain selected cases under the new Motor Car Act to superior courts, a course that seems very desirable in view of the unsatisfactory constitution of the usual courts before which motorists are taken. Often the gentlemen constituting the rural bench are found sitting on the county bench, and appeals from one to the other are practically to the same body of men. This makes it very desirable that some such fund as is now being raised should be quickly established to convince the magistrates that their frequently prejudiced decisions are certain to be carried to higher courts.

The Dust Trials.

ON Wednesday a useful series of tests were carried out on the cycle track at the Crystal Palace. A layer of flour was placed over a few yards of the track, and the cars were required to come to a stop on this patch, and run their engines at full speed. Very few stirred up any dust at all, and in no case more than a very slight quantity. The vehicles were then required to make two circuits of the track, some fifty yards of which had been well sprinkled with flour. Travelling at a speed varying from twenty to twenty-five miles per hour, it was clear that very little dust was raised by the suction of the body of the vehicle. The wheels were guilty of stirring up almost the whole of the flour. Those cars, however, having boxes underneath the flooring at the back, sucked the dust after them to a greater extent than those with more clearance from the ground. Photographic observations, with a camera electrically operated by the passage of the cars, were made of the volume of the clouds which may assist in differentiating between the vehicles. Later in the day some trials with regard to the absence of noise and vibration were made in other parts of the Palace grounds.

Speed Trials in Yorkshire.

TO-DAY (Saturday) the Yorkshire Automobile Club will hold a series of speed trials at Wentworth Woodhouse, starting at 2 p.m. The best route from the north is *via* Wakefield and Barnsley, and the entrance is at the Hood Hill Lodge, near the seventh milestone on the Barnsley and Sheffield road. Members from Rotherham or Sheffield may enter the park by any lodge on the east side.

THE postal authorities in Berlin are at present making some trials of motor vans for the conveyance of mails.

A SCHEME of affiliation is being prepared, by which it is hoped that all motor-cycling clubs, both in London and the provinces, will become connected with the Auto-Cycle Club, and so extend the useful work which is being accomplished.

REGARDING our description of the Wantage steam wagon in the last issue, by accident we found ourselves in the breezy Berkshire town one day this week and availed ourselves of an invitation to visit Mr. Taylor, the manager. A steam wagon being under steam, several tests were made, including a trip up a long hill, with gradients, at portions, of one in seven. The experiments were in every way successful, and after they were completed we were conducted through the works, which cover more than an acre. These were found to be replete with the most modern tools, and the workmanship and materials were seen to be of the best description. There is, we are convinced, a future for the Wantage steam wagon.

THE MAN AND THE CAR.

EVERY margin of increase in the speed of the motor-car means so much more responsibility for the driver, along with a certain satisfaction in being able to govern his pace by the desire or by the requirements of the day or the hour. There is constant need of good judgment and vigilant nerve to make anything more than ordinary progress on the highway, even under the most favourable circumstances. And if mishap does come the personal intelligence and mechanical resource of the man at the wheel will often enable a damaged vehicle to finish its trip, or at least to get to a good repairing establishment.

That the "personal equation" is no hollow phrase is amply proved by the fact that large numbers of expert amateur *chauffeurs* are cultivating a larger liking for those automobiles which depend the most upon the knowledge and skill of the operator, and the least upon handling by rule, for their successful use, particularly under speed. A premium is placed not only upon mental and mechanical dexterity, but also upon careful and accurate judgment. Emergencies come on the wings of the invisible wind; and every one must be reckoned with, whether or not it suits the fancy of the moment. An emergency, roughly defined, is a crisis in which a person is called suddenly to do the best he can ever do under like circumstances. These crises come to every automobilist in his maturity as well as in his novitiate—perhaps even more so since he is likely to be less cautious. These are invaluable for discipline and instruction in the education of the *chauffeur*. They furnish the ready means of testing the physical powers, as well as proving the service of the senses. Action in emergency discloses the strength or weakness of one's nerves, shows the mental facilities one has, and not infrequently decides in a flash what might not be discovered under average conditions in a lifetime.

"Presence of mind," as the phrase goes, is a quality well worth cultivation. This readiness of summoning one's strength and judgment for instant use constitutes one of the most marked differences in men. Experience is necessary to enable the automobilist to meet the emergencies of the road successfully. The same conditions may never be present in two different cases, and conduct in one must be studied to use in what is to follow. Rashness in emergency is not bravery, because it lacks the essential element of cool judgment. On the contrary, it is usually a dangerous exercise of strength or courage. That fear of committing a fatal blunder, which makes men who think and care pause for an instant before making the decision, is an ingredient of true bravery. Acting first and thinking afterwards is the fool's method.

It would be interesting, remarks the "Automobile Magazine," to analyze the mental processes by which, very largely, the long-distance racing men contrive to run their huge racing machines at speeds as high as eighty miles an hour in the Continental road races. Suppose that before the oncoming brigade a child or dog squeezes through the wall of spectators and sprawls out upon the highway. To the *chauffeur* in the lead it is a mere speck in the distance—with a large problem attached to it. Will the child or dog attempt to cross the road, or will he return to the side whence he came? The decision as to what it were best to do must be reached, not through deliberation, or by calm consideration, not in minutes or even seconds, but in a flash.

Nor is this faculty wholly dependent upon the driver being an expert mechanic; it is rather the brain and the nerve that is in him. Many of the famous French racing men have been brought up in the workshops, and have therefore a thorough acquaintance with the practical side of their vehicle. But the best amateur management does not materially suffer from point-and-point comparison therewith. The former displays more mechanical dexterity; the latter, usually, more tact and more personal resource. This last is the most important of all, for it comprehends all the rest.

THE RELIABILITY TRIALS.

KENT, Surrey, Sussex, and Hampshire are receiving a great motor-car lesson, and following the trials of last year, the present tests should so far complete the education of those counties that other localities might well be influenced in 1904. With the Crystal Palace as the centre of operations, the Trials organised by the A.C.G.B.I. have become an important feature of the Automobile Year, and their value is recognised by makers and public alike. The arrangements this year are an improvement on those of 1902, and instead of the cars being closely packed in a somewhat inconvenient part of the great glasshouse, they are now stored in tents in the grounds. Entering from the Rockhills entrance, the visitor finds trees and fences placarded with notices: "To the Observers' Tents," "To the Press Tent," "To the Replenishing Depot," "to the Storage Tent," and similar directions to the various conveniences in connection with the Trials.

Of the 140 entries all except ten are vehicles using petroleum spirit. The Roots Oil Motor and Motor-Car, Limited, have entered one of their 4-h.p. cars using ordinary paraffin as fuel.

effected by means of a honeycomb radiator of a registered design, behind which there is a fan driven off the engine shaft by a belt. Coming to the engine itself, the three cylinders are cast separately, and are made of iron. Both inlet and exhaust valves are mechanically operated, and the cams are all on one shaft, and form a part thereof. The three-throw crank shaft is of nickel steel, bearings being placed between each of the cranks, which absolutely prevents any tendency to bend. The engine is governed on the throttle by means of a butterfly valve placed on the induction pipe, while the commutator is of the wipe pattern, and the sparking plugs are fixed vertically in the valve chamber. The bore of the cylinders is 90 mm. and the stroke 115 mm. The crank chamber is, of course, of aluminium, and it will be observed from Fig. 2 that the hanger brackets form a part thereof, and that the inspection plates are of ample size.

The Swift Motor Company have entered a 6-h.p. Swift voiturette; the Garage Proprietary, Limited, a 7-h.p. Cottereau; the Vulcan Motor Company, Limited, a 6½-h.p. Vulcan light car; Mr. L. A. Beckett, a 9-h.p. Mathieu; Messrs. B. Thompson and Co., an 8-h.p. Achilles car which Mr. Thompson drove from Frome to the Palace during the night of Tuesday; the Clyde

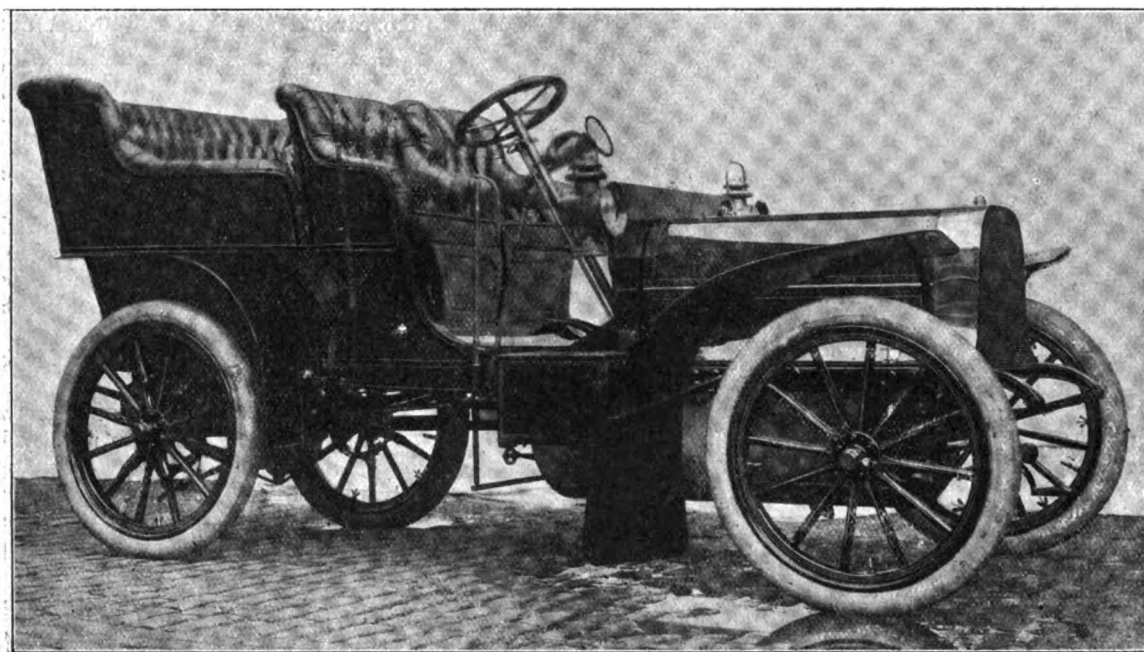


Fig 1.—The "Argyll" 12-hp. 3-Cylinder Car. No. 49 in the Reliability Trials.

The nine steam cars include an "Okodyne" by the Bickford Burners Company, a Cremorne by the Cremorne Motor Manufacturing Company, a Relyante by the Chief British Depot, two 12-h.p. Chelmsfords, a Stanley, a 10-h.p. Gardner-Serpollet, and two 10-h.p. Whites, the bulk of these being new cars now making their first appearance in public trials. As we go to press, however, we learn that the Okodyne and Cremorne vehicles will not take part.

Passing now to the petrol cars, the entries of the Hozier Engineering Company may be regarded as unique, they consisting of four vehicles having respectively one, two, three, and four cylinders (9, 10, 12, and 16 h.p.). We illustrate the 12-h.p. three-cylinder Argyll car and its engine, which is of the company's own manufacture. With the exception of the motor, the mechanical parts of the car are the same as those employed during the whole of this season in the single, double, and four-cylinder cars, and which, such as friction clutch, gear-box, and axles, are now well known. The wheel base of the car is 7 ft. 10 in. and the track 4 ft., while the wheels are of equal size, 34 in. diameter. The frame, however, is made of stamped steel in place of the armoured wood hitherto used. The cooling is

Cycle and Motor-Car Company, one of the 6½-h.p. Clyde cars recently illustrated and described in the *Journal*; the International Motor Manufacturing Company, a 10-h.p. Dechamps; the Velox Motor Company, a 20-h.p. Velox; the Maudslay Motor Company, a 25-h.p. Maudslay; Messrs. Evart-Hall, Limited, a 15-h.p. C.G.V. similar to that, as regards the chassis, recently supplied to the King of Portugal; the United Kingdoms Inventions Association, a 20-h.p. four-cylinder Holcar; the Fiat Motor Agency, a 16-h.p. Fiat, an Italian-built vehicle; Messrs. A. Darracq and Co., one each of their 9-h.p., 12-h.p., and 24-h.p. cars; Messrs. Dennis Brothers, Limited, a 12-14 h.p. and a 16-20-h.p. Dennis car; Messrs. F. F. Wellington, Limited, a 14-h.p. Brooke and a 12-h.p. Gobron-Brillié; the Albion Motor-Car Company, Limited, a 12-h.p. Albion car with special governor; the Simms Manufacturing Company, Limited, a 10-h.p. and a 20-h.p. Welbeck; Messrs. Krupkar, Limited, a 12-h.p. Krupkar; Messrs. Horsfall and Bickham, a 10-h.p. Horbick; the Bradford Motor-Car Company, a 10-h.p. and a 20-h.p. Spyker, of which a description was given in the *Journal* at the time of the Exhibition at the Agricultural Hall in April last; the Ariel Motor Company, Limited, a 12-h.p. Ariel;

Messrs. J. W. Brooke and Co., a 14-h.p. Brooke, which was driven up by road from Lowestoft by Mr. Maudslay Brooke; Messrs. Marshall and Co., a 15-h.p. Belsize; the British Automobile Commercial Syndicate, a 12-h.p. Clement; Captain Theo Masui, a 15-h.p. and a 20-h.p. Germain car; Messrs. S. F. Edge, Limited, a 10-h.p. and a 12-h.p. Gladiator; the Speedwell Motor and Engineering Company, Limited, a 9-h.p. Renault;

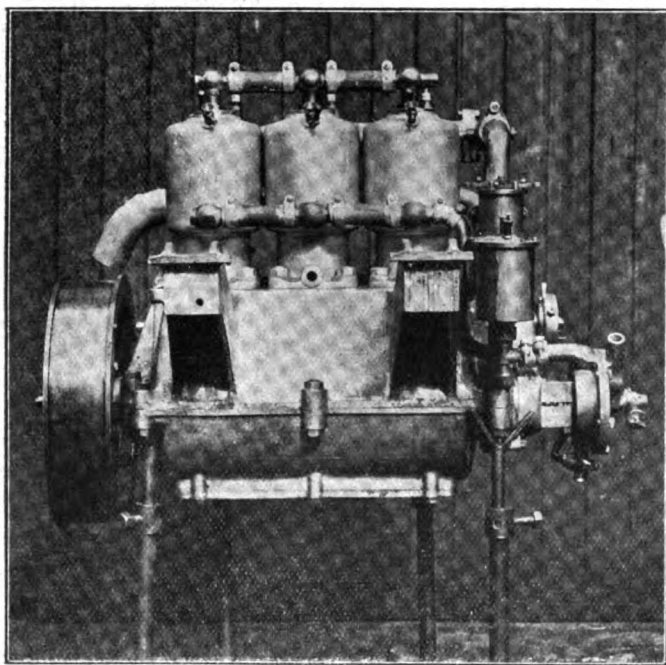


Fig. 2.—The Argyll 12-h.p. Three-Cylinder Motor.

the Pick Motor Company, a 10-h.p. tonneau and a 10-h.p. voiturette; Mr. O. C. Selbach, a 6-h.p. and an 8-10-h.p. Regal; the Star Engineering Company, one each of their 7, 10, and 15-h.p. Star cars; Messrs. John Marston, Limited, two 12-h.p. Sunbeam cars; the Thornycroft Company, a 10-h.p. and a 20-h.p. car; Messrs. Durham, Churchill and Co., a 10-h.p. and a 20-h.p. Hallamshire vehicle; the Burlington Carriage Company, 6-h.p., 8-10-h.p. and 16-20-h.p. Elswick cars; the Chief British Depot, a 6-h.p. and a 12-14-h.p. Relyante; the Mohawk Motor Company, Limited, a 9-h.p. Mohawk Manon; Messrs. De Dion-Bouton, Limited, a 6-h.p. and a 12-h.p. De Dion; the New Orleans Motor Company, a 12-h.p. and a 15-h.p. New Orleans; Messrs. Jarrott and Letts, Limited, two 5-h.p. Oldsmobiles and 16-h.p. and 24-h.p. De Dietrich; the Beaufort Motor Company, Limited, 9-h.p., 14-h.p. and 20-h.p. Beaufort cars; and the Roadway Autocar Company, a 10-h.p. Renault, a 14-h.p. Renault, and an 18-h.p. Mors.

The Motor Manufacturing Company, Limited, are represented by an 8-h.p. voiturette and a 20-h.p. M.M.C. car. On the latter are several minor improvements which will be appreciated, including the placing of tool boxes on the steps on each side, thus adding greatly to the convenience of ladies mounting the vehicle. Between the bucket seats is also a receptacle for papers, etc. The Daimler Motor Company have a 15-h.p. and three 22-h.p. Daimlers in the Trials, in addition to a 12-h.p. Belgica, which, as the name implies, is of Belgian construction. Mr. E. W. Hart had entered a 24-h.p. combination petrol-electric car, but it was not ready in time to take part. The Brush Engineering Company are represented by two cars, one of 12-h.p. and one of 15-h.p. Messrs. Wilson and Pilcher had entered a 12-h.p. four-cylinder car and a new 18-h.p. six-cylinder vehicle, but unfortunately the latter will not be seen in the Trials. A new Scotch car is the 25-h.p. Cassell of the Central Motor Company. Captain Deasy will be represented by a 16-h.p. Rochet-Schneider car and

a 14-h.p. Martini, the latter being built in Switzerland, under a Rochet-Schneider licence.

The Standard Motor Company has a new car in an 8-h.p. Standard, and the Coronet Motor Company, Limited, a 7-h.p. Coronet. The entries of the Rex Motor Manufacturing Company include a 3½-h.p. Rex Tricar and 10-h.p. and 13-h.p. Rex cars. The Siddeley Motor-Car Company is represented by a 6-h.p. car, and the London Motor Garage Company by two 15-h.p. Pipe vehicles, one of which is fitted with the Jenatzy magnetic clutch. Messrs. James and Browne have a 9-h.p. and an 18-h.p. four-cylinder car in the Trials; the Century Engineering and Motor Company a 6½-h.p. Century tandem, a 6½-h.p. two-seated car, a 10-h.p., a 12-h.p., and also a 16-h.p. vehicle. Messrs. Friswell, Limited, are represented by a 5-h.p. Baby Peugeot, a 10-h.p. and a 12-h.p. car of the same make. The Eagle Engineering and Motor Company, Limited, have sent a 6-h.p. Eagle tandem and a 9-h.p. Eagle car; Messrs. Mann and Overtons, Limited, are represented by a 5½-h.p. Pony Richard, a 10-h.p. Georges Richard, a 12-h.p. car (illustrated in Fig. 3), and a 24-h.p. vehicle. The Anglo-American Motor-Car Company are running a 6½-h.p. Cadillac, which we hope to illustrate next week, and a 20-h.p. Winton; and the Lanchester Engine Company are taking part with a 10-h.p. car and one of the new 16-h.p. Lanchester vehicles.

Messrs. Humber, Limited, had entered five cars for the Trials, these including two examples of the new 5-h.p. Humberette, a 12-h.p. car, a 20-h.p., and a new 9-h.p. three-cylinder vehicle. The latter will, however, not be seen in the Trials, as we learn that whilst it was being taken for a final run on Monday, prior to sending the vehicle to the Crystal Palace, it was damaged to such an extent that its appearance in the Trials is impossible. In order to avoid a collision the driver had to take the side of the road, and run into a hedge, with consequent injury to the vehicle. This was the first and only one of the new type that the company had on hand. Minerva Motors, Limited, have a new car in a 7-h.p. Vesta, another new vehicle being the 16-h.p. Maxim two-cylinder car of the London General Automobile Company. The Ryknield Engine Company, Limited, had entered a new 10-h.p. car, but inform us they have been unable to complete it in time. The Wolseley Company are represented by one of the new 6-h.p. light cars, and examples of the standard 7½-h.p., 10-h.p., 12-h.p., and 24-h.p. types. The Mo-Car Syndicate, who had entered two 12-h.p. Arrol-Johnston cars,



Fig. 3.—The 12-h.p. Georges Richard Car. No. 57 in the Reliability Trials.

met with bad luck, they being too late for admittance at the Crystal Palace by only three minutes. The Weston Motor Syndicate are represented by a 18-h.p. Chenard and Walcker car, in regard to which they ask us to mention that it has, unfortunately, been found impossible to complete it, in the true sense of the term, in time for the Trials; that is to say, the car entered is really only a rough conception of what the actual

finished car will be, a special carburettor adapted to their particular system not being ready. The car which is running in the Trials is in the rough. As an instance, it may be mentioned there was not even time to fit the aluminium dust-guard, which will protect the whole of the machinery from dirt; the control levers and pedal are all hand-made, and the bonnet and chassis were painted in one night. Altogether, about thirty cars failed to appear, and two or three were regarded as duplicates, infringing the rule that only one vehicle of a type may be entered by any firm, so that in all 107 cars out of 140 entries are now eligible for the Trials.

On Tuesday morning the first of the series of brake tests was held; in the Palace grounds, a course about 100 yards in length having been selected for the purpose. The greatest gradient of the road was 1 in 7, and the plan adopted as follows: The vehicles were driven up the ascent to a white line across the road, where they were stopped with the foot brake. After a momentary rest the car had to be allowed to run back until the order to halt was given, when the application of the brake gave

The Trials proper, so far as the Thousand Miles are concerned, begin on Friday the 18th, and the following notes as to the routes will be of interest to motorists anxious to see the vehicles in procession array, or when at their halting places.

Friday, 18th inst.—To Margate via Bromley, Foot's Cray, Wrotham Hill, Maidstone,* Sittingbourne, and Canterbury, to the Cecil Square, Margate. The cars will return by the same route, stopping again at Maidstone.*

Saturday, 19th inst.—To Eastbourne via West Wickham, Sevenoaks, Tunbridge Wells,* Mayfield, Hailsham, to the sea front at Eastbourne. The return will be made via Uckfield, Edenbridge, Westerham, up Westerham Hill.

Monday, 21st.—To Worthing via Epsom, Dorking,* Pulborough, Arundel, to the sea front at Worthing, returning by way of Broadwater, Horsham,* Reigate, and Purley.

Tuesday, 22nd.—To Folkestone via Maidstone and Hythe, to the Hotel Metropole, Folkestone, returning by same route to Maidstone,* and thence via Seal, Riverhead, and Farnborough.

Wednesday, 23rd.—To Southsea via Leatherhead, Guildford,* up Hindhead, Cosham, to the Esplanade, Southsea. Return by same route stopping again at Guildford.*

Thursday, 24th.—To Bexhill via Tonbridge,* Robertsbridge, to the sea

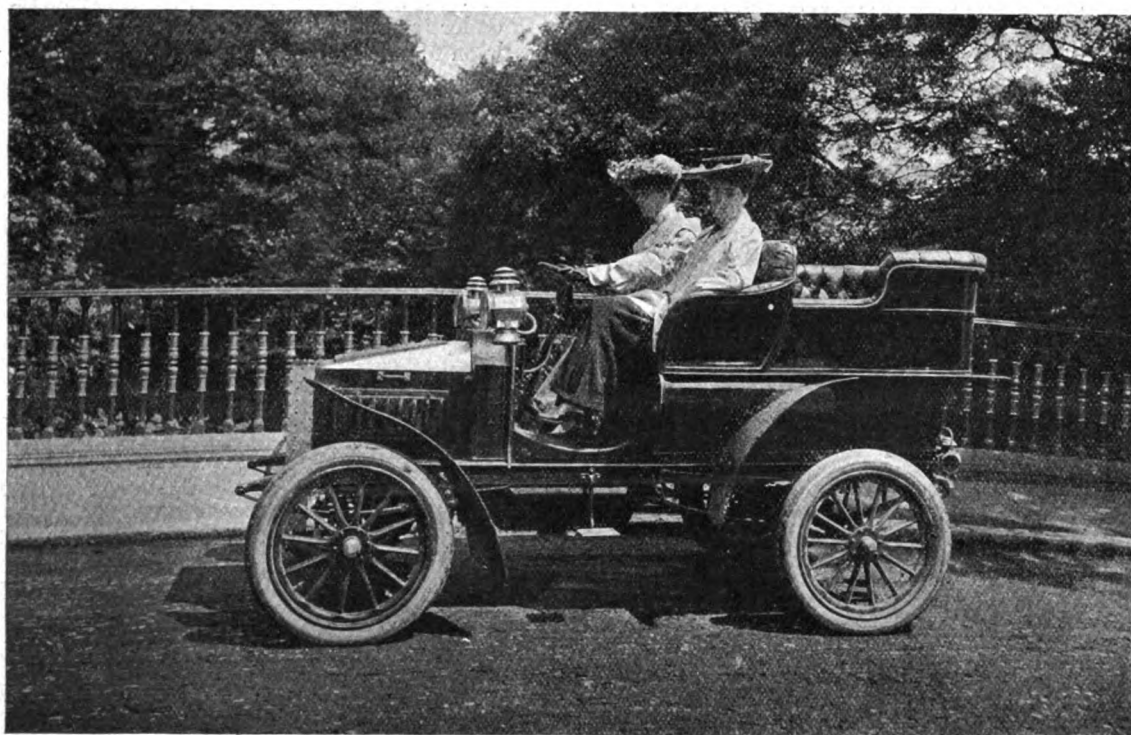


Fig 4.—The 10-h.p. White Steam Car, No. 84 in the Reliability Trials.

the judges an opportunity of seeing if it was sufficient to hold the car. After the hand brakes had been similarly tested the vehicles were started from a standstill below the steepest part of the incline.

The way in which the cars went through the tests would have convinced any nervous J.P. as to the power of control that is now possible. The official results are of course not yet known, but among the English cars conspicuous in these preliminary tests were the 8-h.p. M.M.C., 12-h.p. Albion, 22-h.p. Daimler, 12-h.p. Ariel, 16-h.p. Lanchester, 10-h.p. and 12-h.p. Wolseleys, 15-h.p. Belsize, 18-h.p. James and Browne, 6-h.p. Swift, 12-h.p. Dennis, 4-h.p. Roots, and 5-h.p. Humberette. Other cars succeeding in this category included representatives of the following types: Baby Peugeot, Gladiator, Oldsmobile, Cadillac, Elswick, Regal, Spyker, Gardner-Serpollet, Georges Richard, Peugeot, Rochet-Schneider, etc.

Wednesday's trials comprised a series of observations with regard to the noiselessness or otherwise of cars, and also dust trials. Thursday's proceedings included a luncheon and a meeting of observers to receive final instructions.

front, Bexhill, where a speed trial will take place. The return will be by way of East Hoathley, East Grinstead, Godstone,* and Purley.

Friday, 25th.—To Winchester via Leatherhead, Guildford,* Farnham, Alresford, to the Guildhall Square, Winchester, returning by same route stopping again at Guildford.

Saturday, 26th.—To Brighton via Purley, Redhill, Crawley,* Cuckfield, to the sea front, Brighton, returning by Handcross, and the same route as on the outward journey, with stop at Horley.*

The start each morning will be at 7.30 p.m., and three-quarters of an hour will be spent at the furthest point on the outward journey each day. Compulsory stops of fifteen minutes will also be made at the places indicated above by an asterisk.

DESTINATION.	MILEAGE.	LUNCHEON AT
Margate	150½	White Hart.
Eastbourne	121	Grand.
Worthing	118½	Warne's.
Folkestone	137½	Metropole.
Southsea	144½	Esplanade.
Bexhill	121½	Sackville.
Winchester	133½	St. John's Rooms.
Brighton	91½	Old Ship.

THE Derby police are taking action against reckless drivers of horses.

LAYING THE DUST.

THOSE who visited Ireland and went over the Gordon Bennett course, in the pouring rain, no doubt saw, as the writer did, several patches of black looking stuff, with a surface like greased glass, which rendered steering very "tricky." Again at Ballyshannon many will remember there was a fair sized installation on which, during the rain, one of the competitors slipped, causing the authorities afterwards to apply sand to the surface. These dust layers, we were informed at the time, had been applied with the chemical known as "Westrumite."

Receiving an invitation on Monday from the directors of Westrumite, Limited, to be present at a demonstration of the efficiency of their process for the purpose of laying the dust on high roads, we notified our acceptance. The venue was Windsor, and some thirty gentlemen were accommodated in a saloon carriage. After luncheon at the White Hart, presided over by Mr. Peters, ex-mayor, several highly laudatory speeches were made, including one by Mr. Wethered, who was on one of the cars starting from Whitehall on that memorable day in November, '96.

The party, which had been largely augmented, then proceeded in some half dozen cars and several wagon-

the effect of using it on the roads is that the frequency of ordinary watering is done away with, and the inventor is of opinion that, according to the wear and tear on the roads, it will only be necessary to do the watering once or twice or three times a month, with a very small proportion of solution.

A feature of the demonstration was the willingness of the principals to impart all information to inquiries as desired, and in response to an inquiry from the writer to see the mixing for himself, an adjournment was made to the surveyor's yard, where a water cart was brought out, and a quantity of the solution was poured in. It was seen to mix at once with the water, and the cart went round the spacious yard watering it, the flowing liquid being of an even dark colour. Suggestions were made that the stuff might stain ladies' dresses, etc. The inventor, who was present, immediately took the tail of his light covert coat and dipped it into the stuff, he claiming it would leave no stain whatever. The only smell was a slight odour of ammonia, but, as is well known, this chemical is of a highly volatile character and soon disappears.

The effect of watering on the roads is to make mud. The effect of watering with "Westrumite" is to make the roads hard, as if under frosted conditions, and judging by the experiments we saw on Monday we do not anticipate any fear of the roads being greasy in wet weather. As to the lasting stability of



The North Eastern Railway Company's Motor 'Bus Service between Beverley and Beesford. The Two Stirling 24-h.p. vehicles at Beesford. (See issue September 5th.)

ettes, a mile or two out of the town, where about 1,000 feet of road had been sprinkled with "Westrumite." In the meantime the writer, in conversation with Mr. Adkins, had referred to the experiments in Ireland, and that gentleman informed us that instead of only putting a solution of about five or ten per cent. on the ground, the contractors had practically poured it on without scarcely any water at all, and hence its highly slippery condition. The present patch had been treated on the Sunday morning with thirteen per cent. of the solution and three per cent. on the Monday morning, while the demonstration took place in the afternoon of the latter day. The course was kept clear, and the cars, including a 35-h.p. Panhard, came along from off the dusty roads at full speeds, leaving behind high banks of dust, and reaching the "Westrumite," where the atmosphere was absolutely clear, and not a particle of dust was raised. The experiments were extremely successful, and we feel convinced there is now an article on the market with which surveyors themselves can experiment. The solution, which consists of a small portion of petroleum, ammonia, etc., mixes instantaneously without any stirring when poured into the ordinary watering cart. The proportion suggested of course depends upon the state of the road. The largest quantity advised is 10 per cent., but the usual proportion is 5 per cent. In many instances, however, the quantity can be lower, while

the roads under the new treated conditions, time alone can prove, but it seems to us that the process, if intelligently applied, would give the roads longer life.

At all events the article is now marketed and can be supplied in barrels, at the rate, of £10 per ton, and we are assured that the cost of distributing the mixture is only about one half farthing per square yard per distribution. Surveyors can experiment for themselves, and it is not an expensive outlay for them to order, say a ton, and, in the proportion of 5 per cent., to apply it on any dusty roads in their locality. Of this they may rest assured, while the stuff is on the road there will be no dust. At all events, as motorists, and keenly alive to the nuisance of the dust, we were extremely pleased with the experiments, and it now remains for local authorities to at all events try the solution. We wish Westrumite and any other similar preparation the very best of success.

At Bow Street, on Tuesday, Charles Francois, of Sinclair Road, Kensington, who, it is alleged, represented himself to be the Duke Charles de Nevers, of Paris, was formally remanded for committal to the sessions charged with obtaining a motor-car value £180 from Mr. O. C. Selbach by means of a worthless cheque.

CONTINENTAL NOTES.

DURING the course of his recent visit to Marienbad, King Edward made a number of trips in a 24-h.p. Mercedes, kindly placed at his disposal by Messrs. Arnold Spitz and Company, of Vienna, who have since received the following letter:—

General Sir Stanley Clarke is directed to convey to the firm Arnold Spitz the best thanks of His Majesty King Edward for the excellent automobile so kindly lent by the firm for his use whilst at Marienbad. His Majesty was able to enjoy many charming rides in the neighbourhood, and he thought the car one of the best he had ever driven in. These excursions were rendered all the more pleasant by the skilful way in which Mr. Ernst Eidlitz drove the car.

The illustration herewith shows King Edward leaving the Hotel Wiemar, Marienbad, in the car. His Majesty occupies the right hand seat in the tonneau, being accompanied by General Sir Stanley Clark. Herr Eidlitz is at the wheel, and Capt. Ponsonby is at his side.

Bouton, there is some talk of organising another tour next summer in England and Scotland.

THE hill-climbing trial at Chateau-Thierry is announced for the 4th of October, and it is to be hoped that there will be plenty of entries, and a good meeting; so far, however, there are only about a dozen entries. The race is to be a kilometre, with a standing start, and the course is straight.

MESSRS. W. AUSTIN AND SONS, of Neshells Green, Birmingham, are stocking petrol, oils, and greases, and also re-charging accumulators.

A SERVICE of steam motor-cars is to be established between Pontypridd and Caerphilly, a new departure inaugurated by the Alexandra Company.

VERNO CHURCHILL, who has made a great reputation as a globe trotter, started from Atlantic City, U.S.A., a few days ago on an automobile trip round the world. He will travel



His Majesty King Edward off for a run in a Mercedes at Marienbad.

(Allgemeine Automobil Zeitung.)

THE French Automobile Club's trials of public service vehicles and motor-cabs, which should have commenced on the 5th October, have been postponed for a week.

Le Monde Sportif is organising a series of flying kilometre and mile speed trials to be run over the measured distances on the Dourdan road, forty kilometres from Paris, on October 22nd. Already eighteen entries have been received, including six Darracqs, three Serpollets, two Gobron-Brillies, a Mercedes, a Prunel, and five motor-cycles.

FOLLOWING the example of the Frankfort Automobile Club, the German Club proposes to hold a race meeting on October 18th, on the Trab horse-trotting track at Westend, Berlin. The track is just a mile round.

IN view of the success of the recent tour in Germany of owners of De Dion cars, organised by Messrs. De Dion and

25,000 miles, and expects to be away sixteen months or longer. He is first making for San Francisco, whence he will cross the Pacific Ocean to Japan, travelling through that country, China, India, and Europe, and back again to America. Let us hope that he will be more successful than his predecessors in the round-the-world attempt.

IN view of the stories that have lately been in circulation as to the abuses of cars whilst stored in various garages, an incident reported from the Regent Street garage, a few days ago, is of interest. A customer took a car to be stored there, and after it had been in the garage a couple of days one of the workmen found £80 in bank notes in one of the cushions. The find was at once reported to the manager, and the money returned to the owner of the car, who rewarded the man who found the money with £10. This is only a small point, but motorists leaving cars at garages should always take care that they do not leave small parcels and valuables of any kind with their cars.

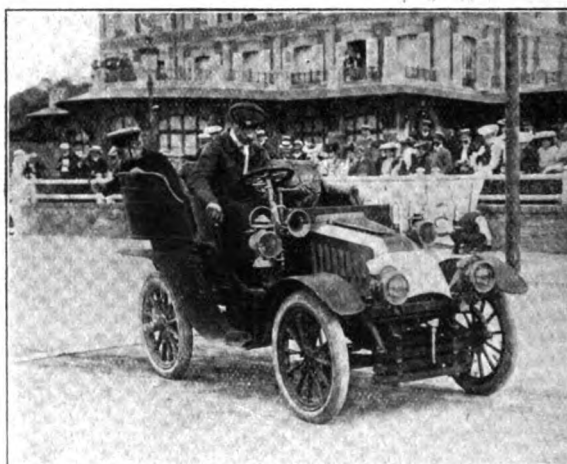
THE DEAUVILLE TRIALS.

THE Deauville races took place on Thursday, last week. There were fifty-three entries and twenty-two starters, and in some cases, like in the wayside theatres, the same actor was made to play more than one part. The meet could not by any stretch of imagination be said to be representative of the motor-car manufacture of France. The competition was for the best time over a distance of 500 metres, with a standing start, and with a dead stop with the winning line between the wheels. Tricky starts were avoided by the following ingenious arrange-

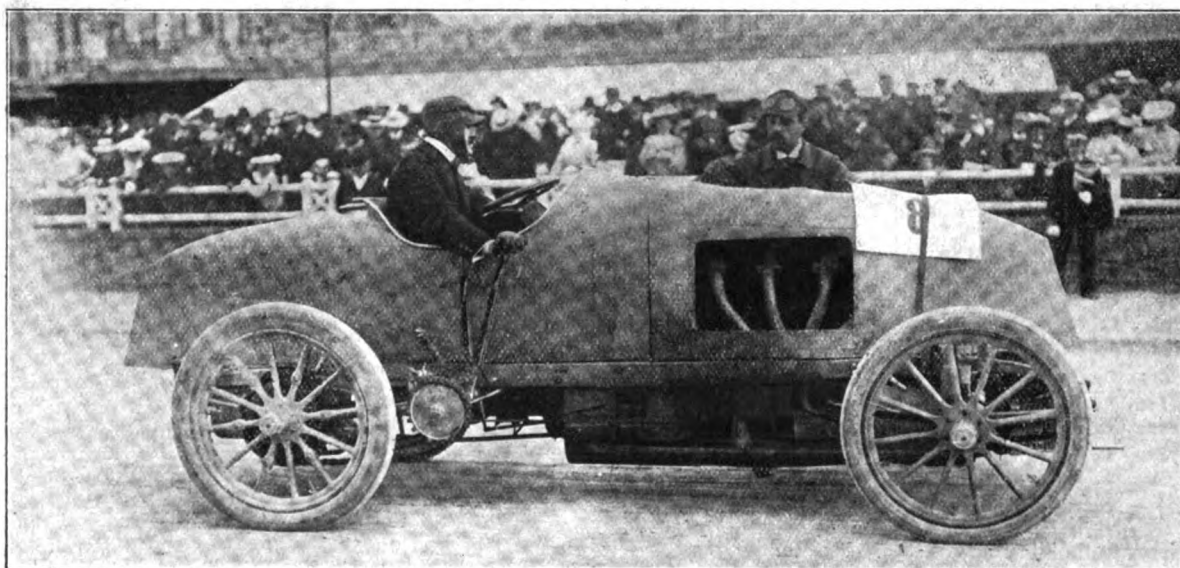
the Deauville races; it was the calm before the terrible storm of Thursday night, which devastated the coasts of France and England, swamped the promenade at Deauville, where the race had been held, and left it blocked by sand and debris. The best time was made by Jeandre on a 70-h.p. Mors, who did the distance in 33 4-5 seconds, beating the record held by Duray on a Gobron-Brillié by 1-5 of a second. Two 40-h.p. Darracqs came next, driven by Beconnais and Wagner, with 35 seconds and 35 3-5 seconds respectively, and then a Serpollet driven by Madame Le Blon in 38 3-5 seconds. A Clement won the motorcycle section in 39 3-5 seconds. In the tourist section, Cabailot,



M. Le Blon on Gardner-Serpollet Steam Car.



M. Cabailot on 8-h.p. D. Dion.



M. Jeandre on the 70-h.p. Mors

THE DEAUVILLE SPEED TRIALS.

ments. It has been recognised that in standing start races a clever driver gets away before the starter has said the word "Go," and gains sometimes nearly a second on his competitors. This was prevented at Deauville by placing a wire across the track, which has to be broken by each competitor. At the word "Go," from the starter, the competitor has five seconds during which he must break the wire, and his time is taken, not from the word "Go," but from the time he breaks the wire, so that no object is gained in getting in front of the word "Go." Should any competitor, however, let the five seconds pass without breaking the wire, the starter breaks it for him and his time is counted from the moment it is broken. The weather was most favourable to

on an 8-h.p. De Dion, won the £160 and under chassis class (1 min. 2 2-5 sec.); Renaux, on a 16-h.p. Peugeot, the £160-£320 class in 51 3-5 seconds; Pelzer, on a Serpollet, the £320-£480 class in 42 2-5 seconds; Rasson, on a Clement, the £480-£640 class in 43 2-5 seconds; and Gasté, on a 20-h.p. Automotrice, the £640-£1,000 class in 1 min. 4 sec. The trials lasted about two hours, and were carried through without the least accident or incident.]

MR. BENNETT BURLEIGH, the well-known war correspondent, chartered a C.G.V. car for the autumn military manoeuvres, while Lieut.-Col. Pollock has been using an M.M.C. car.

SOUTH AFRICAN NEWS.

[FROM OUR OWN CORRESPONDENT.]

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CAPE TOWN, August 26th.

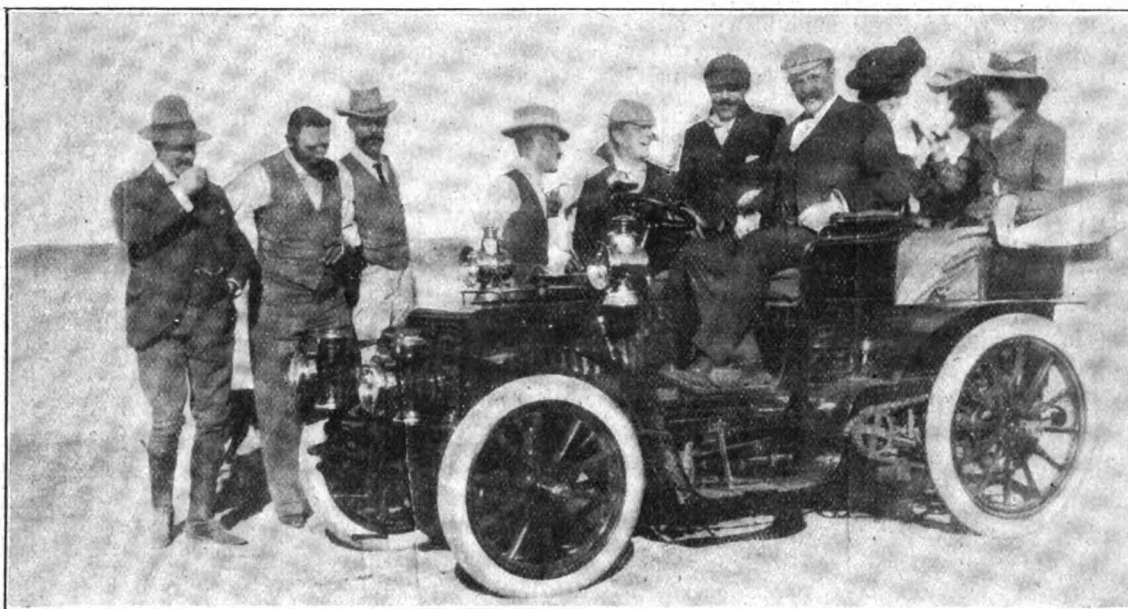
FINE weather still continues, and business is not at all bad in the motor line. The Raleigh Cycle Agency are doing good business with the Oldsmobile. Two were shipped up-country the other day, to Dr. Houlthwaite and Mr. H. de Plessis, both of Philip's Town, C.C. I understand that Mr. J. A. C. Graaf intends purchasing a 16-h.p. Lancaster, and that Mr. D. P. Graaf, who owns a 22-h.p. Daimler and a 12-h.p. Brush, has intentions on a 7-h.p. Panhard for town work. The latest addition to the ranks of motorists in Cape Town is Mr. "Rheumaticuro" Jones, who has acquired a 6½-h.p. Gladiator. As his sobriquet implies, Mr. Jones is of patent medicine fame.

MR. L. RIVAS, of the Lace Diamond Mines, Kimberley, and residing on Belle Vue Estate, Sea Point, has imported a fine 12-h.p. Panhard. The body of the car is painted white, the wheels red, and the upholstery is finished in red buttoned leather, presenting a very attractive appearance. His driver,

BACK FIRING—A MISAPPLIED TERM.

THE word back firing is applied in automobile terminology to three distinct phenomena. It was originally used in connection with petrol engines, to denote the fact that the inflammable mixture in the carburettor and inlet passage had become ignited, owing to imperfect closing of the inlet valve or the production of a spark at the wrong time. In connection with two-cycle engines the term back firing is used to indicate that the flame has passed into the crank chamber and ignited the charge therein. Users of steam cars also use the term back firing with reference to the burners of their machines. Everybody who has used a laboratory Bunsen gas burner knows that sometimes in adjusting the flow of gas to the burner the flame travels down the tube of the burner to the air openings at the base of the tube and burns there with a roaring noise. Similarly, in a steam-car burner the flame, especially if the top plate of the burner has become leaky, will sometimes travel back through the mixing chamber to the mixing tube opening, and burn there, when the burner is said to be back firing.

In connection with petrol motor-cars the term back



A Motoring Party at Modder River, South Africa.

The photo was taken under Magersfontein Kop, where the Gordon Highlanders were cut up during the late war, and the trip was made to this place to select a site for the erection of a monument to the memory of General Wauchope and the Highlanders who fell there. Mr. W. E. Bush is at the helm, and next to him is Mr. J. Liddell, chief electrical and chemical engineer to De Beers, and in the tonneau are his daughters. The gentleman on the extreme left of the picture is Mr. Bissett, who owns the farm at Magersfontein.

Thomas, is a first-class man. He came out from the Panhard works, took part in the ill-fated Paris-Madrid race, and also in the Irish Fortnight. It is his second visit to South Africa.

MR. ED. A. COURTIS, of Cape Town, has on the water a "Holley" motorette from America. Mr. Courtis's previous car was a little 3-h.p. vehicle fitted with a Thomas engine. It was originally a tricycle with a basket seat over the two rear wheels, and was then the property of Mr. J. W. Courtis, who now runs a Baby Peugeot. The car was the first, and I believe the only one, ever built in South Africa. It was turned out in its original state from Garlick's shops, and was fitted with a light body and tiller steering afterwards. The carburettor was of very original design, consisting simply of a piece of 1-inch gas-pipe, with a hole in the middle through which the petrol dripped by gravity from the tank, the amount being regulated by a needle valve. Over the open end of the pipe which communicated with the air was a slide to regulate the amount of air taken in. I have made 25 m.p.h. on the level with this little car. The last I had to do with it was being thrown out, through the front forks snapping while making a good fifteen miles an hour.

firing is sometimes also used to describe what is, remarks the "Horseless Age," more generally and more properly referred to as a back kick of the motor. When the motor is being started by turning it over by hand, if the ignition occurs too early the starting crank may be jerked from the hands of the person trying to start the motor and the crank turn over in the wrong direction. The term back firing should never be employed to designate such an occurrence, as the use of the word for this purpose is likely to create confusion. Without this application the term back firing has a definite meaning as applied either to petrol or steam automobiles, and all cause for misunderstanding is avoided.

THE Earl of Kimberley attended a meeting of a committee of the Norfolk County Council on Saturday, and said he intended at the next meeting of the Council to suggest that it should be made obligatory on the owners of all vehicles to carry lights.

At the Brompton County Court, on Tuesday, the Kensington Motor Company, Limited, 64, Hammersmith Road, W., obtained judgment for £5 15s. from Mrs. C. Greene, of Shepherd's Bush, W., the claim being in respect of professional services rendered in teaching defendant's son to drive a motor-car.

MOTOR-CYCLING NEWS.

THE reliability trial of the Moto-cycle Club de France is to be held during the second fortnight in October. The competition is on the lines of that recently held in this country, the distance to be covered in six daily runs aggregating 1,040 kilometres. The start will take place each day from Paris, Chartres, Vernon, Corbeil, Chantilly, Beauvais and Evreux being visited. Points will be awarded for regularity of operation, brakes, stability, weight, fuel consumption, etc.

On Saturday last the Motor-Cycling Club held a non-stop test for two-seated motor-cycles with two or three wheels. The course mapped out was about 100 miles, and consisted of four trips to and fro between Godstone and a point on the Lewes road within six miles of the latter place. The route was a fair one and sufficiently trying to make the test useful. Out of thirteen entries, ten faced the starter. These were F. R. Johns, J. Van Hooydonk, W. F. Lord, C. W. Brown, F. Garner, A. C. Wright, J. Platt-Betts, A. W. Hacking, W. J. Milligan, and A. J. Brooke. Each driver had to carry a passenger whose weight was not less than ten stones. A maximum speed of 17 miles an hour was permitted over the trip, the minimum being twelve. Each rider was started independently, and was under



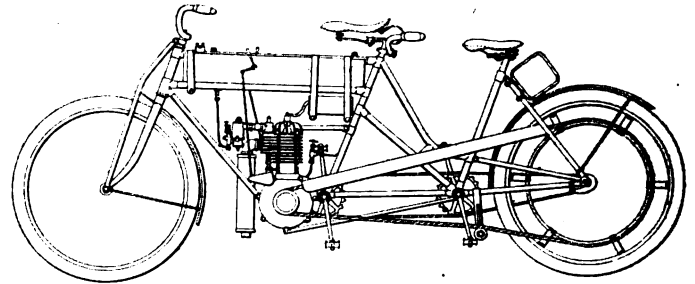
Mr. A. W. Hacking on the Ormonde near Lewes.

surveillance all the way, so that there could be no doubt as to the authenticity of the results. Five completed the run, viz.:—W. F. Lord (Ormonde), F. R. Johns (Humber), J. Van Hooydonk (Phoenix), A. C. Wright (Ormonde), and A. W. Hacking (Ormonde). With the exception of Lord, all those who finished had slightly exceeded the speed limit, and the Committee are to meet shortly to decide to whom the prize will be awarded. Another 200 miles reliability test, on the North Road, is to be held by the Club on the 26th inst., starting from the Red Lion Hotel, Hatfield, at 6 a.m.

PROMOTED by the Dublin centre of the Motor Cycling Union a motor-cycle reliability trial was held on Saturday last, nine of the eleven entrants finishing. The course was from Inchicore to Maryborough and back, a road familiar enough to motorists during the Irish Fortnight. Previous heavy rain had made the roads in a very greasy state. The distance of the trial was 96 miles and was divided into seven sections. The legal limit of speed was fixed as the maximum pace between each of the stations, and any rider gaining on the minimum time allowed for each section lost 15 marks per minute, while any rider covering the distance in less than the minimum time, but faster than the maximum, lost 5 marks per minute for every minute so lost. A rider failing to cover the section in less than the maximum time

was disqualified. The gross times of those who finished were as follows:—E. Martin (Excelsior), 5h. 38m. 15s.; T. W. Houghton (F.N.), 5h. 41m. 15s.; A. Summers (Triumph) 5h. 45m. 15s.; R. W. Stevens (Star Griffon), 5h. 48m.; A. Huet (James), 5h. 48s.; L. R. Oswald Sealy (Brown), 5h. 50m. 15s.; J. J. Cobier (Roebuck), 5h. 50m. 15s.; H. Shaw (Excelsior) 5h. 56m. 15s.; A. Franklin (F.N. Fore-carriage), 6h. 4m.

HEREWITH we illustrate an American design of motor tandem bicycle. It is made by the G. H. Curtiss Manufacturing



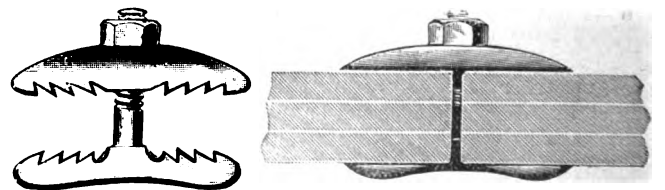
Co., of Hammondsport, N.Y., and is fitted with a 2½-h.p. motor having a bore and stroke of 3 inches. It is governed by the ignition and inlet throttle, and has an exhaust valve lifter for relieving the compression. The main shaft bearings are provided with twenty-five ¼-inch steel rollers which are held by bronze retainers between ground steel bushes. The speed ratio of the tandem drive is seven to one. It is rated at 30 miles maximum speed. The machine is entirely controlled by the front rider, the rear seat being intended for a lady, a guard being provided over the driving belt.

At the Brighthouse Police Court, Edward Farrar, of Halifax, was summoned for not giving audible warning when riding a motor-bicycle in the streets of Brighthouse. Instead of appearing the defendant had sent a registered letter to the Bench, in which he stated that the noise caused by the explosions of his motor was, in his opinion, quite sufficient warning. It was stated that the legal requirement was warning by "bell, horn, or otherwise." The magistrates held that the noise of motor explosions could not be considered sufficient warning, and ordered Farrar to pay a fine of 5s. and 8s. 6d. costs.

THE German Motor Cyclists' Union is organising a 1,000 kilometre motor-cycle reliability trial on the lines of that recently held by the Auto-Cycle Club. It was at first proposed to hold it at the end of the present month, but it has been decided to postpone the event till next spring.

THE Criterium du Quart de Litre for motor-cycles organised by "L'Auto" is now in progress at the Parc des Princes track. No less than 87 entries have been received for the competition, which will come to an end on Sunday, the 20th inst.

THE "X'l all" is the name of a new belt hook for motor-bicycles which has lately been put on the market by the Eclipse Motor and Cycle Company, of Birmingham. The hook is so



clearly shown in the accompanying illustrations that no description is necessary. It may be mentioned, however, that no holes are required to be made in the belt, and that the joint is claimed to run smoothly over the pulley.

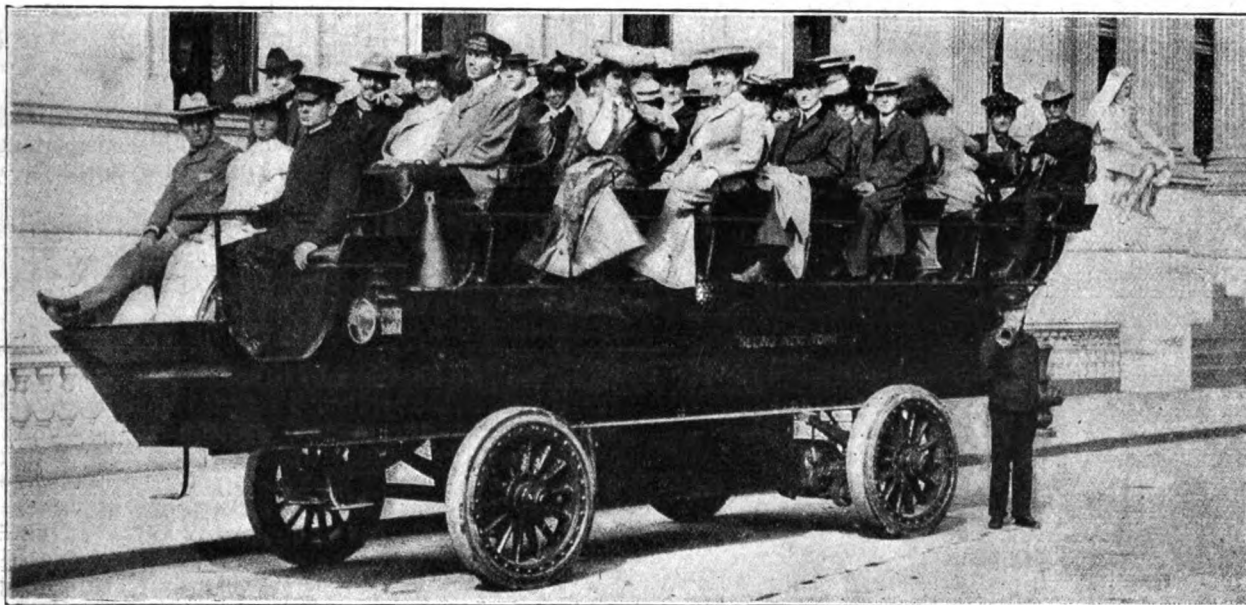
SOME USEFUL NOTES.

It will, of course, take some time and much careful thought to determine which particular car will best fulfil the requirements of the purchaser. This once decided, if the manufacturer issues an instruction book—and many now do—a copy should be procured, and by the aid of its illustrations, diagrams and descriptions a careful study made before the vehicle arrives. When the new car is received a closer study of its construction may be made. Do not take anything for granted. Go into every detail. Observe particularly the action of the control levers, the steering mechanism and brakes. If a demonstrator or instructor is in attendance get him to show you why a certain action produces a certain result. It is hardly sufficient that you should know merely that it does do it. Find out why. Thus you will soon be able to judge cause from result, and this knowledge is the most valuable of all.

HAVING satisfied himself that the mechanical details are all in perfect adjustment, it is necessary that the new owner should attend to the lubricating system with the utmost care. Heavy cars are usually fitted with oil and grease reservoirs that supply

crank case supplied, in this event, always with a reasonably fresh charge, the old oil being drained off before the new is poured in. A small cock is provided at the bottom of the case for this purpose, and care must be taken to always close this cock before renewing the supply. This caution, remarks the "Automobile," may seem superfluous, but forgetting to close the cock is, nevertheless, a very common error. Never fill the crank chamber too full; otherwise the oil will work its way into the combustion chamber, fouling the sparking plug, gumming the valves and causing much unnecessary trouble.

In general it may be said that nothing should be taken for granted in the lubrication of a motor-car. Everything should be done to make the work of lubrication as easy as possible by having every convenience at hand. The plugs and cocks designed for the drawing off of the spent oil from crank cases should be carefully looked after to see that they cannot drop out while running. If an undue amount of oil drips from any particular point of the vehicle, it may indicate either that the supply is excessive, that means for retaining it are not proper, or that the oil is too thin. Thick oil on the whole gives little trouble from working out of bearings, especially when everything



The Novel Electrical Vehicle used in New York for Sight-Seeing Purposes. (See issue August 29.)

[The Automobile.]

the various bearings by means of feed tubes. Small cars, as a rule, are equipped with individual oil and grease cups. The covers of these should be removed and the cups filled if empty, as is frequently the case on a new car. The cylinder cup must be filled with a high fire-test mineral gas engine cylinder oil and not a vegetable or animal oil. There are a number of special oils on the market, and it is a good plan to buy a gallon or five gallon can for reserve, carrying on the vehicle a quart or so for immediate requirements. Keep this can always well filled. Remember that oil is just as essential as petrol.

For the bearings any good machinery oil is suitable, and it is well to have a reserve supply on hand, carrying a good-sized full oil can with you when on the road. An oil can with a long, slender curved spout will be found very useful. If no suitable carrying space is available, the spout may be unscrewed and a cork fitted to the can. If grease cups are provided it is an easy matter to procure a supply of suitable grease, which should not be too thick to feed the bearings properly. In many instances petrol motors are lubricated on what is known as the "splash" principle. That is to say, the crank chamber is partially filled with oil which is thrown into the cylinder by the action of the crank. It is very necessary to keep the

is worn. The "wiping off" of a car is a duty which no one having the instincts of a mechanic will shirk, as the dust which an excess of oil on the outside surfaces of the wearing parts is constantly collecting proves very injurious to the mechanism.

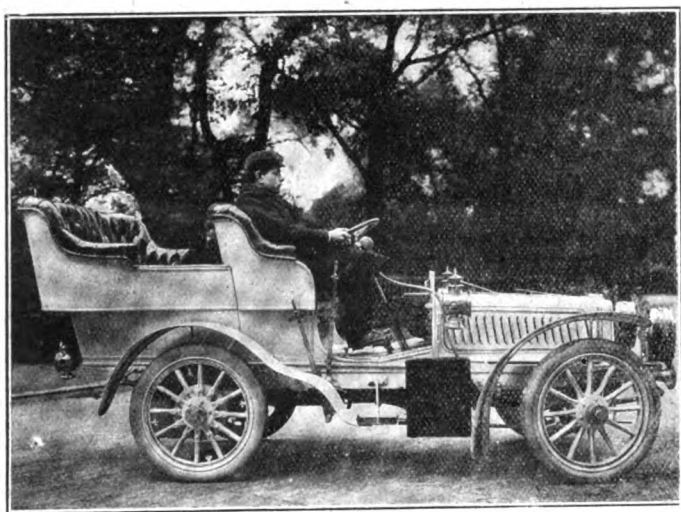
In their useful handbook, the Continental Tyre Co. point out that care should be taken to have the tyres always fully inflated and the nuts properly tightened, so as to give water no chance of getting into the tyre, otherwise the cover may get prematurely destroyed and have to be replaced by a new one. The chief cause of water getting into the tyre and causing its canvas backing to rot is slackness of the tyre and insufficiently tightened nuts. When the tyre is not sufficiently inflated, the edges of the cover do not fill out the grooves of the rim, thus leaving sufficient free space for water to get in. The same applies also to loose nuts. Between the rim and the nuts is a little leather washer intended to close the hole in a watertight manner. If the nut is loose, it does not press the washer tightly against the rim, and water finds its way in at the sides.

THE Lanchester Engine Co., Ltd., have facilities for a large output of their new 16-h.p. cars as well as the 10-h.p. vehicle.

HINTS ON CHOOSING A SECOND-HAND CAR.

THERE is no doubt that the intending motorist to whom economy is an object will often be well advised in preferring to purchase a second-hand car of good make rather than a new vehicle of lower price; due caution and circumspection in concluding the bargain being understood. Where the assistance of an unbiassed expert can be called in the purchaser may have an easy mind; in default of this a *resume* of some of the chief points on which a buyer should satisfy himself may prove useful.

A trial trip will usually be demanded and accorded, which will give the opportunity for much valuable observation as to the condition of the car. Excessive noise from the gearing betrays wear, and the buyer should insist on examining this; a car need not necessarily be rejected on this account, as it is often as well for the novice to learn on the old and worn gearing, and put in a new one when *au fait* with it; the cost of which, probably between £12 and £20, he will of course have to consider in valuing the car. It should be noted, however, that some cars wear out their gears fast, relatively to the other moving parts of the vehicle; or they may have been unduly worn by unskilful driving; while in other cars with very ample gear dimensions any serious deterioration thereof may indicate an amount of hard work that has affected the car throughout.



Mr. C. A. R. Langley, son of the ex-Engineer-in-Chief of the Midland Railway, on his 16-h.p. Deauville Car.

In live-axle cars, the state of the axle requires attention, and if the purchaser cannot have it dissected for his benefit, as is most likely, it should be jacked up, and any looseness in the bearings tested by shaking the back wheels. If they are ball bearings, excessive looseness may be taken up, unless bad enough to require new cups and cones, but the re-bushing of plain bearings may be a more expensive job. Next, one of the back wheels may be blocked and the other rotated, at the same time grasping the propeller-shaft. This will indicate roughly the extent to which the bevel gear and the differential is worn, and the shake in the universal joints of the shaft can be felt at the same time, as also in the shaft of the bevel wheel where it enters the differential box.

It is seldom indeed that the back view of a live-axle car is seen without the eye being offended by the "splaying" of the hind wheels. Much of this is due to wear in the axle bearings, but in some light cars there is an evident sag in the axle sleeve. Where this is the case, one would be inclined to give that car a wide berth, as the increased and unnecessary side strain on badly splayed wheels is obviously very great, apart from the weak construction thereby indicated.

The running of the engine will usually speak for itself; any knock or shake will make itself audible, especially if, with a two

or more cylinder engine, it is run first on one cylinder only, then on another, by disconnecting one or other high-tension wire. This test will often detect a looseness in the connecting-rod or crankshaft bearings that otherwise escapes notice. Here, too, it may be worth while mentioning the use of a length of rubber tube (used as a stethoscope) to locate any unusual noise in machinery that cannot be "spotted" otherwise: one end being applied to the car, and the other moved about over the suspected sources of the noise. Ignition troubles, or difficult starting should not impress a purchaser so unfavourably as they generally do: a secondhand car often wants re-wiring, which is not an expensive job; while a car may run ideally on its trial trip, and yet be in the latter state of the deacon's famous "one-hoss shay." Neither should paint and upholstery lead the unwary astray: they are cheap compared to engineer's work.

Looseness in the steering should be looked for, especially in the steering pivots, which usually having no adjustment will give some indication of the wear the car has had, unless, of course, it is so old that they have had to be replaced or re-bushed. The amount of play in the steering wheel is easily tested and located, whether in the worm or other gear at base of steering post (where it is often adjustable) or in other joints of the connections. A car has one notable advantage over a horse, that the unwary purchaser is hardly likely to be saddled with a bargain that is absolutely worthless; but he will do well to consider carefully the probable necessary replacements his car may require, assuming it to be generally in fair order. It is impossible to enumerate all possible requirements, but among them may be mentioned, commencing with the important ones—

New gear. (If one speed only worn, can it be replaced without entirely replacing gear?)

New pump. Those of cogwheel type usually wear out easily.

Tyres. How much life may be expected of them?

Chains. Ditto.

Re-leathering or lining brakes.

Re-wiring car.

A few final remarks may be added, some of which may seem almost supererogatory, though founded on actual cases that have come under the writer's notice. Secondhand cars of little-known makers should be carefully avoided. They may have been experiments, or failures. With the productions of the few really first-class and old-established makers, the purchaser will be generally fairly safe, but let him satisfy himself of the date and type of the car. Occasionally an early and an improved pattern have had little apparent difference in appearance, at least to the novice, who has been "had" thereby. There are a large number of good, though not front-rank firms, who turn out satisfactory cars at the present time. It does not follow, however, that their earlier productions would be worth purchasing; in fact, in many cases they were rubbish. Light and cheap cars are to be eschewed unless they are nearly new; on the other hand, some of the old and slow cars, both cheap and otherwise, may do very good service in the hands of purchasers who want something at a very low price, and do not demand speed. Good value from a practical point of view may thus often be obtained from an obsolete pattern of car; but it is advisable to find out what are the chances of getting any necessary replacements. If these have to be specially made they are apt to be expensive, though, on the other hand, makers sometimes charge absurdly high prices for small parts—a most unwise policy on their part.

In conclusion, it may be said that the purchase of a good make of second-hand car that has had, say, less than a year's wear in good hands is a wise proceeding for a novice, but he must expect to pay a fair price for it; the search for a "real bargain" needs to be conducted with more circumspection, and not without a fair amount of technical knowledge.

STEPS are being taken to form a motor club for Oldham and district. Those interested in the scheme should communicate to Mr. T. W. Hilton, Bath Street, Oldham.

HERE AND THERE.

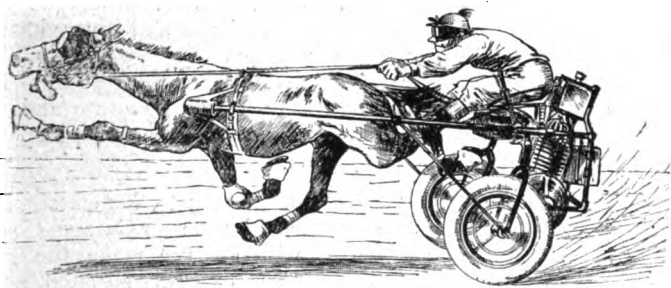
TO-DAY (Saturday) the Sheffield Automobile Club will hold a run to Baslow.

DR. LANE-JOYNT, the well-known Dublin motorist, has just purchased a 20-h.p. M.M.C. car.

THE Automobile Club of Toronto, Canada, has established a garage for the use of its members.

THE Post Office is employing a motor-van for the delivery of parcels from Sunderland to Newcastle.

A NEW use for motor-cars has been found in America, their value as pacing machines for racehorses having, it is said, been demonstrated at Dayton, O., recently, when a famous trotter,



The Trotting Horse of the Future. *(Das Schnauferl, Munich.)*

known as Cresceus, covered a mile in 2 min. 8 3-4 sec., breaking the record for a half-mile track. The owner of the horse recently purchased a White steam car and utilised the vehicle for pacing purposes with the above mentioned result.

THE International Motor Company have just sent out two "Portland" cars to Senor Juan L. Trillia, Buenos Ayres, Argentine Republic.

AMONG the papers to be read during the forthcoming session of the Birmingham Association of Mechanical Engineers is one on motor-cars.

THE exports of automobiles and parts from the United States during July amounted to £31,947, as against £26,614 for the same month of 1902.

The Hon. Adrian Cave has been appointed a lieutenant in the Motor Volunteer Corps, and Mr. H. H. Paynter has been promoted to a lieutenancy.

KING EDWARD VII. passed through Epping recently on a motor-car. He went as far as Thornwood (two miles beyond the town), which is at the northern extremity of Epping Forest.

AN ingenious leaflet on the Horbick car, introducing some forty quotations from Shakespeare's plays, has been issued by Messrs. Horsfall and Bickham, of Pendleton, Manchester.

THE Hythe Town Council is seeking an interview with the Town Council of Folkestone with a view to adjusting differences that have arisen with regard to the licensing of motor-car drivers.

THE Darlington Rural Council has unanimously decided to memorialise the Local Government Board with the suggestion that the result of the taxation of motor-cars should be given to the local revenue.

As a result of careful investigation of the relative cost, it has been decided by the Board of Public Works of Saginaw, Mich., to substitute a motor-car for the horse and trap used by their superintendent.

MESSRS. OLIVER, CLARK AND COMPANY have taken larger premises at St. Mark's Road, Notting Hill, W., where they have established workshops, with facilities for repairing motor-cars, charging batteries, etc.

TONI TYRES, LIMITED, is the title of a new company registered with a capital of £10,000, to carry on the business of

manufacturers of pneumatic and other tyres, and to adopt an agreement with Messrs. F. Toni and J. Gill.

THE Automobile Club of America is organising an autumn club run or tour, starting on the 25th inst., and finishing on the 30th inst. Hartford, Boston, Springfield, and Poughkeepsie, N.Y., will be visited. The total journey will be 527 miles, and already thirty members have enrolled for the trip.

FOLLOWING the example of the Boston Y.M.C.A., the Minneapolis Young Men's Christian Association is organising a course in petrol motor engineering as applied to automobiles and launches. The course will include the study of motors of various types, transmission gears, carburettors, ignition apparatus, etc.

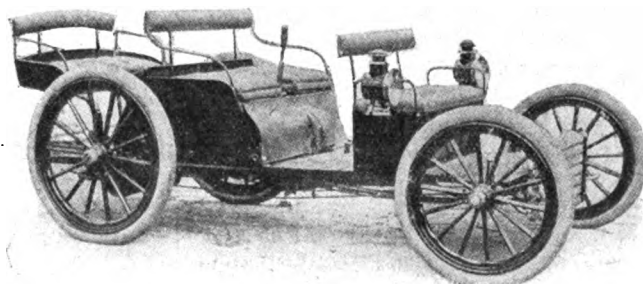
THE Empire Trotting Club, of New York, is arranging a further motor race meeting. The secretary of the Club is reported to have written Jenatzy, Gabriel and Jarrott offering expenses, a share of the gate receipts and a liberal guarantee for a race with Barney Oldfield as the chief attraction of the meeting.

WHAT may be considered an achievement in the art of burglary was accomplished by some men who entered the house of Mr. H. J. Ferry, 5, Streatley Road, Willesden, and, among other things, stole a 4-h.p. motor-car from an outhouse. Their performance is, however, rivalled by those who entered the motor-car works, Ridgway Old Chapel, Towcester, and drove off in an automobile.

M. COMBES, the President of the French Parliament and the Minister of the Interior, has just taken a step which will certainly earn for him the gratitude of all automobilists. He has sent a circular to prefects throughout France instructing them to annul all Mayoral ordinances which limit the speed of automobiles unless they also apply them to every other form of vehicle. M. Combes' circular is dictated by common sense and is in accordance with the doctrine of equality, which is one of the basic principles of the republic.

OWING to increased business, the General Motor-Car Co., Limited, of Norbury, S.W., have taken extensive premises covering over two acres of ground, and also a large enclosed trial ground, situated at Common Side East, Mitcham. The new works have been fitted up with a plant of the most modern machinery, so that they are in a position to cope with any make or size of car. The show room and also the garage and repair shop, at London Road, Norbury, will still be maintained.

THE accompanying illustration shows a novel Duryea car recently supplied to a Japanese gentleman. It has accommodation for six persons, and weighs 1,000 pounds. It is equipped with



a 10 to 12-h.p. triple-cylinder engine, the long wheel base and low centre of gravity being features of interest.

A NEW electric racing car named the "Torpedo Kid" has recently been completed by the Baker Motor Vehicle Company, of Chicago. It is designed on the same lines as the "Torpedo," which attracted much attention last year, but is much smaller. It weighs only about 700 pounds and is fitted with the standard Baker motor and twelve cells. The wheels are fitted with two-inch tyres and wind shields. The steering apparatus has been improved and the car is somewhat longer than the old Torpedo. The body differs in shape and is designed to offer the slightest possible resistance to the wind.

SOME trials are about to be made in Berlin with the sprinkling of petroleum on the roads with the view of laying the dust. To acquire the business of motor accessory manufacturers, etc., carried on by Mr. F. S. O'Brien at Coventry, the firm of Edward O'Brien, Ltd., has been registered with a capital of £7,000.

AN "Old Home Week" automobile parade was held at Bridgeport, Conn., U.S.A., on [the 31st ult. As an automobile



The Locomobile Band Wagon.

parade the event was unusually interesting, owing to the large number of automobiles, decorations, etc., but the principal feature by far was the Locomobile band wagon, which carried a band of twelve pieces, together with two attendants. The band wagon, of which we reproduce a photo herewith, was built up on an ordinary 16-h.p. Locomobile petrol chassis, the entire outfit weighing nearly three tons.

It may be interesting to mention that the two illustrations we gave in our issue of the 5th inst. showing the multitudinous details of a small motor-car represented those of the Baby Peugeot.

DR. H. NELSON JACKSON has accepted an invitation to lecture before the Automobile Club of America next winter on his experiences during the long journey from San Francisco to New York in a Winton car.

MESSRS. DOCKER BROS., of Birmingham, are devoting their attention to a special method of preparing a quick-drying paint and varnish for motor-car bodies. Several cars in the Reliability Trials are, we understand, painted and varnished with their latest preparation.

SAINSBURY'S ANTI-SKIDDERS, LTD., is the title of a company formed with a capital of £10,000, to acquire of Mr. W. D. Sainsbury an invention for a skid-preventing device for the rubber tyred wheels of automobiles, etc. The public are now being invited to subscribe capital for the development of this device, of which several well-known experts have reported very favourably.

MR. C. GLIDDEN is not the only motorist enjoying an Arctic circle trip, a similar tour being at present made by Mr. H. Thobro, secretary of the Bloomington Automobile Club, Bloomington, Ill., U.S.A. He started from Helsingborg, Sweden, and, choosing the west side of Norway instead of the east side of Sweden as his route, has already reached Namsos, a little town on the Fjorden, Norway, 1½ degrees south of the Arctic circle.

MESSRS. H. ANDREW AND COMPANY, Yealmpton, near Plymouth, have sent us a small sample box of their new Simplex

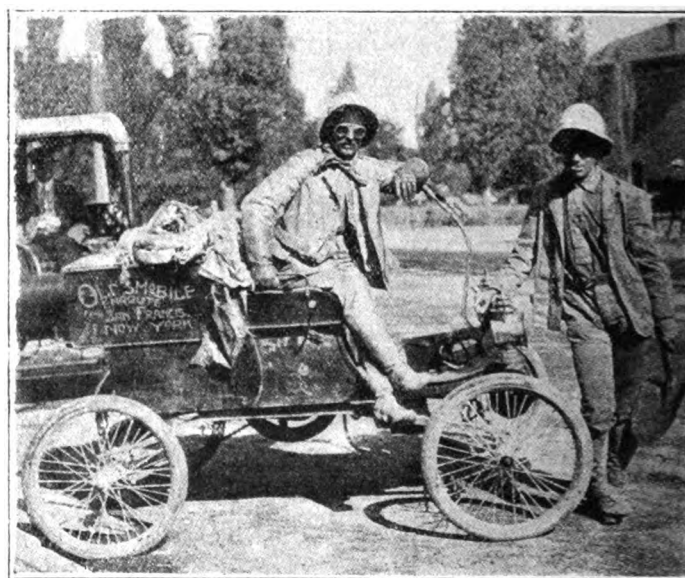
ignition wire terminals, which take the form of large brass eyelets. The end of the wire being bared for about ¼ inch, the strands are halved and placed round the eyelet. It is then clinched with a hammer, making a very neat end to the wire. The terminals or eyelets are put up in small boxes and sold at a popular price.

ACCORDING to a New York telegram, the motor track race meeting at Detroit, on the 10th inst., was marred by a fatal accident owing to the front tyre of the Winton racer driven by Barney Oldfield bursting. The car instantly swerved, killing a spectator standing by, and then flew off the embankment. It turned over, and landed a perfect wreck. Marvellous to relate, Oldfield escaped with no more than three ribs broken.

MR. AND MRS. RICHARD BILLINGS, who went to Ireland from New York, for the Gordon Bennett Race, prolonged their stay in order to make a tour of England, and covered a total of over 1,300 miles, using a "Locomobile" weighing about 3,000 lbs., shod with Fisk detachable tyres, 28 by 3 in. They covered the entire distance without a single puncture and with no mechanical troubles whatever, the tyres being pumped up but once during the whole journey.

MESSRS. NEWTON AND CO., of Deansgate, Manchester, who have taken over the business of the Manchester Garage Co., 35, King Street West, Manchester, will in future make the latter premises their head depot. They are centrally situated, having large showrooms and workshops on the ground floor, together with washing and storage accommodation for fifty cars. Repairs and hiring are to be made a speciality, while a large stock of tyres, petrol, sundries, and motor clothing will be kept.

THE most powerful of automobiles will compete in the race meeting which is to be held on the Washington Park track, Chicago, on the 26th inst., under the auspices of the Chicago Automobile Club. The contestants will be Barney Oldfield, who will ride Owen's Gordon Bennett Winton; Mooers with his Gordon Bennett Peerless; Carl Fisher and Earl Kiser, the latter two each driving new 80-h.p. cars known as Mohawks.

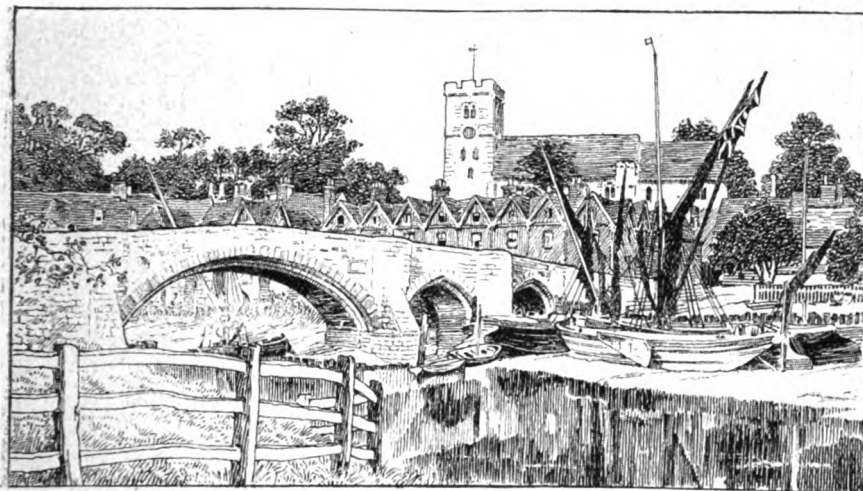


The Oldsmobile Car at present on a Journey from San Francisco to New York.

The famous "999" car, in which Barney Oldfield made his mile in 55 4-5 seconds, will also be driven by Cooper. Every car in the race will be of not less than 80-h.p. The two new Mohawk racers have four horizontal cylinders 7 in. dia. by 7 in. stroke and chain transmission, more than three-quarters of the length of the chassis being taken up by the engine and cooling mechanism.

NEW GUIDE BOOKS.

A USEFUL series of Guide Books is that issued by Messrs. Methuen and Co., in a size convenient to the pocket, and of a character likely to be acceptable to touring motorists. The volumes issued include Cornwall, the Malvern country, Surrey, Oxford, Hertfordshire, Kent, and the Shakespeare country, and as all are based on the same excellent plan,



The Medway at Aylesford.

a review of that concerned with the county that excited the admiration of Michael Drayton—

"O famous Kent, quoth she,

What county hath this isle that can compare with thee?"

will be of service as well as interest.

Fifty well-written pages give a succinct account of the physical features, communications, climate, industries, and other information helpful to the traveller by road. One of the most interesting roadways in the county is the Pilgrims' Way, running along the southern slope of the North Downs. From the extreme ends of Kent runs Watling Street, connecting Dover to London by way of Canterbury, Faversham, Rochester, Dartford, and Greenwich. Generally the road surfaces are excellent, the flint from the chalk in some districts, and Kentish rag in others, being used as metal.

The major portion of the work, comprising about two hundred pages, is devoted to brief descriptions, in alphabetical order, of the various places in the county, the whole being a tribute to the local knowledge and the literary skill of Mr. George Clinch, F.G.S. Mr. F. D. Bedford's illustrations, of which we give two typical examples, deserve more than a passing reference, did space permit. Aylesford has a charming 14th century stone bridge over the Medway, and is situated about three miles to the north-west of Maidstone. Its most notable relic of past ages are the megalithic remains at Kit's Coty House, on the side of the chalk hills. One of the most beautiful Kentish villages is Chiddingstone, near Tonbridge, its picturesque half timber houses being noteworthy—even in such a delightful county. Messrs. Methuen's guides are a model of lucidity, and their covers are as full of sound digestive matter as an egg-shell.

Another excellent literary guide comes from Messrs. George Newnes, Ltd., in the "Shakespeare Country Illustrated," which is made all the more widely acceptable by the maps and appendices which illustrate the Washington and the Franklin countries. The letterpress is by Mr. John Leyland, and reveals a close knowledge of the district about Stratford-on-Avon. The illustrations

are not only finely produced but carefully selected, and Mr. Leyland has taken a broad view of his work as guide to this interesting district, for Warwick, Kenilworth, Stoneleigh, and the Shakespeare villages are all included in the survey. Of special interest to American visitors will be the chapters devoted to Sulgrave, Ecton, and other places associated with Washington and Franklin, often visited from Stratford-on-Avon.

An interesting record is that of the Cinque Ports, the towns at the south-eastern corner of which, in years gone by, played an important part in the history of the country. Now they serve as holiday resorts for jaded citizens, as the termini for some of the days' trials of the Automobile Club, and as subject matter for authors like Mr. J. Bavington Jones, whose interesting work has just been published at the office of the "Dover Express." The first part of this well-written volume is historical, the second descriptive, while the illustrations of the ancient towns remind us of many modern aspects. Altogether the book is one likely to be much in demand by visitors to any of the places whose chronicles are set forth therein.

A guide to the towns and pleasure resorts upon the Lancashire and Yorkshire Railway system has just been issued by the company, the editor being Mr. F. Goldring. The company was incorporated in 1874, and progress has been conspicuous since then, the operations of the company extending from Southport to Hull. Among the health resorts tapped by the line are Lytham, Blackpool, Scarborough, and Harrogate, and motorists in any of those districts will find the L. & Y. willing to deal reasonably and carefully with their cars.

Printed in the French language is a capital guide to Hastings published by a local association which is seeking to attract continental visitors to that pleasant town. Historically interesting to the people of France, there is no reason why the publishers should not be successful in influencing many people from abroad to stay in the locality of Hastings. The little volume is admirably illustrated and the enterprise that has led to its being issued in the French language will probably be imitated by other resorts.

THE first 1904 catalogue of motor accessories to reach us is



In Chiddingstone Village

that of Messrs. Markt and Company; it gives particulars of their various specialities, including Veeder odometers, speedometers, gradometers, bells, horns, oilers, jacks, lamps, etc.

SINCE their excellent series of performances during the Irish Fortnight Duryea cars seem fairly to have "caught on" in Society circles. Many fresh orders have been placed with the company, amongst the latest purchasers of Duryea cars being the Earl of Northampton and Sir Charles Cameron.

CORRESPONDENCE.

THE LIFE OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is now close on seven years since the Act of 1896, by which the red flag was abolished, came into operation, and as the number of cars in use has been steadily increasing since that time, much information must now be available as to the life of a motor-car, a question of great interest to many who, like myself, are hesitating ere investing in an automobile until it is possible to get some idea as to how long the vehicle will last in actual service, or how long it may reasonably be expected to be capable of doing efficient work. The more wealthy class of motorists are able to dispose of their cars in order to go in for more up-to-date vehicles, as these make their appearance, just as a certain class of cyclists make a practice of getting a new machine each season, but there is a large and growing section of automobilists who have not the means to be thus continually changing their vehicles, and to whom the life of a motor-car is consequently a vital question. May I, therefore, suggest that any motorist who has had his car for a number of years would be doing a service to many would-be owners by sending an account of his experience in the way of cost of upkeep, etc.—Yours truly,

A. G. L.

AN "ACT" OF DISCOURAGEMENT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read the article by my old friend Mr. Norman Macdonald in your valuable paper for last week.

The whole article might be justifiable if it were based upon facts. The foundations, however, are imaginary and never did exist; therefore the superstructure must needs be incorrect and becomes fiction.

My friend Mr. Macdonald appears to be unaware of the existence of the Legislative Committee, or ignores it. He certainly is unaware of the doings of that committee, who have spent a great deal of time, and it is hardly gracious to suggest that such men as Sir Francis Jeune, Sir Hickman Bacon, Earl Russell, Mr. Roger Wallace, K.C., Colonel Crompton, C.B., and others who have worked so hard on this committee, have done nothing.—Yours truly,

T. W. STAPLEE FIRTH.

SPEED INDICATORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Though there are speed indicators on the market, I am afraid your correspondent "M. P." will not get exactly what he requires. It may be some consolation to him to know that the very thing he wants, an automatic speed indicator, is in existence, and is only waiting for a reliable firm with the necessary machinery to take it in hand; there is, therefore, every prospect before long of his wants being supplied.—Yours truly,

A. L.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to "M. P." I think Dr. Winter's speed indicator would suit him perfectly. It has a large clear dial registering up to 60 m.p.h. I have had mine 19 months. The cyclometer with which it is fitted is most useful in keeping a record of the running of the car as regards tyres, repairs, etc. Its position is on the dash-board, right under the eye of the driver.—Yours truly,

A. C. H.

16 FEET ROADS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to the closing of 16 ft. roads for motor traffic, it seems that (in Scotland at least) roads under 16 ft. wide are a contravention of the statute, and I would suggest that the Motor Union or some other body, or perhaps the writer of the article "An 'Act' of Discouragement," in your last issue, should look into this matter. My authority for this statement is the report of a meeting of a County Council, at which the reply of the Lord Advocate to a query of the council was read. The query had evidently something to do with the width of certain roads, and was to the effect that the statutory width was something like 20 ft., which seemingly staggered the worthy members, who passed a resolution to use every endeavour to get this limit altered. This happened some months ago, and before there was any word of a 16-foot limit, so that my memory may have played me false, but I think it is worth looking into.

Most of the old "statute labour" roads were much wider than 16 feet originally, but a great many of them have been utilised by farmers and others for depositing all manner of rubbish at the sides, such as stones carted off their fields, "compost heaps," etc.

I think that the whole of the "Acts" relating to roads might be looked into, and a summary might be published, so that motorists would know what users of the roads were entitled to.—Yours truly,

MOTOR CYCLIST.

PERPLEXED writes: "I should be glad to know if, in addition to the two guinea license I always pay for my car, I should be required to

have my car registered and pay another twenty shillings; also, being my own driver, whether I should have to have a driver's license to the tune of five shillings more. [The new registration and drivers' licence charges are undoubtedly an addition to the ordinary Inland Revenue licence.—ED. M. C. J.]

AUTOMOBILISM AT THE BRITISH ASSOCIATION.

MR. CHARLES HAWKSLEY, the President of the Engineers' Section of the British Association, which has been holding its meetings at Southport, dealt very fully with automobilism in his presidential address on Friday last.

MOTOR-CARS ON COMMON ROADS.

At the beginning of the 19th century, he said, the population of the United Kingdom was nearly 15½ millions, at the beginning of the 20th nearly 41½ millions. Then there was not a mile of railway in the United Kingdom; now there were about 22,000 miles. Palmer in 1784 introduced mail coaches travelling from six to seven miles an hour on the main roads. In 1801 the mail coach from London to Holyhead occupied nearly 46 hours on the journey, and the mails reached Dublin on the third day after leaving London. Speed in locomotion appeared to be now the first consideration. The first practical steam carriage was used by Trevithick in the year 1802. Mr. E. R. Calthrop, M.Inst.C.E., was opposed to any weight restriction, but it was to be remembered that the momentum of heavily laden wagons drawn by a powerful traction engine at the maximum speed of five miles an hour, was very great, and caused uncomfortable vibration in the houses along main thoroughfares; on the other hand, light traction engines were now being successfully used, drawing from four to five tons of market produce through the streets of London without causing undue vibration, and at a cost said to be about one-half that of horse traction.

The use of motor-driven vehicles for road traffic was so intimately associated with improvements in prime movers that it was interesting to be reminded of the opinion expressed more than twenty years ago by Sir Frederick Bramwell, who in 1881 said:—"However much the Mechanical Section of the British Association may to-day contemplate with regret even the mere distant prospect of the steam-engine becoming a thing of the past, I very much doubt whether those who meet here fifty years hence will then speak of that motor except in the character of a curiosity to be found in a museum." To keep alive the interest of the Association in this subject, Sir Frederick Bramwell had kindly offered, and the council had accepted, the sum of £50 for investment in 2½ per cent. Self-accumulative Consols, the resulting sum to be paid as an honorarium to a gentleman to be selected by the council to prepare a paper having Sir Frederick's utterances in 1881 as a sort of text, and dealing with the whole question of the prime movers of 1931, and especially with the then relation between steam-engines and internal-combustion engines.

A paper was read by Mr. T. Clarkson on

STEAM CAR DESIGN.

He said that one reason for the popularity of the internal-combustion engine was the large number of flimsy steam cars of foreign manufacture that had been put upon the market. These cars, although running with the characteristic smoothness of steam, were otherwise very inferior in design and construction. In spite of the unsatisfactory nature of their construction, it was satisfactory, however, to know that out of 4,000 cars supplied to the public there had not been a single case recorded of a boiler explosion. Commercial automobilism covered an extremely wide field of usefulness, ranging from a light parcel delivery motor-cycle, or voiturette, to the heavy six-ton lorry. He looked upon an intermediate class, from about half a ton to two tons, as likely to be sufficiently large to justify the manufacturer in focussing his energies upon this one class. He claimed that the steam engine, as opposed to the internal-combustion motor, would work longer without attention or repairs. The steam engine needed less skill in operating, and possessed a larger reserve of power for emergencies. No complicated and expensive change speed gear was required, and with liquid fuel the dirty work of stoking was avoided; in addition to these advantages, the smoke trouble was removed. Beyond this, also, an efficient condenser had overcome the defect of exhaust steam being delivered to the atmosphere. The production of a good boiler has been found to rest almost entirely on the development of a good oil burner. Such an apparatus should be adapted to use the cheaper grades of oil which were everywhere obtainable and were safe to handle. With the use of petrol or gasoline the problem of burning was far simpler than when the fuel was kerosene or paraffin. The latter, however, was only one-third the cost per gallon of the former, it had a higher calorific value, it was safer to handle and store, and it could be obtained everywhere. Thick black oil could be burned with a blast of air or steam, but was liable to smoke occasionally, and starting was difficult. Paraffin had been found to work fairly well in an ordinary internal combustion motor for stationary purposes, but for automobiles it had not been so successful. It could, however, be burnt under a steam generator, either by a wick or on the spray system, so as to produce a perfectly unobjectionable product. Vapourizing, however, was the best method of working the oil mixing with the air as in a Bunsen burner. The great difficulty to get over was "lighting back," a defect which consisted of the flame passing into the mixing chamber. The best method of prevention hitherto tried consisted of making the mixture of oil vapour and air issue from the burner with velocity in excess of that of the propagation

of flame. To accomplish this it was necessary to maintain the velocity of efflux, but at the same time it was required that the burner should be flexible in capacity. These conditions needed a variation of the orifice of the burner in direct proportion to the amount of fuel consumed. When the burner was at full power the orifice should be opened to the maximum, and when the size of the flame was reduced the area of the openings should also be reduced proportionately in order to maintain the velocity of the efflux. The upper part of the burner would necessarily get strongly heated, and the arrangement for varying the area should, therefore, be as simple as possible. He had adopted a mushroom valve consisting of a circular disc carried upon a vertical stem. This would be raised or lowered to give a greater or less area for the escape of the fuel mixture. For the control of the paraffin oil vapour he used either a cone or a wedge introduced from the front into the jet nozzle. The cone was used at first and was moved in and out simultaneously with the lowering or raising of the mushroom valve. But it was found that the variation of the areas of the jet orifice and the burner orifice were not in the same ratio, the former varying in geometrical progression and the latter in arithmetical progression, the burner orifice thus varying in one dimension and the jet orifice in two. The jet orifice was, therefore, made rectangular, and this modification entirely got over the difficulty of "lighting back." He had tried various boilers, including the fire-tube, water-tube, the flash and semi-flash types. Finally he selected the first named as being superior in regard to general service and trustworthiness. Of the other types, he considered the semi-flash the best, when the size of the flame was controlled by the temperature of the steam. The flash boiler would stand over-heating, but its reserve of power was small; moreover, it needed higher skill for its management. With the fire-tube boiler, the risk of over-heating was practically eliminated when a good automatic water feed and burner control were used. A trustworthy automatic appliance for controlling the fuel and water supply was one of the most important features in a steam-driven car, and Mr. Clarkson devoted a considerable part of his paper to this question, some of the arrangements he described being of a novel and highly ingenious character. Superheating of the steam, he considered one of the chief means by which the steam car was able to compete with the petrol car. Steam at 650 deg. or 700 deg. Fahr. would work more economically, and would, therefore, enable the whole construction of the car to be lightened. Special attention, however, had to be paid to the cylinder packing. Circular valves were found to give good results.

Mr. Clarkson concluded his paper with a reference to the speed question. In the discussion which followed, Lt.-Col. Crompton said in the internal combustion engine an odour was caused by a part of the explosive charge being cooled on the metallic surfaces of the engine, and therefore not burnt. With perfect combustion there would be no odour from the products. In this respect steam had the advantage.

Mr. Sennett referred to the enormous expense of lubrication involved in the use of a flash-boiler. In some cases it approached in cost the expense of the fuel.

Professor Hudson Beare, as an old recorder of the section, thought that the paper was one of the most valuable that had been read for many years. The dust question could not be settled by improved road construction, and he gave instances of dust in large volumes being raised by low-bodied cars running on very good roads. Mr. W. W. Beaumont having spoken,

Mr. Clarkson, in reply, referred to the question of weight of cars. He was of opinion that often too much was done in the matter of lightening construction. Referring to details of construction, he objected to grease cups, as their replenishment, which was a dirty operation, might be put off. With a system of oil lubrication renewal of the lubricant was easy, and, as every bearing depended on one supply, it would not be likely to be neglected. Perkins metal for piston rings worked well with a mirror-like surface without lubrication, but had the disadvantage of being extremely brittle. In regard to chain drive, he had tried to do without the use of chains, but had come to the conclusion that that means of transmission was the best. He had increased the strength of the chains he used, not because he feared breakage, but in order to avoid stretching and the consequent loss of pitch. Chains were now used with a breaking load of $3\frac{1}{2}$ tons. In regard to connecting the engine direct to the axle, there was the drawback that road vibration would be transmitted to the crank shaft. The beauty of chain transmission was its flexibility.

STREET TRAFFIC.

Col. Crompton, R.E., read a paper "The Problem of Modern Street Traffic." The average speed of travel in large cities amounted to about five miles an hour. In order to quicken the enormous existing wheeled and walking traffic, the author advised the establishment of a department of the police to take charge of the street traffic. In order that a street might accommodate the maximum number of vehicles it was necessary that these should be driven in parallel lines as close to the kerb as possible. There would always remain a considerable difference in speed between wheeled vehicles, and it was necessary that the overtaking of vehicles should be carried on with the minimum waste of road surface. In a 40 ft. street it would be better to confine traffic in each direction close to the kerb, the remaining space being reserved entirely for overtaking and not to be encroached upon by opposing traffic. At three miles per hour, with an interval of 25 ft. between omnibuses, 16,473 passengers would be conveyed per hour, but at 12 miles per hour the number would be 65,892. On the other hand, with

an interval of 200 ft. between vehicles at three miles per hour, 2,050 passengers would be carried; at a speed of 12 miles per hour, with the same interval, 8,236 passengers would be conveyed. With motor omnibuses driven at 12 miles an hour at a 2.8 sec. time interval, nearly 33,000 passengers could be carried per hour. Such would be the result of introducing automobile omnibuses capable of accelerating up to 16 miles an hour, but running at a point to point speed of 12 miles an hour.

An automobile vehicle at twelve miles an hour could be pulled up in less space than a fully-loaded omnibus running at an average of seven miles an hour. Accelerating and controlling power was given in a high degree by the electric automobile, which Col. Crompton described as the vehicle of future town traffic. The steam-driven vehicle, however, had also the quality of control to some extent in common with the electrical vehicle. The petrol-driven vehicle was not so advantageous in this respect.

RESISTANCE OF ROAD VEHICLES TO TRACTION.

The report of the committee appointed to consider the question of the resistance of road vehicles to traction, of which Professor H. S. Hele-Shaw is secretary, was read. This described experiments made with various kinds of tyres on different descriptions of roadway and at varying velocities of travel. With iron tyres on a roadway paved with setts 6in. by 3in., having a regular but fairly rough surface, and with a 1in. gap between the joints, experiments were made with a lorry wheel 40in. in diameter having a 3in. iron tyre slightly rounded in section. The rate of increase of tractive effort diminished with the velocity. This suggestive fact was attributed to the circumstance that as the wheel travelled faster it had less time to fall into the little hollows in the roadway, merely skimming along the tops of ridges. With a load of 392lb. on the wheel, and at a speed of about $7\frac{1}{2}$ miles an hour, the tractive effort needed was about 21lb. to 22lb. This power increased until at about 13 $\frac{1}{2}$ miles per hour the tractive effort was a little over 26lb. Taking the highest curve in the diagram, which represented a load of about 952lb., it was shown that at about 8 $\frac{1}{2}$ miles per hour the tractive effort was about 38lb. to 39lb. The power acquired increased until at twelve miles per hour the tractive effort was 50lb. With the higher load, therefore, the curve was very much steeper than with the lower load. A wire-spoked wheel twenty-four inches in diameter, and having a 2 $\frac{1}{2}$ in. tyre, was tried on a level stretch of macadam road in fairly good condition, but slightly wet in places. With a load of 315lb., and a trifle over six miles an hour, the tractive effort was just under 20lb. Increase of speed brought a comparatively small addition to the effort needed to turn the wheel, for at about fifteen and a half miles per hour the tractive effort was registered at only about 2 lb. more, approximately 21 $\frac{1}{2}$ lb. With the heavier load the curve was steeper, for at 651 lb., and at about six and a quarter miles per hour, the tractive effort was about 37 lb., whilst at 15 $\frac{1}{2}$ miles per hour the tractive effort was about 41 lb. The difference between a light and heavy load was thus not so strongly emphasized as in the case of the iron tyre. The conclusion arrived at was that for heavy traffic wheels, tyres of more than about 9 in. in width had, in practice, little material value as tending to reduce road resistance or damage to the road surface. The theory was submitted that the supporting power of a road was limited by the cohesive friction of the road particles against each other. This supporting power-limit varied considerably according to the material and the moisture absorbed.

THE EMISSION OF STEAM.

MR. W. E. HELMAN-PIDSLEY, of the solicitor's department of the London County Council, appeared before Mr. Francis, at Lambeth, on behalf of the Council, to support two summonses against owners of light locomotives, the offence alleged being the emission of steam on public highways, which is forbidden by Section 3 of the Locomotives on Roads Act of 1865. In the first case, Mr. J. G. Miller, of Mitcham, was the defendant, the summons declaring that "the steam was allowed to attain a pressure which exceeded the limit fixed by the safety valve, so that steam was blown off." Police-constable 740 W stated that on June 25 a light locomotive belonging to the defendant was pulled up outside the Telegraph Inn, Brixton-hill, and stopped there for fifteen minutes, emitting steam the whole time. The defendant's driver urged that the steam was only just simmering from the safety valve. Mr. Francis ordered the defendant to pay a fine of 40s. and 23s. costs.

Messrs. Watney, Combe, Reid, and Company (Limited), of the Stag Brewery, Pimlico, were summoned for a similar offence in a side road at Brixton on July 23rd. Mr. Robinson, barrister, who defended, pointed out that there was no evidence that "the pressure exceeded the limit fixed by the safety valve." Moreover, the locomotive was so constructed as to come under the provisions of the Light Locomotives Act of 1896, and was thus exempt from the requirements of the Act of 1865. It was true that on the occasion referred to there was a slight emission of steam, but that was due to some grit having got under the valve. The pressure of steam was only 100 lb., whereas the valve was set at 175 lb. Mr. Helman-Pidsley contended that the case could not come under the Light Locomotives Act of 1896 unless the defendants could satisfy the court that the emission was due to an accidental or temporary cause. If a light locomotive emitted steam except from an accidental or temporary cause the case came under the Act of 1865, under which these proceedings were taken. After hearing some evidence Mr. Francis thought it would be sufficient if the defendants paid the costs of the proceedings—23s.

FURIOUS DRIVING CASES.

MOTOR-CARS.

COURT.	DEFENDANT.	ALLEGED SPEED M. P. H.	RESULT.
Shipston-on Stour	H. Tangye, Birmingham	30	£5, etc.
"	E. A. Munday, Ealing	25	£5, etc.
"	F. Hohler, J.P., Sunningwell	27	£5, etc.
"	A. Jacobs, Priors Lee, Salop	20	£5, etc.
London, S.W.	T. W. Rush, driver to J. Barker and Co.	15	£10, etc.
Kingston	A. Foster, St. James's, W.	22½	£2.
"	W. Wickens (driver to Mr. G. Paulin)	25	£1.
Greenwich ..	J. Hewitt, Leicester	20	£3, etc.
Cupar, N.B.	J. B. Greig, Earlsferry	—	Not proven.
"	A. Marshall	—	£5.
Worthing ..	P. G. Couch, St. John's Wood	—	£2, etc.
Midhurst	H. Hilland (driver to Mr. Money Coutts, Hants)	23	£1, etc.
"	C. Woakes, Gloucester Place, W.	—	£1, etc.
Haddington, N.B.	D. Small	—	£5.
Barnstaple ..	A. Hammill	—	£5, etc.
Arundel	H. G. Stringer, Brighton	28	30s., etc.
Cromer	E. Oppenheim, Leicester	22	40s., etc.
"	H. Ginsler, Hatton Garden, E.C.	—	£4 16s.
Reigate	A. Cowen, Park Lane, W.	27	£5, etc.
"	T. Cunningham, Pall Mall, W.	—	£3.
"	E. C. Braddington	—	£3.
"	Claude Watney, Mayfair	—	£3, etc.
"	A. Harrison, Epsom	—	£2, etc.
Godstone	A. Valengo, Leicester Sq., W.	—	£3, etc.
"	T. Forge, Woodford	26	£1 10s., etc.
"	H. Strakosch, St. James's, W.	27	£2 10s., etc.
"	S. A. Bird, Hanover Sq., W.	22	£2 10s., etc.
"	S. A. Medwin, Streatham	27	£2 10s., etc.
"	W. Symonds, Clapham Park	24	£2, etc.
York	W. McCormack, Hampstead	23	£10, etc.
Southampton	W. H. Bradford, Boscombe	—	Adjourned.
Reigate	F. Charles, Chalwood	—	£2, etc.
"	C. Higgs, Tooting	—	£2, etc.
"	H. R. Bowles, Camden Town	—	£2, etc.
"	A. Staveley, Mitcham	—	£2, etc.
"	A. Inglehead, Cavendish St., W.	—	£2, etc.
"	R. Lambert, Chalk Farm	—	£2, etc.
"	P. Cogan, Bloomsbury, W.	—	£2, etc.
Winchester ..	W. Watson	—	£10, etc.
York	F. Churchill, Sheffield	19½	20s., etc.
Kingston ..	W. Wickens, Effingham	—	£1.
Stratton, Dev.	V. Lee (driver to Mr. H. Peel)	—	£7, etc.
"	Ede Oakley, North Wales	—	£7, etc.

MOTOR-CYCLES.

Rhyl	J. Buxton, Warrington	—	£1, etc.
"	I. Bayley, Warrington	—	£1, etc.
Brecon	G. T. Jones, Brecon	—	Costs.
Shipston-on Stour	H. Parker, Stratford-on-Avon	23	£5, etc.
Carlisle	J. Huthart, Carlisle	14	10s. 6d.
Whittlesea ..	H. A. Whittome, Whittlesea	—	£5.
Carnarvon ..	C. Wheeler, Holloway	15	10s., etc.
"	J. Willmott, Holloway	15	10s., etc.
Westminster	J. Wye, Walton-on-Thames	—	Remanded.
York	W. Driffeld, Knaresborough	20	10s., etc.

Where no alleged speed is given it is understood to be above the legal limit.

At the Newcastle-under-Lyme Police Court, William Vincent, motor agent, of Keele, was summoned for driving a motor-car at a speed that was greater than was reasonable. P.C. Price said he was "flabbergasted" at the speed of the car driven by the defendant. Mr. Vincent said he was only going at eight miles an hour. Mr. John Machin corroborated defendant, and Mr. James Cadman, jun., who was on a motor-cycle in the same road at the same time, estimated that he was travelling at from six to eight miles an hour. The Bench reserved their decision, until they heard a case against Charles Boote, captain of Volunteers, who was summoned for a similar offence. The chairman of the Bench then said they considered both cases proved, and there would be a fine of 40s. and costs in each case.

CLUB NEWS.

READING.

ON Wednesday of last week the members of the Reading Automobile Club were invited by Mr. and Mrs. Charles H. Dodd to meet at their residence in Maidenhead. A good many members availed themselves of the kind invitation and the run was very enjoyable. On arrival the members were entertained at tea, and after looking round the grounds and inspecting the motor vehicles assembled, the return journey to Reading via Henley was commenced. Mr. Dodd piloted the party through the intricacies of Maidenhead Thicket on his 8-h.p. Renault. The club is to be congratulated on having amongst its members such an enthusiastic automobilist as its host on this occasion.

NOTTINGHAMSHIRE.

ONE of the most interesting functions held in connection with the Nottinghamshire Automobile Club during the present season took place on Saturday afternoon last in the form of an informal hill climb up Kettleby Hill, near Melton Mowbray. The rendezvous was at Nether Broughton, and at three o'clock the following members of the club were present:—Messrs. G. H. Kirk, C. Evinson, A. R. Atkey, E. W. Wells, R. Cripps, R. R. Latham, J. C. Bennet, W. H. Warburton, M. Ross Browne, Chas. Hardy, H. Belcher, Dr. Atkinson, C. L. Schwind, S. Harvey, R. Harbidge, A. King, Col. Powell. The cars participating included Humber, Georges Richard, Daimler, Clement, Progress, Rex, Renault, King and Argyll. The conditions of the hill climb were that each car should be in touring trim and carry its full complement of passengers, the club offering a gold badge to the car which, in the opinion of the Races Committee of the A.C.G.B.I., should have accomplished the most meritorious performance. Messrs. T. Large and J. H. Soothern kindly officiated as honorary timekeepers. After some seventeen members had been seen on their way up the hill, Mr. Lloyd, who had driven down with Mr. S. F. Edge on a 35-h.p. Napier recently driven in the Gordon Bennett race by Mr. J. W. Stocks, made an ascent of the hill, but the "Piece de Resistance" was the drive up the hill by Mr. Edge on his big Napier. The spectacle was enjoyed immensely by those fortunate enough to witness the sight. The members afterwards dispersed in various directions for tea, some being the guests of Mr. W. Don Foster, at his residence, the Limes, Edwalton.

SOUTHPORT.

A MEETING of the Southport Automobile Club has been held at the Scarisbrick Hotel, under the presidency of Mr. J. H. Preston. There was a good attendance. Several new members were proposed, which brings the total up to nearly thirty. It was suggested that the club should arrange for the erection of a grand stand on the Promenade to be used during the Automobile Club trials. Some of the club members will probably enter for the Lancashire Club race in the trials.

MIDLAND.

THE Midland Club held their hill-climbing competition last Saturday at Sun Rising Hill. Only about 300 yards of the top portion of the hill was covered.

Three police traps were laid between Stratford-on-Avon and Sun Rising Hill, resulting in a number of cars and motor-cycles being stopped and names taken. Mr. H. Sturmeay was early on the scene on a bicycle, and found several policemen measuring distances on the road. He rode towards Stratford and warned several cars of the danger. Luckily for ourselves we travelled on a Siddeley car through Wellesbourne and Kington, and so missed the trouble.

Amongst those present were noticed Messrs. C. Vernon Pugh, E. J. West, O. Harmer, O. Baynton, F. Lancheater, G. Lancheater, T. C. Aveling (hon. sec.), etc., besides those who figured as competitors. The times were as follows, but the official declaration as to the result has yet to be made known.

Name of Driver.	Maker of Car.	Time of Ascent.	
		Min.	Secs.
J. A. Holder	24 h.p. Panhard	1	9½
H. A. Holder	16-h.p. De Dietrich	1	11
C. W. Dixon	10-h.p. Lancheater	1	55½
M. A. Lawrence	10-h.p. Lancheater	2	2
E. J. Hartenfeld	10-h.p. Lancheater	2	1½
H. Luff Smith	10-h.p. Wolseley	1	27½
A. E. Crowdy	20-h.p. Wolseley	1	16
Harvey du Cros	12-h.p. Ariel	1	22½

POLICE TRAPS.

AT Wolford Fields, near Shipston-on-Stour, the police have measured half a mile of road for the trapping of motorists.

THERE was a police trap at the end of last week on the Portsmouth road from the Royal Huts Hotel at Haslemere for 176 yards south.

THERE is a measured quarter of a mile on the Portsmouth Road, from the Anchor Hotel, Liphook, to the signpost leading to the station on the road to Petersfield.

FROM a correspondent in the Potteries we learn that police traps have been established at Newcastle-under-Lyme, Stoke-on-Trent, and other leading towns. In fact, it would appear as though the police in all these places were co-operating in their antipathy to motorists.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, SEPTEMBER 26, 1903.

[No. 238]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

THE Motor Volunteer Corps assembled on Saturday the 12th inst. at the Ailesbury Arms Hotel, Marlborough, which was their headquarters during the manoeuvres, the following officers being present:—Lieut.-Col. Mayhew (commanding officer of the Corps); Majors Knox, Eden, Stamford and Wyndham; Captains Goff, Crampton, Polden,

Ker-Seymour, Midgeley, Lee, M.P., Hearne, Hammond, and the Hon. C. S. Rolls; Lieutenants Trippel, Paynter, Holder, and the Hon. A. V. Cave; and Adjutant Captain Skeffington-Smyth, D.S.O. Officers and members messed together at 8 p.m., when the commanding officer gave an outline of the duties that they would be called upon to perform. On Sunday morning there was a foot parade of the corps with subsequent inspection by the Commanding Officer. Orders for the day were then announced by the Adjutant, and duties entered upon forthwith. It is interesting to note that certain repairs requiring to be done to one of the Commander-in-Chief's W.O. cars, Captain Rolls left Marlborough at 10.40 a.m., reaching Birmingham at 2.30 p.m., and after procuring the requisite material left again at 3.55, reaching Marlborough at 7.55 p.m. The repair was then completed and the car made ready for use by 10.15 p.m.

Some of the Work.

ON Monday extensive orders were issued and the following officers and men were detailed for special duties in connection with the headquarters camp. Colonel R. C. Knox, Captains Goff, the Hon. C. S. Rolls, Key-Seymour, Messrs. G. S. Foote and A. S. Gilbert. The following officers and men conveyed the foreign military attachés over various parts of the manoeuvre area: Captain A. B. Hearne, Lieutenants H. F. Trippel, the Hon. A. V. Cave, Messrs. C. A. Knight, Hippisley, L. Bury, W. H. Bloomfield, and F. Butler. Tuesday was an exceedingly busy day. Duties commenced at 6.45 a.m. Lieut.-Col. Mayhew conveyed the Commander-in-Chief to Shefford, beyond Hungerford, and was accompanied by Major Forbes Eden, Capt. Lee, M.P., Lieut. T. Holder, Earl Russell and members. Similar duties were performed by Col. R. C. Knox, Capt. the Hon. C. S. Rolls, Capt. Goff, Capt. V. Ker-Seymour and members. The following officers and men conveyed the foreign military attachés to Shefford, Newbury and Hungerford. Major Wyndham, Capt. Hearn, Capt. Hammond, Lieut. Trippel, Lieut. the Hon. A. V. Cave, Lieut. Paynter, and members. The detachment of the M.V.C. working with the umpire camp consisted of Major Stanford, Capt. Polden, Mr. Stanton and three cycle members.

Police Traps Down Hill.

THERE really seems no limit to the ingenuity of the police in devising their traps for motorists, and not satisfied with laying these on the level road, we find they are now signalling from points on the down grade of fairly steep hills. This is the sort of thing which was never contemplated by the

Local Government Board when restricting the legal limit to twelve miles an hour. It is such matters as this which give motorists so little confidence in the police system and makes us suspicious of the judicial Bench of the country.

Train v. Motor-Car.

MR. J. E. STEAD, a Middlesbrough civil engineer, was with his wife and children being driven on his motor-car from Darlington on Monday, and they were just about to run through a level-crossing when a goods train came dashing through the gates, splintering them to matchwood. The car was going at such a speed and was so close to the gates that it was impossible to avoid going on. The chauffeur adopted the daring expedient of turning the car on to the track in front of the train. Straining every nerve the driver extracted from his motor all the speed of which it was capable. The engine-driver, who did not appear to have noticed the motor-car, now realised the peril of the motorists, shut off steam and put on the brakes. Notwithstanding the efforts of both, the engine eventually ran into the motor-car, but as the speed of the former was by that time slackening, the impact resulted in nothing more serious than a severe shaking.

The Emission of Steam.

SEVERAL cases have lately been before the courts with regard to the emission of steam, and we commend to the notice of motorists that heard at Farnham, which will be reported in our columns next week, in which Mr. Douglas Mackenzie, the managing director of the Motor Transport Company, secured the dismissal of a summons against one of his drivers for emitting steam. The whole trouble seems to arise from some confusion among the police as to what comes under the Act of 1865, and what vehicles should be rightly regarded as dealt with by the Act of 1896. In connection with this, we notice that the Bench, while dismissing the case, proposed that the defendant company should pay the costs. This was subsequently remitted on Mr. Mackenzie pointing out the illegality of such a course, and we should suggest that this case should be borne in mind by others similarly placed.

Street Traffic Problems.

It was perhaps unfortunate that Section G of the British Association did not adjourn for a short luncheon interval ere Col. Crompton read his "Street Traffic Problems," of which we gave an extract in our last issue, for when the author mounted the platform there were but very few listeners. The discussion was brief, indeed the only part of any real value were the remarks made by the head constable of Liverpool. The chairman of the section, Mr. C. Hawksley, had something to say about lamp-posts and tramway standards, which, when placed in the middle of the road, obstructed traffic. He considered that omnibuses at present seemed to rule the speed of city traffic. The Head Constable of Liverpool, after referring to the powers possessed by the police in dealing with the traffic, said that in Liverpool they had a very busy electric tram traffic, and they had definite stopping places, which meant that a crowd of people collected at these points waiting for the trams to come;

they then rushed across the footways to their own danger and were also a hindrance to other traffic. That was a matter that would have to be considered some time or other, as it made a road practically a railway at certain points. He considered that the faster street traffic travelled, the safer it was. They had that experience in Liverpool. The number of accidents had considerably decreased since the introduction of the electric trams, though they had twice as many vehicles. The electric tram had educated all classes of the public to exercise greater care on the highways.



The German Attaches at the British Military Manœuvres.

Photo by

[J. T. Newman.]

Motors and Manœuvres.

At the luncheon which preceded the Reliability Trials, Mr. Roger Wallaco made the interesting announcement that Lord Roberts had confided his conviction that motorists were becoming increasingly useful in army work. This, too, is the view of the various *attachés* who were present at the manœuvres, and who themselves used motor-cars in connection with their observations. We are able to give a photograph showing the German officers engaged in the manœuvres, thus demonstrating the universality of the automobile. The Commander-in-Chief has just made his first annual inspection of the Motor Volunteer Corps, there being thirty-five motor-cars and nineteen motor-cycles present. At the conclusion of the inspection, Lord Roberts testified to the fact that he would have been in a very difficult position in the manœuvres had he not had the advantage of Colonel Mayhew's skill and speed of driving about everywhere in a most delightful and comfortable manner. He hoped that as time went on the difficulties concerned with punctures would be minimised, so that more reliability could be assured of the cars, and in this, of course, everyone will agree with the Commander-in-Chief. It has been amply demonstrated that the motor-car will become an essential feature in the equipment of the army, although, as is pointed out in one of the descriptions of the run to Worthing on Monday last, the raising of dust by cars would be a considerable assistance to an enemy in locating the presence of opposing forces.

How not to do it.

Others have lately appeared at local courts for alleged reckless

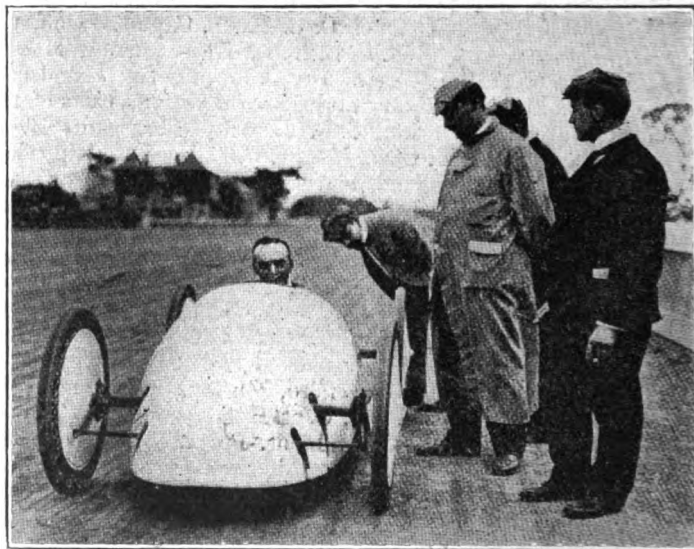
driving, and the names of a good many military men have appeared in our list of furious driving cases. Whether they are doing this with a view to making themselves more valuable to the country in times of war we do not know, but certain it is that the position of firms supplying automobiles to the army is not wholly an enviable one. The young men who are sent from the war authorities to inspect cars for purchase, and to be trained in their driving, do not always have any sense of their responsibilities, and very often regard lamp-posts and other impediments of the streets as legitimate targets for their waywardness. Expenses thus incurred are generally credited to the manufacturer rather than to the nation, with the result that we are afraid a good many firms in the motor industry are not keen on obtaining military orders. This is a small matter, but it is of many such small matters that the incompetence of many of our national offices is made up.

Warning Motorists.

RECENTLY we have received several letters from readers asking their position so far as the police are concerned, should they warn motorists of traps laid on the road. Not only in the south, but also in the north of England, the police are naturally very much annoyed when motorists, who have discovered examples of their mean methods of capture, travel some miles in order to warn other unoffending motorists not to incur the displeasure of the police. For this they should really be grateful instead of angry. A case was decided a little while ago in the north of England, and lately in Surrey, when motorists were summoned for furious driving, and the police urged, in order to secure a heavier fine, that they had been assisting other motorists to escape. So far as we know, this is the only danger that lurks in the practice, but we shall be glad to hear from any of our legal readers on the point.

Another American Monstrosity.

THE new Baker electric racing car which is known as the "Torpedo Kid" has been no more fortunate than its 1902 predecessor, for an accident occurred on its first public appearance at the race meeting at Cleveland, U.S.A., on the 5th inst. While it was defeated in the one-mile event for electric cars by a Waverley, it showed itself the fastest 800 pound machine in any class and also succeeded in lowering the



The Baker "Torpedo Kid."

five-mile record for electric vehicles from 8 min. 40 secs. to 6 min. 29 3-5 secs. The accident occurred in the last lap of a five-mile race. There were but three starters—D. Chisholm, in the "Torpedo Kid"; W. Baker, in a Baker runabout, and E. W. Gilbert, in a Waverley. The latter had just passed the Torpedo, when the spectators heard a slight crash and

saw the vehicle swerving and dashing apparently almost at right angles into the crowd along the fence at the track side. Hundreds of people left the stands and railings and rushed to the scene, expecting to find many dead and injured. But seemingly by a miracle only four persons were struck by the car in its erratic flight. Two were merely bruised. One man had his hip injured and his head badly hurt, while another was knocked unconscious, but later it was found that he was not injured and suffered only from the shock. The driver himself escaped uninjured, passing under the fence without touching it. As for the vehicle itself, two wheels were broken off and the shell was injured, but the mechanism was not broken. It is said that the accident was caused by the left rear wheel of the Waverley striking the front right wheel of the Torpedo in passing.

Motor-'Buses Wanted.

EVERY week brings news of new developments in connection with the use of automobiles for public service. Now resolutions are to hand from local authorities, asking for the provision of motor-'bus services, and also for the establishment of motor vehicles for the conveyance of goods traffic. The establishment of a motor-'bus service between Beverley and

tral authorities, under the 16ft. clause that roads should be closed to motorists, and it would appear that we shall have another great fight ere long with the local authorities, whom at one time it was thought had been thoroughly converted to automobilism by the propaganda of the Automobile Club.

The Southport Trials.

ENTRIES for the speed trials at Southport are being received in goodly numbers, and the fact that the last day for receiving entries has been postponed to Tuesday next will permit of others. Entries must be made on forms obtainable from the Automobile Club in London or the Liverpool Self-Propelled Traffic Association. The trials will be held on the 2nd and 3rd prox., the local consultative committee comprising Messrs. T. S. Vernon, L. Williamson, and G. Higginbottom (representing the Liverpool Self-Propelled Traffic Association) Mr. T. Scarisbrick (the Mayor), Councillor Trounson (the deputy-mayor), and Alderman Griffiths (on behalf of the Southport Town Council), Mr. J. H. Smith (Manchester A.C.), Mr. P. H. Altham (Burnley A.C.), and Mr. G. D. Wandsworth (North-east Lancashire A.C.). In the motor-cycle section there will be four events.



The Paris-Madrid Tour—The Ader Car at Riom, France.

[Le Chauffeur.]

Beeford, described and illustrated in recent issues of the *Journal*, has led the Driffield District Council to give serious attention to the matter, and they are now asking the North-Eastern Railway Co. to introduce a service of motor-'buses between that town and the villages of Wansford, Frodingham, and Beeford. The hamlets now served by the Beverley to Beeford vehicles have long been in the habit of making Driffield their market town. The trade of that place may be diverted; hence the interest of the local councillors to see the establishment of a motor-'bus service within their area.

The Speed Limit.

THE Roads and Public Grounds Committee of the Local Authority for Aldershot have informed the Hampshire County Council that it is, in their view, desirable that on all roads and streets in the Urban District of Aldershot, with the exception of the Farnborough and Fleet main roads, the speed of motor-cars should not exceed ten miles an hour, and this recommendation has been approved by the District Council. Already we notice the local authorities are suggesting to the cen-

All the races in the car section will be run over a kilometre course from a flying start, and the programme will include a dozen competitions.

Technical Education.

THE Technical Institutes are beginning to recognise the necessity of including motor-car engineering in their curriculum, and, at the Battersea Polytechnic, Mr. H. Taylor is conducting a class intended to train motor-car engineers and drivers, and to provide such instruction as is necessary for an intelligent understanding of the principles, construction and working of motors. Towards the end of the Course, students will be given the opportunity of examining and handling a motor-car, and the practical knowledge of the instructor, Mr. Taylor, should secure the usefulness of the class. At West Ham Technical Institute, too, we understand, Mr. John Duncan is giving attention to motor-car work in the engineering section for which he is responsible. We shall be glad to hear from similar institutes giving attention to motor-car instruction.

The Reliability Trials.

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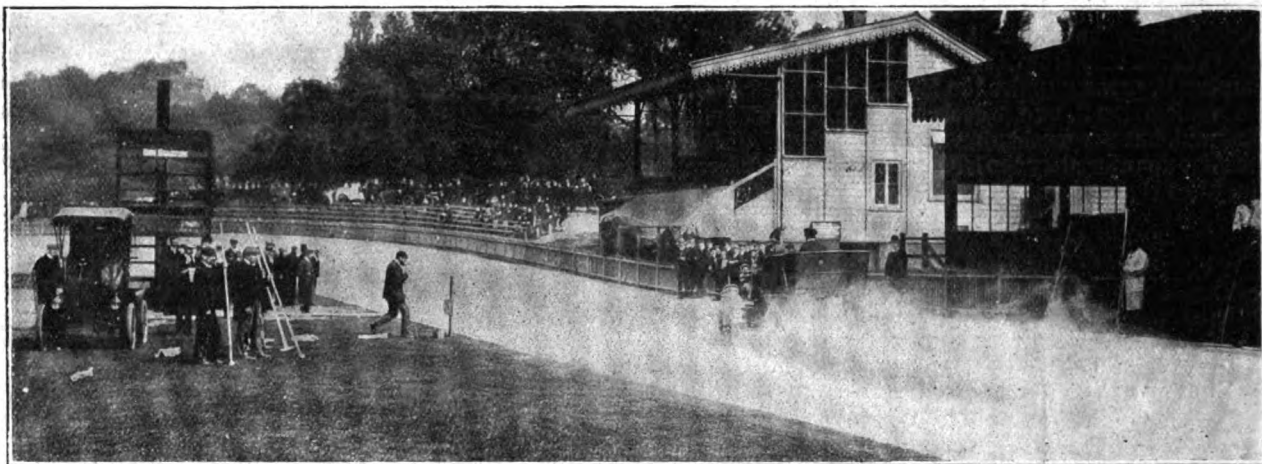


Photo by

The Dust Trials on the Track at the Crystal Palace.

Russell and Sons.

THE fifth series of Trials organised by the Automobile Club of Great Britain and Ireland opened on Friday last and will continue till to-day (Saturday), when the run will be to Brighton and back. Good weather has prevailed throughout, the organisation has proved to be fully equal to anything yet done under the auspices of the Club, and the percentages of cars doing well has been greater than on any previous occasion. We have already given particulars of the idea underlying the Trials, and of the most conspicuous entries. We now proceed to record the impressions of some who have accompanied the cars on their daily trips.

FRIDAY—TO MARGATE.

IN KENTISH HOPLANDS.

As we looked from the window of the Queen's Hotel, Norwood, on the morning of the 18th, the ruddy glare of the morning sun gave promise that summer had come at last; that the fickleness of the weather had been overcome, and that the rain clouds were to be evaporated into nothingness. As events proved a sky-struggle progressed all day, in which King Sol held his own until long after lighting-up time, when Jupiter Pluvius worsted him in the contest, and the rain fell in the way to which we have become accustomed.

But the morning opened well, and hopes were rising as the Crystal Palace Parade was reached. A strange odour pervaded the air, and a darkened hue was noticeable on the roadway. An enemy to dust had been abroad, and not only laid it low, but did it so effectually that it could not rise again. Car after car made fresh tracks along the surface; horses' hoofs made deeper impressions than did tyres; traction engines ploughed heavily along; the wind blew in swift currents across the roadway and sent the leaves hurtling with the speed of Gabriel; but the dust rose not, and Westrumite added to its reputation. Oh! for a length of Westrumite roadway along the Ripley course when winds are swift and dust is thick!

On the left of the roadway was a modern building, lacking the form and substance of the ancient structures of our forefathers. Ingeniously constructed of whitewashers' trestles and canvas was a tent, a kind of conglomerate of a War Office tent, an Indian wigwam, and a travelling theatre. Huge letters P. R. on one side caused us to think it was a Pratt's motor spirit supply store. E. S. S. on the side facing the Palace denoted the initials of Mr. E. Shrapnell Smith. Coupling the two letterings was the word Press—the meaning actually sought to

be conveyed. The building was evidently not intended to be a "thing of beauty," but as a means of utility it looked well, and Mr. Smith is to be congratulated on the thoroughness with which he has carried out the duties of hon. Press Secretary, displaying an urbanity of manner, a penchant for organisation, and a memory for details that found full scope for the questioning Pressmen who have sought him for knowledge on every point, from the gradient of Westerham Hill to the relative importance of petrol and steam in making a Locomobile travel along the road.

By seven o'clock the cars began to take up their places according to the numbers allotted. These had been decided by ballot, and the fortune of chance had given to Mr. D. M. Weigel the honour of pilot, which Mr. Chas. Jarrott carried out with so much zeal last year. A successor to Theodore Hook had been at work the previous evening rearranging the numbers nailed to the boarding of the Palace grounds, and the officials were almost frantic when the folly was discovered. But they postponed their fury to see that the joke did not mislead the competitors, and in a few minutes all was well.

Mr. D. M. Weigel on his Clement took up the premier position along the Crystal Palace Parade, and at 7.30 p.m. started off at the head of a procession of 104 cars that went off at intervals of twenty seconds.

On No. 68 we took a seat, and that car took its position—thirtieth in the line of procession. It was a Brooke of 14-h.p., with some new features, of which more anon. Mr. Mawdsley Brooke was at the wheel, and Mr. J. B. Reid our Observer—a lynx-eyed man who had studied his duties and knew exactly what to do and how to do it. Last year the Observers were a strange collection of motorists, engineers, and the holiday-making public. Efforts have been made to reduce the number of the latter taking part in the trials, and the Observers this year have been generally a great improvement on those who were said to observe last year. This is a fact upon which the competitors and public alike are to be congratulated.

We were soon on the way to Beckenham, postmen and milkmen being the only spectators, regarding us as abnormal persons to be stared at or glared at, according to the temperament of the onlooker. In front was the little Elswick car; behind the Chenard and Walcker, with the designer at the helm, and making far more noise than is ordinarily associated with this good type of car. At Beckenham, the newspaper placards announced the resignation of politicians, and many of the passengers by the cars wanted to get out and see the papers. But Observers were obdurate; knowledge was a good thing,

but not to be obtained by the breakage of rules and regulations. And so we conjectured.

Through Bromley shortly after eight o'clock, and everyone was struck with the green hues that predominated. Nature's copious and tearful outpouring of late had preserved the almost springlike hues of the trees and hedges, and until the long pro-

There was little to notice to while away the time; the road was familiar to all who had been to Folkestone in 1902, and it was with a sigh of relief that we noticed a donkey standing in the roadway and looking towards us. Experience in Ireland had led us to anticipate some fun, for those animals had such a delightful spirit of contrariness that gave zest to any meeting



Photo by]

The Start for Margate.

[Argent Archer.

cession of cars coated the vegetation by the roadside with a khaki layer, this was the dominant note of the hedgerows. But motor-cars can effect transformation scenes in the countryside, and many have been the changes made this week. A horse trainer had brought several horses out for training purposes, and then, as we got beyond Chislehurst, we passed the Elswick car on the hill, along which it had gone somewhat laboriously, especially when only a little bit off the top. Turning round when

with their tribe. But the ass we saw was an English ass, and, with all the politeness imaginable, he got out of the way of the Brooke, only to meet the Swift coming along. The way in which he reversed to that car was—to use a word that is employed for want of a better—immense, and the watchful driver of the Swift missed his donkey.

Being on a good car, and so near the head of the procession, there was little of incident and few cars to pass. Near the



Photo by]

The Run to Margate—The Scene at Maldstone.

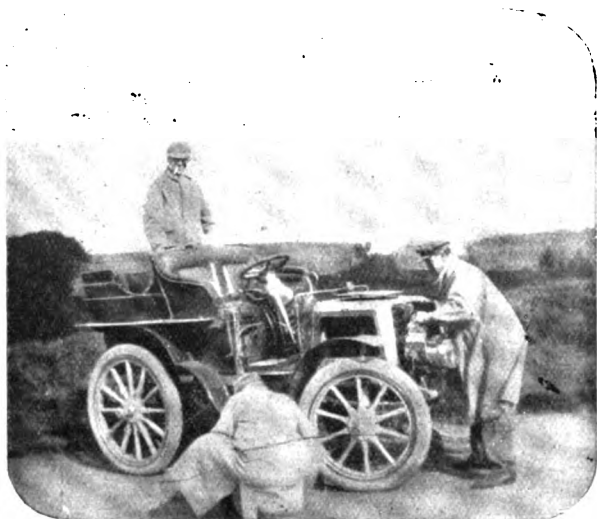
[Campbell & Gray.

again on the flat, the Chenard-Walcker was observed, evidently slowing down, although it had taken the hill in capital form. Just before reaching Foots Cray adjustments were being made to the 6-h.p. De Dion Bouton, and then we went ahead, passing a couple of New Orleans cars which were of the number that made non-stop runs.

delightful old-world corner of Kent at Wrotham we passed the 18-h.p. Mors, and contemplated how this beautiful district could be closed by the Local Government Board to the motorists of 1904.

Beyond Wrotham, the first of the oast houses came in view, and we were soon in Hopland. The 12-h.p. Wilson

and Pilcher had stopped in consequence of a nut on the commutator cam going adrift, with the result that it retired from the day's run. Pending such a determination the passengers went a-blackberrying. Tyre troubles were frequent, the Relyante, the Elswick, a Georges Richard, a Mors, an Oldsmobile, and a Dechamps all wondering why the fiend associated with punctures



A Wayside Incident

should have selected them for his own. Fortunately, the car on which we rode escaped; tyre repairs and the time they take have no attraction for us.

In Maidstone we were drawn up in the main street, and presented a very begrimed appearance. The town is not an attractive one, and none cared to dawdle. It was noted that a few of the residents in the suburbs of the town had been wise in their day and generation, and had themselves thrown water down on the roadway for a distance of quite a hundred yards, thus securing comparative immunity from dust. We got out by way of Detling to Sittingbourne, along the straight, clear street of which we scampered gaily. A few knots of people with nothing better to do watched the cars, but there was a lack of that enthusiasm with which such trials were greeted in the old days—the old days of not so long ago. At Greenstreet the chase became exciting, for there were quite a score of cars—mostly big ones—in Indian file, to say nothing of a free-lance Daimler and a M.M.C. equally out of control of all rules and regulations. Going through the town motorists were compelled to eat their dust. It seemed to constitute the very atmosphere we breathed, and although the sport of scuttling along in a trusty car at a rattling speed was exhilarating, it proved a wee bit irritating when accompanied with clouds of dust, a chalky dust that whitened our clothes and transformed our appearance to an uninviting degree.

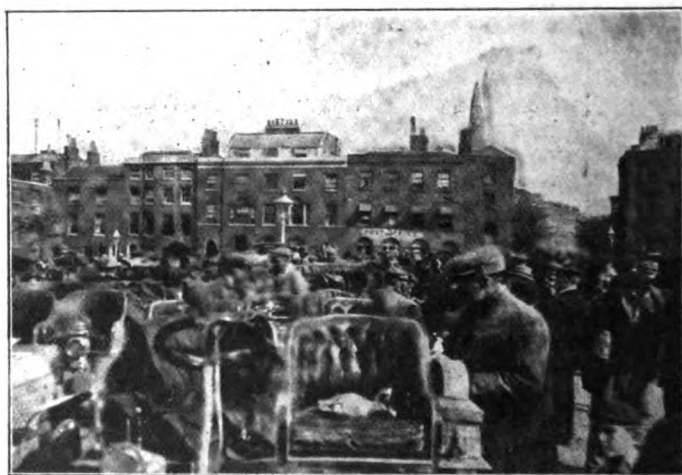
As we passed the hopfields the women left the bines and gathered on the roadside, while their bronzed and saucy youngsters pelted the cars with remarks that scarcely ever bordered on the polite. Drivers were invited to "Come out of that yere 'at," and "Git yer face washed" was an injunction all would gladly have responded to. These are the most printable samples of the conversation of the young hoppers; the rest may be imagined. Just beyond Faversham a car was seen in the distance behind. While we were gazing in vain for the number the outer cover was cut, and the inner tube blew out, swelling up like a football and revolving with each turn of the wheel—a remarkable excrescence that caused the car to stop and the passengers to recognise the value of the handy man when motoring. Harbledon was a picturesque place just before we reached the ancient city of Canterbury. The tower of the cathedral stood out grand and grey above the roof-tops, falling out of sight as we rounded St. Dunstan's Church and smelt the smell of brewing. Past some

good old houses we sped into Pound Lane—a narrow lane beginning with the police station and ending amid associations more friendly to motorists. In front were seen the 18-h.p. Star and 12-h.p. New Orleans, and we were soon beyond the barracks and feeling the cool breezes that were coming along. There was nothing of incident save the rumour as to a police trap that evidently did not exist, and the Brooke made a good pace through Birchington and Westgate to Cecil Square, Margate, where a goodly number of cars were already lined up, the multitude of automobiles being increased by the presence of several private cars, including Mr. C. Cordingley's 40-h.p. Mercedes. Such scenes are familiar enough nowadays, and as they appeared from the tonneau of our car may be seen from the accompanying photograph.

The White Hart was the official rendezvous for luncheon, and there men were rubbing and brushing and scraping the accumulations of Kentish soil with which they had been partially disguised. Just before 2 p.m. we left the Londoner's seaside resort, and were soon making for home, our car sustaining its reputation for comfort for the passengers. So much so that one had opportunity for a rest, and after seeing half a dozen cars still making their way to Margate we slept as far as Sittingbourne. The car has been very much altered since we had a run on the first turned out at the works from Lowestoft to Yarmouth and back, and that running in the trial has a pressed steel frame, while the axles have been re-designed to allow the back springs to be spread out four inches more, thus securing that absence of vibration which enables sleep. Larger sprockets, too, are employed than in the original type, and there is an auxiliary tank in connection with the pressure-feed lubrication. But the old car is still capable of good work, and as a matter of fact the first vehicle ever made by the firm has been driven about 17,000 miles, and was used by Mr. A. Maconochie, M.P., in a political tour in Scotland a month ago. Like Tennyson's brook,

"Cars may come and cars may go,
But I go on for ever."

After the sleeper had been awakened, the return journey was but a repetition of the outward run, so far as the incidents of the road were concerned. A few gentlemen were evidently wisely taking advantage of the occasion to accustom their horses to motor-cars, and towards Canterbury several clergymen were observed as interested spectators. At Maidstone tea was the objective, and there one learned that No. 67, the Ariel, had had



In Cecil Square, Margate.

to return to the Palace, having bent its axle in avoiding a collision at Chislehurst. Trouble with the gear had caused the retirement of the Holcar at Wrotham, and a few minor incidents concluded the list of disasters. The run home was in good style, and of the 104 cars that started, 35, it was found, completed the whole 150½ miles—the longest day's run of the series—

without a stop; 26 did practically as well, thus establishing the reputation of 61; another 28 had delays involving the loss of more than five marks, but only eight retired—a fine record of a stern day's trial.

OUT OF CONTROL.

On the opening run of the Reliability Trials to Margate the writer arranged for the journey to be taken by a car that was not entered for the trials, and a seat on a 20-h.p. M.M.C. was placed at our disposal. Punctually to time, our car was in readiness, with a view of the vehicles as they filed past at the start. After fifty or sixty had proceeded on their way, we decided to follow on, and in a short time were speeding cautiously along, the milkmen and postmen for some time being the only observers. For the first few miles the cars were fairly close together, while the bright promise of daybreak was rapidly turning into an absolutely lovely day, and the occupants of cars were consequently in high spirits. Just this side of Chislehurst three "men in blue" were observed to enter a covered van and move in the direction of the town, but whether on evil bent or not did not transpire. By the time the summit of Wrotham Hill was reached many cars had been passed, and as our M.M.C. was not controlled by an Observer we decided to wait and see other cars climb the hill, which for some of the smaller-powered ones proved an arduous task. After a short stop we again



The Brake Trials in the Palace Grounds—The 20-h.p. Humber on the Line.
Photo by [Russell & Sons.]

proceeded on our way, soon passing a 12-h.p. Wilson and Pilcher, and, about a mile further on, an 18-h.p. Mors, both in trouble. At ten o'clock Maidstone was reached, and the congregation of cars quite monopolised the broad roadway, while the motorists were beginning to show a fine powdering of dust. After a longer delay than the rules permitted for the "Reliability" cars, we went forward once more, duly reaching Sittingbourne, where the cars proceeded through the town in close procession at a slow pace. Both before and after passing this town many motor-wagons and traction-engines with trailers were observed in use for agricultural and other pursuits; while the crowds of children belonging to the hop-pickers were loud in their observations as the long procession passed by, and when they return to their homes again they will have to tell of the motor-car "race" they were fully convinced was taking place. Faversham and Canterbury were duly passed, then on through the sweet little village of Sturry, and soon afterwards we were made aware of the approach to the seaside by meeting a number of two and four-horse pleasure vehicles, the occupants favouring the motorists with a good deal of chaff on their appearance, which was certainly warranted, as the dust from Maidstone onwards was simply a cloud, from which there was no escape, and in the result both cars and occupants presented a very dirty appearance. Between Birchington and Westgate-on-Sea a motor-cyclist was

kept busy giving information to motorists of a police trap ahead, but, thanks to the timely hint, a good "bag" did not result. Onwards into Margate crowds of varying sizes were passed, while in Queen Street and Cecil Square great interest was exhibited. The motorists, however, were first concerned in reducing the coating of dust and securing their lunch.

Soon after two o'clock the return journey was commenced, and in the first ten miles five or six cars were met on their way in to Margate, so the hour must have been very late when they returned to the Palace. The return journey was quite without incident. Many cars were passed; the 20-h.p. Motor Manufacturing car, with Mr. J. A. Prestwich at the helm, completed the entire journey without any trouble, tyre or otherwise. It proved a splendid hill-climber, and ran smoothly. Not a single horse showed fright during the day, while both on the outward and return journeys a trap was met being driven by two spirited horses tandem fashion, and no sign of fear was exhibited. The Palace was reached just before seven o'clock, after a most enjoyable day's run by the M.M.C. car, which was not in control.

SATURDAY—TO EASTBOURNE.

A DAY ON THE HILLS.

ACCORDING to arrangement, our "mount" for the run to Eastbourne on Saturday was the 12-h.p. Gladiator driven by Miss Dorothy Levitt. Overnight we had been pondering over the coming novel experience of a long drive with a lady at the wheel, and were early on the scene for the fray, if fray it were to be. The starting number for the car was 77, and as it took up its position we saw, to our dismay, that it was already provided with a full load of passengers, so that if we were to go on the car the new experience would be added to by a long ride on the floor of the front seat—not a pleasant position to occupy for a spin of 121 miles. However, on enquiry it was found that a mistake had been made, and that the fourth seat was intended for the representative of the *Journal*, who accordingly took up his position in the tonneau. At the appointed time all was ready for the journey, the car having its full complement of four passengers, or rather, in this case, five, to wit—Miss Levitt and the little dog which accompanies her on all occasions, Mr. Robertson, of the Ryknield Engine Co., acting as Observer the writer, and the mechanic. Motor-cars in front of us and motor-cars behind us, we gradually worked our way to the starting point, and at 7.56 were given the word "go" by Mr. Siddeley. And "go" we did without any hesitation amidst a busy throng of "camera fiends," the car driven by a lady being the object of so many snapshotists as to almost make the male passengers blush. Down the hill we went and soon were in Penge, which was beginning to show signs of life, and where we had our first and only serious piece of excitement of the day. It is Burns who is responsible for the phrase that "a man's a man for a' that;" he might have added that though ladies may drive motor-cars or go up in balloons "a woman's a woman for a' that." True the experience we went through was a trying one, even for those of the male persuasion, for it is not often that a motorist has the misfortune to run over two dogs at one and the same time, as did Mr. Pullinger on the 12-h.p. Sunbeam (No. 65) which immediately preceded us. For a second or so the situation was critical, but, although considerably upset by the incident, Miss Levitt pulled herself together and soon we were sailing along as if nothing had happened to mar our trip. The Elswick (No. 19) was seen to be stopped as we made for West Wickham, near which place we overhauled the 8-h.p. Achilles (No. 23), which, however, was going steadily along. Climbing the hill on to Hayes Common, we were "observed" not only by a policeman, but also by Messrs. Beaumont, Crompton, and Lyons Sampson, who apparently were watching the behaviour of the cars on this ascent.

Nothing seemed to keep the Gladiator back except the instructions of the Observer, and in this respect we had so far been more fortunate than the 6-h.p. Swift (No. 24) which was stopped at Keston, and the 6-h.p. Regal, which had met with a tyre puncture at Lock's Bottom. During the

previous night there had been a little rain, but not sufficient to lay the dust, which now began to make itself felt, and more painfully so as the day wore on. Green Street Green, where Arnott, who is this year driving a car, met with a nasty fall twelve months ago from his Werner motor-bicycle, owing to an ill-behaved dog, next came in sight minus dogs, but with the Winton (No. 104) having a temporary stop. "Doctor" Cranham on the 10-h.p. Horbick (No. 56) begged by means of his hooter

ere this little town was reached we had seen both the 10-h.p. Dechamps (No. 60) and the 12-h.p. Darracq (No. 64) in a state of rest. Like a number of others we crawled, to fill up time, into Tonbridge at 9.33, and met with a rousing reception, directed, not at the passengers, but at the lady at the wheel. Southborough and High Broom were soon left behind, and at 9.58 a.m. we came to a stop in front of the Common, at Tunbridge Wells, for the 15 minutes' interval allowed by the rules.

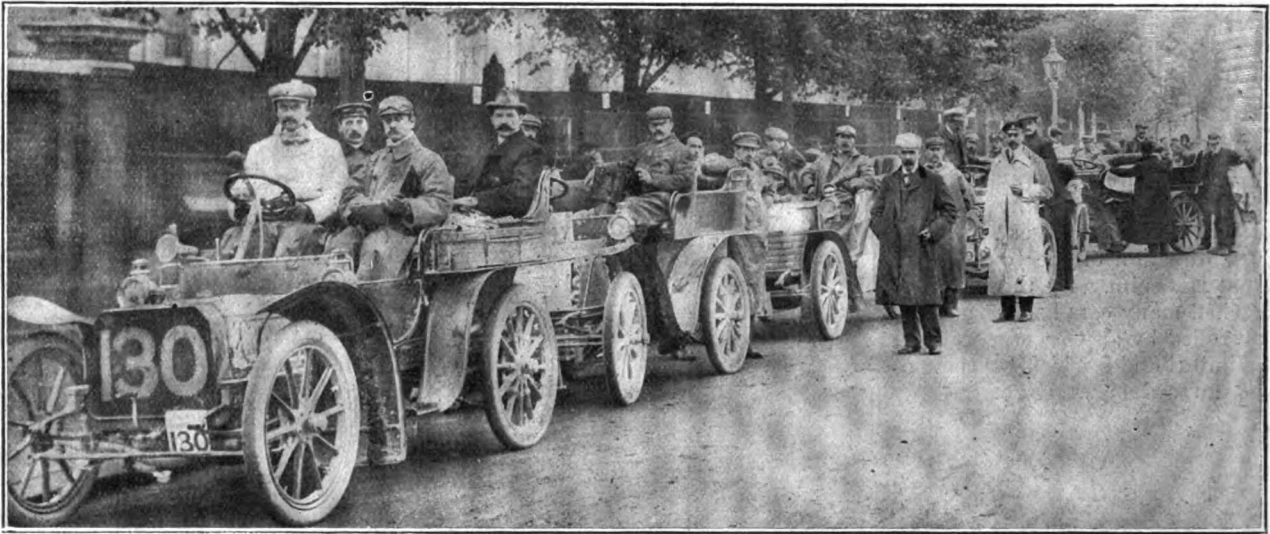


Photo by]

Ready for the Run to Eastbourne.

[Argent Archer.

to be allowed to pass, but he did not leave us for long. Approaching Riverhead, the 10-h.p. Wolseley (No. 52) was passed, a punctured tyre having brought it to a stand. The enjoyment of the run down this hill was spoiled by the clouds of dust, and shortly we were on the steep climb into the old town of Sevenoaks, where Mr. Dew on the Gardner-Serpollet (No. 105) gave us a practical demonstration of the hill-climbing capacity of steam cars by sprinting in front of us on the steep portion. It was 9.7 a.m. as we ran through Sevenoaks High Street, and, passing a party of "hoppers," made our way towards

The quarter of an hour soon came to an end, and once more we were under way, only to see a car, whose number we could not ascertain, being pushed up the hill leading out of the town. Little notice of this was, however, taken by those on No. 66, as by a kind of premonition it was felt that "a bad time" was in store for the Gladiator. For some miles our car did not run up to its usual mark, a fact, even had we not noted it ourselves, that could easily be discovered by a glance at our mechanic's face. To the uninitiated this may always be taken as an excellent guide, for any miss-fire, unusual rattle, or missing of the gear, is as gall to a mechanic, whose



Hoppers and Motor-Cars at Sevenoaks.

Photo by]

[Mr. E. E. Pearson.

the famous River Hill, the descent of which we achieved without any untoward incident. Not so, however, the 6½-h.p. Cadillac (No. 14) which we passed on the roadside at the foot, with a broken road wheel, the result, as we afterwards learned, of a collision. The dust-allaying qualities of "Westrumite" were again demonstrated as we quickly passed over the half-mile of road which had been sprinkled with the new solution. The next stage was to Hildenborough, and



No. 123 in Difficulties at Eastbourne.

Photo by]

[Argent Archer.

life and soul, if he be at all worthy of the name, is centred in the car. Shortly after starting from Tunbridge Wells we began to leave a thin trail of water in the dust behind us. Sufficient in itself to cause forebodings, the outlook was not brightened by Miss Levitt announcing that only three of the four cylinders were working. As the thin line of water still continued to mark the way we had come, a conference was called and a decision to stop to put matters right arrived at. This occurred near Mark

Cross, and while the mechanic attended to the water-leaking difficulty, our lady driver busied herself with the ignition. The cause of our undoing was the fracture of the pipe conveying grease to the water-circulating pump, and to two broken sparking plugs. Fortunately the "spares" box was sufficient for all eventualities, and after a delay of twenty-one minutes we were again *en route* with a fresh charge of water to make up for that we had lost, and a new accumulator in circuit.

At Hellingly our progress was stopped by a herd of cows which set off at a trot in front of us. The man in charge of the cows was absolutely helpless, and comparisons between him and his dog were decidedly in favour of the dumb animal, whose intelligent endeavours to get the cows out of the way eventually proved successful. From Hailsham onwards through Polegate and Willingdon to the destination nothing occurred to disturb the even tenour of our way, and after passing through the



Photo by]

Snapshots during the Luncheon Hour at Eastbourne.

Mr. E. M. C. Instone.

Naturally during our stoppage car after car had gone by, and, having started seventy-seventh, it almost looked as if we would be among the last arrivals at Eastbourne. Anxious to make up for lost time, but deterred by the immovable orders of the Observer, we ran along fully up to schedule limit and soon found ourselves in the interesting old town of Mayfield, the way out of which is by a nasty curvy dip which it would not be pleasant to come upon suddenly in the dark. Through Cross-in-hand we

beautiful Terminus Road, and along the sea front, we pulled up at the Grand Hotel, Eastbourne, at 12.35.

The scene was, of course, a lively one; cars followed one, another in quick succession, proving that, notwithstanding our delay *en route*, we were by no means the last to arrive. Instead of the 45 minutes' rush for lunch the order had wisely gone forth that no car was to restart before 1.30, so full justice was done to the satisfactory spread in

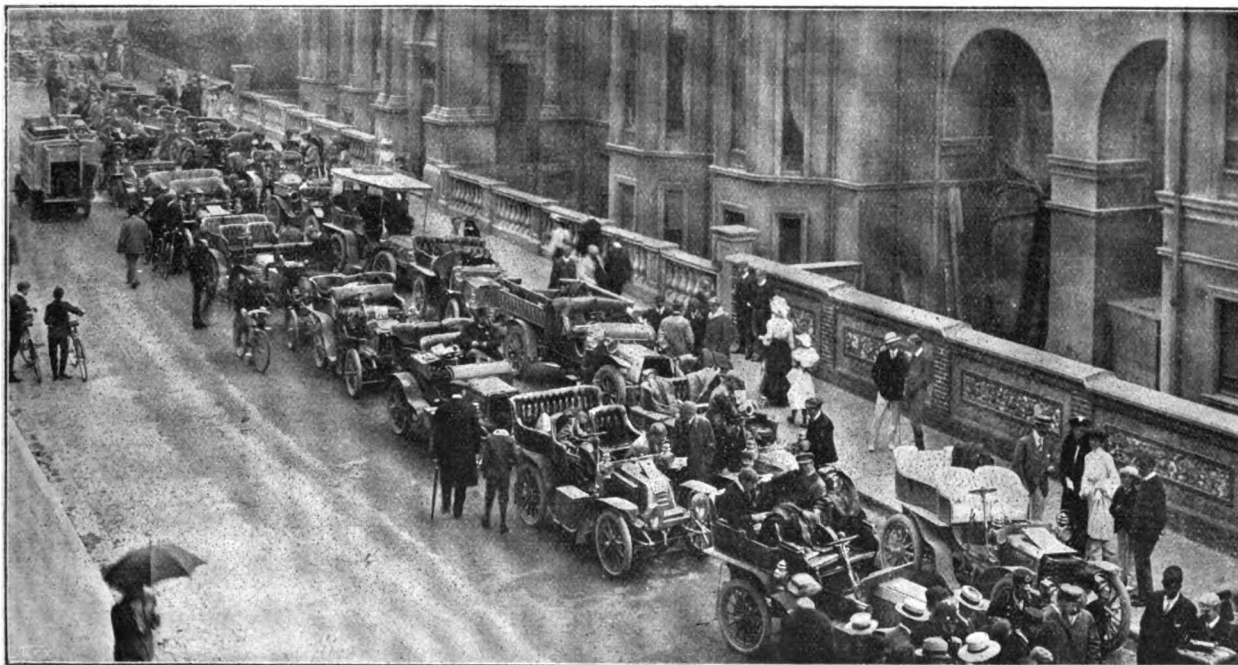


Photo by]

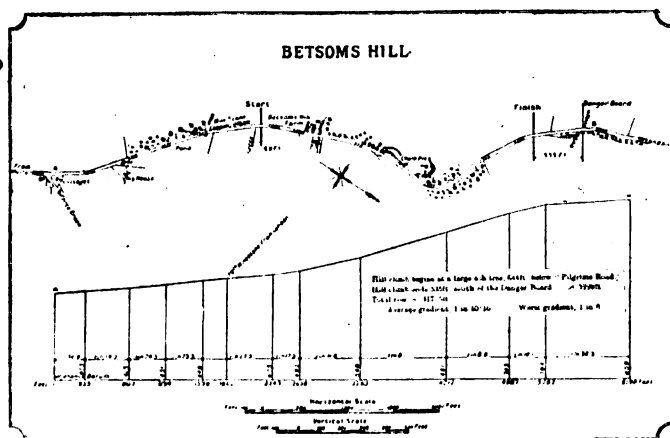
Some of the Cars Outside the Grand Hotel, Eastbourne.

[Argent Archer.

went in good style only to find ourselves "held up" at Culverwood by a brother pressman who was stranded owing to an accident to the 14-h.p. Beaufort (No. 78.) He asked for a seat, but this being impossible, we gave him sandwiches so as not to appear unkind. Horeham proved less agreeable to the Elswick (No. 75), and the Maudslay (No. 128), than to us, for both were stopped at this place, while the 10-h.p. Thornycroft (No. 70), had to replace a valve within a few miles of the little town.

the hotel. Feeling refreshed, we started on the return journey at 1.35, the cars proceeding in one long *queue* through the town and along the familiar route to Willingdon and Polegate, the great drawback to the cavalcade being the long, continuous, choking cloud of dust it raised. At Willingdon, the 12-h.p. Krupkar (No. 54) was met still on its way to Eastbourne, while the Winton (No. 104) was still on its outward journey as we neared Hailsham. As far as Lower Horsebridge the route

was the same as that covered in the morning, but there we turned to the left and enjoyed a speedy straight run for several miles, the dust bogey not being so much in evidence, as by this time the procession had been considerably broken up. Somehow or other our car appeared to know that it was on its way home, for it pulled well and it would seem that the speed allowances were rather more liberal on the second half of the journey, for, in spite of the faster pace, our Observer reported at the different stages that we had occupied the requisite time. There had been rumours of police traps at East Hoathly and Uckfield, but although a careful watch was kept no police did we see nor yet their traps. At Uckfield we struck the hilly country and the breeze, being followed by Mr. Joe Lisle on the 10-h.p. Star (No. 77), which seemed to be travelling along in good style. Near Maresfield the 15-h.p. Pipe (No. 129) and the 18-h.p. Star (No. 99) were passed on the roadside, after which the long steady climb of several miles up Blackham Common was commenced. The hill tried the capabilities of the vehicles to the utmost, and although the 18-h.p. James and Browne (No. 100) passed us, we went up at a good pace and enjoyed a beautiful view from the top of the Common. Soon we were descending to a lower level and running through Hartfield and Edenbridge, only to be followed by another stiff pull up Crockham Hill. Slowly, but surely, we ascended, and all breathed a sigh of relief when the top was reached. A few minutes more and we were in Westerham, to which we had to turn to the right and not to the left as the road book states. A



Profile of Betsom's Hill, Westerham.

welcome rest of fifteen minutes was here enjoyed, the village being alive with motor-cars and motorists.

Between us and the Palace was the stiff climb up Westerham or Betsom's Hill, the average of which is about one in ten, with a piece one in eight. The times were taken with a flying start, but the results will probably not reflect the true capabilities of the cars, owing to the unusual conditions under which the ascent was made. Throughout its whole length both sides of the road were lined with people, cars, and cyclists, but very little space being left for the competitors to make their way. In fact, never have we seen the hill so crowded as on Saturday, when there must have been close on 200 automobiles lined up. Our car, with its lady driver, came in for unusual attention as we started on the ascent, which was taken in good style until near the top, when, owing mainly to the excitement, a *faux pas* was made which brought us to a stand. Miss Levitt, however, was not to be beaten, and on the stiffest part got the car in motion again, and amid the plaudits of the spectators, scaled the summit. Steadily we forged along on the last stage of the journey, which had, however, still more incidents in store for us, for on the bridge at Clock House Station, practically within sight of the Palace, we came to a stop. Grit in the carburettor, as a result of the dusty run home, was at first suspected as the cause of our stoppage, but which, on examination, proved to be the simple, and consequently more annoying one, of an empty petrol tank. A spare two gallons being on board, we were soon on our way

again. Somehow Penge seems to be unkind to Miss Levitt, for whilst in the morning a couple of dogs nearly led to our undoing, it was an unattended horsethat, in the evening, suddenly decided to block our way. However, "All's well that ends well," and, this incident over, we finished our day's run in good style up the Crystal Palace Park Road in company with the 20-h.p. Beaufort (No. 121), and the 12-h.p. Wilson and Pilcher, Limited, (No. 123), arriving at the Palace at 5.33 p.m.

Thus we have added a new experience to our record—that of being driven by a lady a distance of 121 miles. If at first we were somewhat fearful of the prospect, the fear quickly wore away, for we recognised Miss Levitt's ability as a motorist; the way she drove the car, especially up the hills—and only those who have made the journey from Eastbourne to London over the route followed on Saturday have any idea of the number and steepness of the hills that have to be surmounted—is worthy of all praise.

Enquiries at the Press tent later in the evening resulted in ascertaining that ninety-three cars had started on the run to Eastbourne, and that of these twenty-three had accomplished non-stop runs, fifty had made the trip with trivial delays, the returns of five had not been analysed, four had retired, and eleven had not arrived by eight o'clock.

THE WESTERHAM HILL CLIMB.

The scene on Westerham Hill on Saturday afternoon was remarkable, car after car arriving with parties of motorists bent on witnessing the climbing capabilities of the competing vehicles, until the hill was so packed with spectators as to leave but very little room to get through. The cars were not stopped, as last year, but had their times taken as they passed over lines at the foot and at the top of the hill. The crowd undoubtedly interfered with the success of the test, as no room for passing was allowed, so that as cars came to a standstill, as many did, the way of others which were going up strongly was blocked, and were thus prevented from making a good record. At the time of writing the official results are not available, so that only a general impression as to the behaviour of the cars may be given. As will be seen from the profile, for which, as for those of Bury Hill and Hindhead, we are indebted to the official programme of the Trials, the hill has an average rise of 1 in 10, the worst part being 1 in 8. The first to climb, all at a very fair pace, were the 12-h.p. New Orleans, 14-h.p. Martini, 12-h.p. De Dion, 22-h.p. Daimler, 12-h.p. Clement, 10-h.p. Gardner-Serpollet, and 24-h.p. Wolseley, the last being the fastest on the steepest gradient. The stoppage of a car blocked the way of several others, but all got away again. The 20-h.p. M.M.C. went up with ease, followed by a group which had no difficulty in negotiating the ascent. Then came a series of failures, and at one time, at what is known as Hell Corner, were collected half a dozen cars struggling to get restarted again. Three cars, finding that the gradient was too severe for their forward gears, turned round and went up with ease backwards, to the amusement of the spectators.

MONDAY—TO WORTHING. ALL AMONG THE DUST CLOUDS.

Monday opened well and 86 cars started in the official procession to Worthing by way of Dorking with a hill-climbing competition up Bury Hill by way of variety. These daily runs become as monotonous as the fare at an A.B.C. shop, and any little diversion is welcome. To afford some change we gladly accepted Mr. E. M. C. Instone's invitation to occupy a seat on his 22-h.p. Daimler—a fine car not competing in the trials and therefore able to run at its own sweet and swift will. Mr. Instone drove—that was a sufficient assurance of reliability—and for good company there was Mr. A. Farnell, of Bradford, and Mr. Conrad Cooke, who, as consulting engineer, has visited Big Ben, and as an expert is participating in these trials with evident joyfulness.

It had been the intention to linger a little longer than the crowd of cars, and then to proceed along the line of vehicles as far as Dorking, enjoying the dust they raised on the way. This

was a kind of penance for the dust the 22-h.p. Daimler had unsettled on the run to Margate, and was merely an act of retribution intended to redeem the character of the Daimler in the eyes of its Friday's victims. But, alas for our sacrificing natures! We were asked to marshall the cars at the foot of Bury Hill, a piece of work that necessitated a good pace for fifty miles, disturbing any loose Mother Earth that was lying about and proving the advantages of the Free Lance as compared with the Regulation Number.

The number of starters was a tribute to the all-round improvement that has been made in the automobile world. There were the usual listless groups taking a careless interest in our passing through Sydenham and down the steep decline of South Norwood Hill to Selhurst. On through Croydon we went, crossing and blessing the tramlines to turn into the Waddon New Road. Passing by Beddington we tasted dust and passed the 6-h.p. Elswick going steadily and strongly. Nearer Wallington Mr. S. F. Edge was taking walking exercise, the familiar white dog—a sweet little creature—serving as a warning to any policeman who sought to question the Marshal as to the celerity of his movements. After leaving Carshalton we saw a succession of cars and wondered how they would behave in military manoeuvres. If smokeless powder is necessary for the concealment of forces, dustless cars would appear to be equally advisable. It was easy throughout the day to see the trail of the cars rising above the hedgerows for miles, and where the road was hilly and winding the dust clouds indicated to friend and foe alike the way the cars had gone.

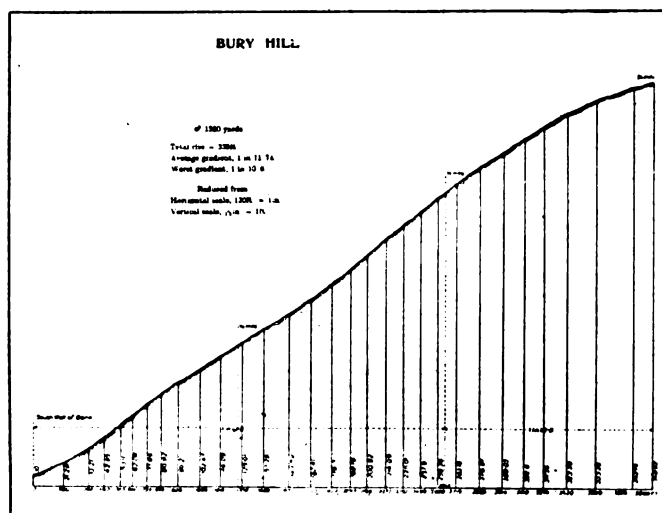
Nearing Sutton, a Century tandem was pursuing an even course, the Observer sitting in solitary grandeur and seeking to maintain a dignity of expression ready to dissolve should any large boulder strike one or other of the wheels. Then the big Italian, the British 7½-h.p. Wolseley, the French Georges Richard, and the 12-h.p. Gladiator drew to the left to allow the free Daimler to go by, and an international hooting arose while Observers scowled. For these competitors do not like to be left behind—not only is it destructive of a lofty suspicion of superiority, but it means substantial tokens of regard in the form of solid soil—for inward as well as outward application. And it must be confessed we were ungallant enough to wave adieu to Miss Dorothy Levitt, whose Gladiator had to keep within the regulation bounds of speed. Quite a cluster of cars were met in Epsom. The 18-h.p. James and Browne was in sight, and a memory of last year's Trial arose, when, riding on a car that dodged between a James and Browne vehicle and a market trap, our motor got the worst of the encounter, and we were rewarded with bruises like medallions. But such impressions wear away, and everyone went peacefully along on Monday. Mr. E. H. Arnott handled the reins—we mean the wheel—of the other Gladiator, seemingly quite as much at home on a car as on a Werner motor-cycle, and certainly more comfortable. The three-cylindrical Argyl was next described, one of the stud from Scotland that shows how keenly the north of the Tweed is interested in the business. An 18-h.p. Mors, the 15-h.p. C.G.V., and a 9-h.p. Eagle were a trio journeying in company. Some of the passengers looked furious through their layers of dust as our horn sang out a cheery farewell. But Mr. Friswell did not relax his smile as he was left behind on his Peugeot, and Mr. Dennis on his car from Guildford recognised the fitness of things that he should adhere to conditions and not seek to burst into our pleasant speed.

So far the run had revealed no curiosity among Observers or drivers to see the stuff of which their vehicles was made, but just before reaching Ashted the temptation was too great for some, and peering ahead, Mr. Farnell—an Observer off duty for the day and apparently reconciled to the fate which had taken him from official leading strings to the guerilla methods of the unnumbered Daimler—fancied he saw a heap, amid the rising dust ahead. Coming closer it was seen that an inspection of the 20-h.p. Germain was being made. After that it was the same chronicle of everyone going well for the next few miles. Mr. Peckham drove his Winton and Mr. C. Jarrott was trundling his De Dietrich along as though road racing was

not in his line. But he has lately taken new cares unto himself, and must do less reckless things than smash his car and dislocate his collar-bone. Such incidents are matters of the past; he has driven very carefully in these trials. The two-cylindrical Argyl was next seen steadily marching after the Brooke, the driver nearly hidden amid the avalanches of dust with which he was assailed, but travelling well nevertheless.

The scenery now gave us new interests, for we went straight down hill into Leatherhead, just catching a glimpse of the picturesque church with its old-world lych gate as we sped by to Mickleham, where Mr. Burford was taking the judges along in legal style. Col. Crompton, Mr. Lyons Sampson and Mr. Worby Beaumont were keenly watching the performances of passing vehicles, and their observations should be a useful contribution to the literature of the industry. Mr. Overton on a Georges Richard, Mr. Frank Wellington on a Brooke, and Mr. Dew guiding a Gardner-Serpollet, were left behind, and just before Box Hill, with its glorious expanse of undulating landscape, we turned a sharp corner and rushed by a Pipe into Dorking—a quiet old town that makes little noise in the world nowadays, although at one time "The Battle of Dorking" was a feature of railway bookstalls.

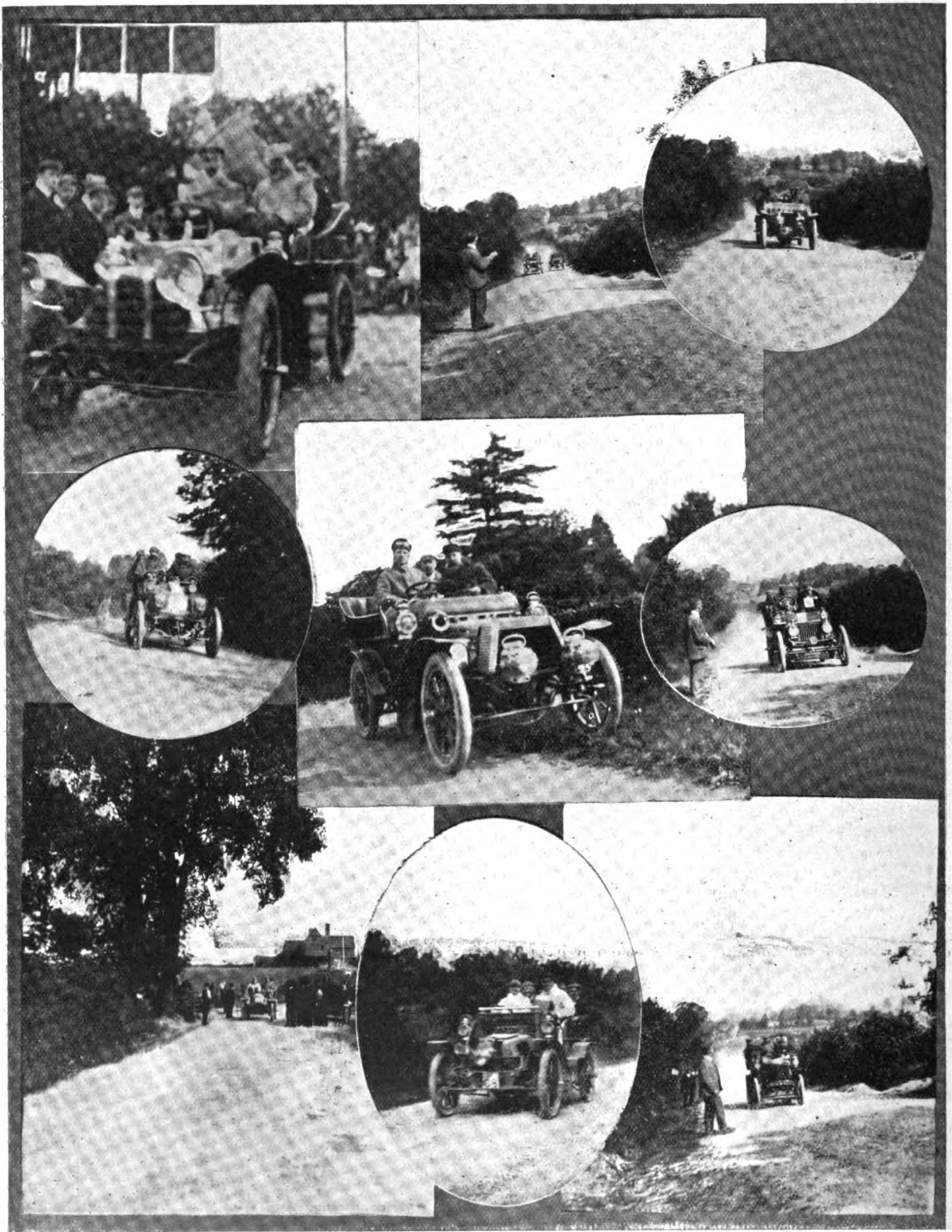
A score or so of cars were already in line—their passengers nowhere to be seen. Evidently there were many charms



Profile of Bury Hill, near Arundel.

unapparent to the casual wayfarers like ourselves who went along, on duty bound and against inner considerations, to the Horsham road. At Holmwood, where we slackened speed to enjoy the prospect, the 20-h.p. Humber was seen making good progress. It was certainly a charming road, the old duck pond, the trees and hedges giving a charming embroidery to the landscape and causing many a pang when it was reflected that under the 16 ft. clause of the new Motor-Car Act such scenes would be possibly closed to those who love to learn of the picturesque pleasures of their native land. This grew upon us after Beare Green had been crossed, and observing the printed instructions as to "Seven Red Cottages all in a row," we turned to the right for Ockley. It was a gently undulating road, and, glad to see clearly ahead, we heeded not the sand fog we made behind. That was a matter for our successors to swallow.

Coming up with a Wolseley car, news of a police trap was borne upon our ears. It added to the zest and interest of the run, and we prepared for pictures. Stealthily a passenger from the Wolseley searched the hedge, and then, upon a piece of rising ground, he peered over. Hurrah! there was a hat, and underneath the hat a body. The watcher beckoned, but just as we were reaching the ground he came back with a look of dejection such as only the greatly disappointed wear. It was not a policeman but a gamekeeper, a most innocent man. He begged his pardon and we went along philosophising on the



Mr. S. F. Edge sets out from the Palace.
Turning the Bend.
At the foot of the Hill.

Something like a Race.
Mr. E. M. Instone's "Daimler."
The "Brooke" on its Way.

Half way up.
The "James and Browne" leaves its Dust behind.
The "Serpolllet" Steam Car.

THE BURY HILL CLIMB.

suspicious nature of the human race. Mr. Instone's views on the topic would make a useful companion to Whateley's Logic.

Then for a switchback ride to Slinfold, up hump and down grade in rhythmical succession, with plenty of English soil ascending in clouds sufficient for any air ship to travel on in comfort and security. But we were not the only dust raisers on the road. For many hundred yards ahead the wind was lapping the dust and sending it circling into the air and competing with motor-cars in what the public regard as their monopoly. At Billinghamurst, part of the road was "up" in the most approved London fashion. The district was quite as pleasing as any we had come through, and a strange contrast to the extremity of the old Roman road that ran from Billinghamurst to Billingsgate, where the language comes from. The old Stane Street from Chichester to London crossed this parish, terminating near the famous fish market. Have we lost the art of road making? Certainly much might be learned from the Romans. Up Codmore Hill we descended into picturesque Pulborough, its Early English church being a striking feature of the landscape. In this old place, full of reminiscences of Roman occupation, is a garage—the word standing out prominently from the other bank of the Adur, which we crossed by a bridge and then went on our speedy way through Hardham and Waters-

Dechamps, the 15-h.p. Maudslay, and the 10-h.p. De Dietrich. These all took the hill in good steady style, and closely followed by the 10-h.p. White steam car, the 15-h.p. Pipe, the 16-h.p. Rochet Schneider, and the Gardner-Serpollet. Mr. Jarrott on his 24-h.p. De Dietrich and the 12-h.p. Albion came up practically together. The 12-h.p. Georges Richard was going slow and misfiring. The 5-h.p. Oldsmobile was moving somewhat wearily when the Fiat came along in really good style. The James and Browne passed the Hallamshire, and then we had the spectacle of the 10-h.p. Thornycroft being left behind by the Gladiator of similar horse-power. The 10-h.p. Eagle and the 20-h.p. Winton went up well, and then Mr. George Iden brought the 20-h.p. M.M.C. up the hill in sportsmanlike fashion, going strongly. The Dennis, a couple of Argylls, with Mr. A. Govan as a passenger in one, and a 10-h.p. Peugeot led the way for the Daimler brake, with ten passengers, and making little trouble of the task to be encountered. Two Wolseleys came in Indian file, with another military name, Mr. Wellington, succeeding. Mr. Thompson on his Achilles took the hill nicely, but was overshadowed by the good performance of Mr. Bush on the big Daimler. The 15-h.p. Germain was followed by Mr. W. H. Astell on his 12-h.p. New Orleans, the wind shield being a conspicuous feature of the vehicle as it ploughed along. Mr. J. Lisle drove the Star, his bowler hat



Photo by]

On the Front at Worthing.

[Argent Archer.

field to Bury. On the way we met Mr. J. F. Ochs on the Napier which we last saw when in an Irish bog. As we entered the dust cloud he raised, we almost wished—but more generous feelings prevailed—that a similar adventure would again befall him.

THE BURY HILL CLIMB.

Arrived at Bury, we found the cross roads so much used that a flying start down hill and crossing the line at the point originally selected was too risky, so, after a hurried consultation, it was decided to have a standing start. Mr. Instone remained at the bottom of the hill to marshal the vehicles; his trio of passengers went upwards. Messrs. H. Sturmev and H. J. Swindley were found at the red cart shed a little way up the hill, the time being taken from that point to another 1,320 yards further on. The total rise of the hill is 338 feet, the average gradient being 1 in 11.74, and the worst 1 in 10.8. Then the writer stationed himself to watch the ascent of the cars and snapshot a few. How they came along can best be judged from the official chronicle; but some impressions are of some interest if of little value. The first to make the ascent was a 6-h.p. De Dion, followed by the 16-h.p. Argyll, the 20-h.p. Humber, the 24-h.p. Georges Richard, the 20-h.p. Beaufort, the 15-h.p. Belsize, the 9-h.p. Argyll, and the 12-h.p. Relyante. Then came Mr. J. W. Stocks on the 12-h.p. De Dion, the 5-h.p. New Orleans, the 10-h.p.

giving him quite a halo, and showing a courage that was unique, for no other driver was so heterodox in headgear. The 7½-h.p. Wolseley proved itself a climber, as did also the Darracq and Rex in the same class. Mr. Dennis, Mr. Friswell on a 12-h.p. Peugeot, the C.G.V. the 10-h.p. White car, with Mr. Loxton Hunter as his Observer having his first ride on a steamer, the 12-h.p. Sunbeam, with water steaming hot, and Mr. J. Overton on a 10-h.p. Georges Richard were the next contingent of competitors, the line of succession being broken by Mr. Burford bringing Mr. Worby Beaumont along. Then came a Wolseley with the Clarkson steam omnibus in hot pursuit. The word hot is used advisedly, for the passengers appeared to be enjoying all the warmth of a tropical atmosphere. Miss Levitt brought her Gladiator along, and then came the Martini, the Simms Welbeck, and a Beaufort. An Oldsmobile came along very well, followed by the 16-h.p. Maxim, the 6½-h.p. Clyde also making good progress for its size. The 9-h.p. Darracq ascended in a wayward fashion, and was, of course, passed by the 20-h.p. Thornycroft. The 9-h.p. James and Browne seemed somewhat of a slow coach and was soon passed by the 18-h.p. Mors with five passengers. After the great car came the Baby Peugeot, an infant of good constitution and staying power, the 10-h.p. Spyker and the 10-h.p. Horbick in quick chase. The 8-h.p. M.M.C., the 10-h.p. Lanchester, the 14-h.p. Brooke, the 14-h.p. Brush and

9-h.p. Mohawk Manon, with the Humber in the rear, ended our interest, and an ascent on foot began. At the top of the hill the view of the country was amplified and the glorious landscape was worth the effort of walking and the feeling of hunger that rose with every foot of the road. The Rex Tricar, with the 10-h.p. car from the same works, and a 6-h.p. Swift diverted attention from the picturesque by coming well along with the 20-h.p. Germain in pursuit. There were a few others, but a raid on the Commissariat Department effectually dispelled interest. We heard, however, that the passengers on the Simms-Welbeck had been given walking exercise near the top of the hill, and the Century Tandem and the Regal had had momentary stops, resuming, however, and finishing in proper style.

After the hill climb the cars went on by official way to Worthing. We, scorning such restrictions, basked in the picturesque awhile and then went across country to meet the vehicles on their return way at Horsham. At the bottom of the hill the Cadillac was seen coming along. Away we scooted in good style and, in the absence of traffic, we gave a burst of speed—exhilarating, stimulating, and tempting enough to have pleased a Surrey J.P. One instance of a foolish signboard made us lose a mile or two—a matter of small concern to a Daimler with Mr. Instone at the helm. Instead of the finger boards being at different heights on the post, the three arms were on the same level, that directing the way to Horsham being immediately hidden by another, a piece of confusion which the local authorities should rectify without delay. At Horsham we found the judges at lunch and naturally followed so excellent an example. At half-past two the 20-h.p. Beaufort was the first arrival at Horsham, and then came sixty others in rapid succession. The drivers and passengers looked as though they had passed through ages of experiences. Black moustaches were coloured with the dust of the roads, fair men seemed grey with mother earth. I thought of Burns:—

“Oh wad some power the giftie gie us
To see oursel as ithers see us,”

and mentioned the lines to a Scotchman on an Argyll. He looked fierce, and, getting hold of his starting handle, merely said “You’re another,” for we, too, had been through miles of dust and were little better than the crowd.

But really the procession was a shocking one. What a mob of undesirables for a drawing room!

We were not long in leaving Horsham. To give the newspaper men a little incident—though only a very little one—a Sunbeam collided with a Thornycroft, or a Thornycroft collided with a Sunbeam. Anyhow, the latter came out of the encounter with nothing worse than a bent wing. Thence onwards, *via* Capel, to Dorking, we went at a good rattling pace, leaving behind delightful country and plenty of dust, through which succeeding cars could gallantly negotiate. On the way some interesting incidents were witnessed, as we swept by Captain Deasy on a car that travelled extremely well, and a score of others of lesser power. For a few minutes Mr. Iden was seen trying to get beyond the Chelmsford bus, but the vehicle did not take the straightest of courses and careful manoeuvring was necessary. Then we followed and scurried along in good style. Just before entering Capel the Belsize was seen in difficulties, and then we had a mile or two behind a noisy vehicle shod with solid tyres. Beyond Holmwood the judges were half hidden by bushes, observing from a position of supposed seclusion the performances of the vehicles from the rear. And then on through Dorking and Betchworth to Reigate, where lurking suspicion came over us and the police were less ubiquitous than elsewhere on the homeward run. Beyond Reigate we saw a quartette of crawlers—a 24-h.p. Wolseley, a 22-h.p. Daimler, a 15-h.p. C.G.V. and a 24-h.p. De Dietrich. They were evidently anxious not to take advantage of their smaller rivals—a sacrificing ordinance that also had the merit of preventing marks being deducted for excess of punctuality. The rest of the run was purely formal, and at five o’clock we saluted Marshal Edge at the Palace. However much we

hurried, he generally got there first; possibly he gained time by fasting while others lunch.

Of the cars that started in the morning thirty-four had absolutely non-stop runs; forty-two were delayed for a minute or two—and only two retired from the fray, one being the 15-h.p. Belsize, which broke its connecting rod at Kingsfold on the return journey.

TO WORTHING BY THE “MARTINI.”

When Captain Deasy offered us a seat on the 14-h.p. Martini car, we were pleased to find that the day chosen included a hill climb, as these cars being known in Switzerland, where they are manufactured, as “Mountain-climbers,” we concluded that the hills of Surrey and Sussex would be as child’s play to them. We started No. 88 at 7.45 with the full number of four. The weather was delightful, with rather a strong breeze blowing, and as the day wore on the sun gained considerable power, the only drawback being the terrible amount of dust. In places where a number of cars were travelling at short intervals apart it developed into a dust storm, and left very visible marks upon the clothing and features of the occupants. Nothing transpired to mar the pleasure of the journey. The rule as to passing being in most instances rigidly adhered to, it became more or less a “procession,” although, naturally, some cars took advantage of their superior horse-power where they could without infringing the regulations.

The route lay through the well-known, but always delightful scenery of Surrey and Sussex, the trees now decked in all the beauty of their autumn dress. The only compulsory stop on the way down was at the busy little town of Dorking, where most of us took advantage of the fifteen minutes’ wait to stretch our legs, and also to refresh the inner man. Automobilists are hungry folk, and 6 a.m. is to many an unearthly hour to make a really good breakfast. The fifteen minutes soon passed, and the signal to start being given, away we went through Ockley, Slinfold and Billingshurst, all charming places, to Pulborough, with its pretty river, known to all London anglers as a haven of delight, and also a good place to fish, which perhaps appeals more directly to them. Arrived at Bury, we all stopped at the foot of the hill, and were started at close intervals for the climb. The official results are not yet known, but we can say that the “Martini” went up in fine style, on third speed most of the way, passing on the way five cars of various makes and weights.

Thus far the police had left us alone, but nearing Broadwater we were warned of a measured $\frac{1}{4}$ mile. Their efforts, we believe, were in vain, although the constable we spoke to professed to have stopped several. Strange to say, it was at this particular village that anything approaching a catastrophe, as far as we know, nearly occurred. The children here, as in all the places we passed through, were greatly interested spectators, but, the police being otherwise engaged, the children were left to themselves. One little mite, not realizing the danger, ran in front of our car. Fortunately the driver applied the brake instantaneously, otherwise the pleasure of the trip, as far as we were concerned, would have been completely spoilt. Warne’s Hotel, our destination at Worthing, was reached at 12.15. Our Observer having given us leave until 1.30, we repaired to the hotel, a motley looking crowd. A stroll on the front after lunch, among the crowd of automobilists and inhabitants gazing at the wonderful display of cars, was decidedly interesting. The air was fresh and invigorating, and no doubt many would have delayed their departure, but at 1.37 we started on the return journey. The police were again active near Finden and Southwater, but we had timely warning of their movements. A compulsory stop of fifteen minutes was made at Horsham, and after that the journey was uneventful. At various stages we passed cars on the roadside less fortunate than ourselves, but heard of no serious breakdown. We arrived at the Palace after a non-stop run at 5.15, tired and dusty, but thoroughly pleased with the day’s experiences.

TUESDAY—TO FOLKESTONE.

MID DUST AND RAIN.

WITH the barometer falling, the outlook for Tuesday's run to Folkestone was not altogether hopeful. However, where duty calls there is no faltering, and having accepted Messrs. Mann and Overton's invitation to a seat on the 24-h.p. Georges Richard (No. 103), we prepared for the worst, that is to say, of



The Cars passing through Ightham.

weather, for, as regards the car, nothing better could be desired our run, as the narrative will show, resulting in a non-stop record. When we arrived at the Palace and sought out No. 106, we found it to be unlucky in its starting number, having to be content with a position a long way down the line—to be precise, the 79th. The party consisted of the Marquis de Noë, who has come over from France to drive the car, the Observer, Mr. Walford, the writer, and a French mechanic whose knowledge of England and of the English language dates from the early part of last week. On lining up on the Parade outside the Crystal Palace, it was seen that No. 91, the 12-h.p. De Dion driven by Mr. Stocks, occupied the position in front to us, while to the rear was No. 62, the 7½-h.p. Wolseley. Some misgivings of coming trouble were created by the discovery, just as we were about to start, that the pipe conveying the petrol from the tank to the carburettor had sprung a leak. However, this was temporarily patched up, and at 7.55 a.m. we were officially despatched on our long journey of 137½ miles. As far as Maidstone the way was over the same road as that followed on the run to Margate, so that the drivers were familiar with the ascents and descents, not to speak of the sharp and winding turns to be encountered in that portion of the journey. At Shortlands we came across the 10-h.p. Horbick (No. 56) which, after making a non-stop run on Monday, was, as events proved, in for a bad time. The "tricky" entrance into Bromley was safely negotiated, and the stiff hill leading up to Chislehurst Common reached. Here we discovered the advantage of having 24-h.p. at our disposal by taking the hill in excellent style, passing three or four cars *en route*.

Foots Cray next came into view, after which we had a long straight processional run to Swanley, amid market gardens and Kentish orchards, with five cars in view in front of us and four following up closely behind. At Swanley the unfortunate 6½-h.p. Cadillac (No. 14) was seen to be in difficulties, which it is to be hoped were of but a temporary nature. At

this point the rain endeavoured to come to the aid of the motorists by laying the dust, but instead of doing the work gently it eventually thought better of it, holding off to give us a good drenching in the afternoon. A long steep descent through a chalk cutting brought us to Farningham, with its ancient bridge across the Darent, after which came a long, steady pull for about 5½ miles to the summit of Wrotham Hill. The view from this point is considered one of the best in the whole of Kent, but on Tuesday it was nothing more than a vast sea of mist. The long pull brought the 14-h.p. Brooke (No. 68) and the 14-h.p. Renault (No. 113) to a brief stand, while the 10-h.p. White steamer (No. 116) was passed, busy repairing a punctured tyre. The 24-h.p. Georges Richard kept up a steady, unfaltering pace, and the descent into Wrotham, though somewhat dusty, was greatly enjoyed. Some amusement was caused near this old-time place by the appearance of two policemen mounted on bicycles, causing thoughts of police-taps to immediately fly through the mind. It is strange how instinctively the pace is slackened on sighting a policeman—be the speed well within the legal limit, there is an uncontrollable movement to slacken. Without incident we found ourselves, exactly as the clocks were striking 10 a.m., pulling up in the High Street, Maidstone, close to the gun that seemed to threaten all who made unnecessary commotion on the King's highway. Maidstone has seen some stirring scenes. In the reign of an earlier Edward it was invaded by Continental merchants, who started the woollen industry there. In the 17th century General Fairfax stormed the town; in the twentieth century a new event was added to the category of great epochs in the town's history by the temporary stay—for fifteen minutes—of four score motor-vehicles, representative of a movement that will do more for the industries and prosperity of Kentish towns than ever did Edward III. or General Fairfax.

Leaving Maidstone at 10.15 a.m., we next made for Ashford, the steam wagon of the Mid-Kent Water Company indicating to us the way to be followed. For the first four or five miles there is little of interest on the road, although farms and villages are passed in pleasant succession. We got a glimpse, as we passed by on our fourth speed, of Leeds Castle, which, built in the thirteenth century, is still surrounded by its moat. Harrietsham, an old time village, famous since the seventeenth century as being the residence of Nicolas Wood, who by eating a whole hog at one sitting earned the sobriquet of "The Great Eater of Kent," was rapidly traversed



A Wolseley Paddling through the Rain.

in company with a number of other cars, including the 14-h.p. Brooke, the 16-h.p. Rochet-Schneider, and the 12-h.p. Gladiator driven by Miss Levitt, and soon we had left Lenham and Charing, two spots we hope to visit, when, with time not so pressing, their reminders of a bygone age may be inspected. Since leaving Maidstone we had not passed a single car *en panne*, the procession keeping steadily on through Ashford and Willesborough,

THE FRINGE OF THE TRIALS.

where the rain began to fall in earnest, and where, in addition, several shopkeepers had been sprinkling the roads in front of their premises to lay the dust. At length the sea came in sight, and soon we were running alongside it at Hythe, where the three-cylinder Argyll, No. 49, was seen to be in distress. Just as each evening's run finishes with the stiff ascent up to the Palace, so did the outward run to Folkestone terminate with an arduous climb from Sandgate. Up we went, however, and within a few moments came to rest on the lawn in front of the Metropole, our inward time being recorded as 12.7 p.m.

The return journey in our case was commenced at 1.45 p.m. in a storm of rain, which not only quickly laid the dust but converted the roads into such a sticky condition as to necessitate very careful driving to avoid side slips. At Hythe we met the 6-h.p. Regal (No. 5) still on its way to Folkestone. Almost as far as Wrotham the route followed was the same as that of the morning, and, notwithstanding the discomforting rain, a steady pace was kept up. Dust may convert us into millers and also cause motor troubles, but our experience is that, bad as is the dust, it is preferable to continuous blinding rain. To add to the troubles of the motorists, it was market day at Maidstone, and every mile or so on the way to that town either a flock of sheep or a herd of bullocks, and some times both, had to be encountered. At Lenham, twenty-six miles from Folkestone, we met the 10-h.p. Horbick (No. 56), still on its outward journey, and having the bad time already mentioned. As we neared Maidstone there was a slight rift in the clouds, and the rain gradually tapered off.

After a fifteen minutes' interval at Maidstone, where the motor cars were mixed up with a thick crowd of farmers' carts of all kinds, the last stage was begun at 4.15, in company with several cars which we had not previously seen that day, including a Lanchester, two White steamers, and Mr. Friswell on the 12-h.p. Peugeot (No. 119). Ightham, Riverhead, and on to the long climb up Polhill, which was taken without a murmur by all the cars in sight, and then through Green Street Green, where its troublesome dogs were once more in evidence. Apparently we were all somewhat in advance of the allotted time, as Lock's Bottom was passed through at a crawl. All along there were signs that heavy rain had been falling, particularly on the descent from Hayes Common, at which point the roads were in an extremely greasy condition. Without incident or accident, we plugged steadily along through West Wickham and Penge and on to the Palace, the gates of which we entered at 6.12 p.m., with a record which secured the 24-h.p. Georges Richard a non-stop award for the day.

Enquiries later in the evening showed that a total of 84 cars had started for Folkestone in the morning, and that at 7.45 p.m. thirty-nine had secured "non-stop" records, thirty-two were back after brief delays, whilst thirteen had not arrived.

WEDNESDAY—TO SOUTHSEA.

AS A FREE LANCE.

UPON reaching the Palace on Wednesday morning we found a vacant seat on a 12-h.p. Clement. This car has not been among those competing since the first day, but has been running independently every day. We were thus free to go as we pleased, and a start was made at 7.40. The morning was inclined to be wet, but the weather improved as the day progressed. Arrived at Hindhead we climbed that well-known hill, among its picturesque surroundings, in first-class style, on third speed nearly all the way. After passing through Fratton we were warned that the police were about, but, driving with care, nothing serious happened. Entering Southsea we were received by the Police Superintendent and several mounted constables, who escorted the first batch of arrivals to the Esplanade Hotel. Lunch over, we left at 1.32 for the Palace. At Sutton we found Mr. Peckham in serious trouble with his 20-h.p. Winton. The crank shaft had broken, and the whole of the day had been spent in fitting a new one. The Palace was reached at 6.5 after a most successful and pleasant journey.

MARGATE, Thursday.

Leaving with regret the busy scenes at the Palace in the afternoon, solace was soon found in the crisp air of the bright autumn day, and as the roads were in fine condition, motoring was indulged in under the most perfect of conditions. Bromley was quickly reached, and Polhill was soon in sight. Down here, and through the village, a turn to the left finds us on the hilly and winding road to Ightham and Wrotham, and thence we are soon in the High Street of Maidstone. An enquiry here elicits the fact that Charing has to be passed (fourteen miles) to reach Canterbury, yet another run of the same distance. With the night drawing in, and over some lovely roads, we quickly find our way to our destination—Margate. On Kent roads there is usually heavy traffic, and to-day was no exception to the rule. The dust also, inevitable on these roads, was troublesome, but a pleasant surprise was a lane, about a mile from Charing, just wide enough for the car, with a signpost pointing to Canterbury. Without hesitation we turned round here and found it dead straight, with no traffic, only lots of tame partridges, which scarcely condescended to run out of the way. A lovely spin was indulged in, and the journey was altogether delightful. By now it would have been thought that all the epithets which could be applied to motorists had been exhausted. But apparently this is not so, for a passing cyclist greeted us with, "Halloo! dusthole." Our distance for the day was eighty-two miles.

MARGATE, Friday.

Friday broke gloriously fine, and favoured indeed we felt that fate had ordained our business should be conducted under such pleasant conditions. Sunning ourselves in the doorway of the hotel we met Mr. Edge, who had arrived at 11.15 after an uneventful journey, and he had for company Mr. Vincent, of the "Times," and his usual bulldog. Finding it was time to take up our position in Cecil Square, very commodious and quiet for the purpose of assembling the cars, we there waited patiently with others for the first arrival. This was Mr. Weigel, on a Clement, and he rode into the Square at 12.13, eighteen minutes, we afterwards learnt, ahead of his time. A couple of minutes' interval, and then came Mr. Du Cros; and Mr. Instone, with a party of Pressmen, being followed quickly by four other cars, including the ten-seated Daimler, until at 1 o'clock there were fifteen cars, with numbers on, in the Square.

Shortly afterwards Mr. Weigel left for the homeward journey, followed by Mr. Edge, and at short intervals by others, but in the meantime arrivals were coming in slowly, Miss Levitt, in company of several others, arrived at 11.30. A dozen cars followed in quick succession, and then a party of eleven, all close up, led by Mr. G. Iden on his M.M.C., appeared on the scene, the remainder, to the number of over one hundred, coming dribbling in within the next hour.

HASTINGS, Friday.

At two o'clock we left the scene at Margate, having to proceed to Hastings on our way for the morrow's function at Eastbourne. The route lay through Ramsgate, Sandwich, and Dover, and here we would like to state how difficult it is to find one's way about in the Isle of Thanet. The signposts are only painted on one side, and all the roads are so made that it shall not be possible for the unwary traveller to lose himself; but if he perseveres he is sure to find himself back to the point from whence he started. The finding of our way proved most difficult, but ultimately Sandwich was reached, and then there was a delightful run over the Downs into Dover, the surface of the road being in grand condition and no traffic about. To Folkestone, over the cliffs, and Romney, across the marshes, to Rye, is a run well known, but portions of the latter road are simply wonderful in the way they curl about. A snake could not indulge in such contortions, and the only similar road to compare it to would perhaps be the Irish Gordon Bennett course. A shilling toll at Rye, and for this, being on private ground, we indulged

in a mile spin on fourth speed, a luxury we seldom enjoy. To Winchelsea is not far, but, leaving the lane, a portion of a hill, at an acute angle, is struck, with a gradient of perhaps one in seven. On this hill there is usually traffic, and the turning is one of the most dangerous within our knowledge. Hastings, still through the same narrow turnings, is soon reached, and here our narrative ends for the day. Distance, seventy miles.

EASTBOURNE, Saturday Afternoon.

Saturday again broke fine, and leaving the Palace Hotel, Hastings, one of Spiers and Pond's, where it was impossible to obtain ham and eggs for breakfast, we soon reached the beautifully-situated Grand Hotel, at Eastbourne, when the hall porter handed us an open telegram from Mr. Joy, announcing two police traps prepared for the return journey between Dicker and Hoathley, and Wellfield and Crowborough. Mr. Edge, with Mr. New, did not arrive till 11.27, and from him we learnt that he had been the means of breaking up two police traps, within half a mile of each other, between Frant and Mayfield, although at the expense of having his name and address taken. The *modus operandi* of the police was very simple. A measured distance, an electrical timing device, two policemen, and a clerk, with a desk, to take the numbers. That's all, and that's what the Automobile Parliamentary Party has prepared for all of us in the coming year. The next car was Mr. Weigel's, but we learnt his vehicle had been disqualified; therefore the first actual competing cars in were Mr. Astell's New Orleans, a 15-h.p. Germain, at 11.43; the Martini came next, and others followed in quick succession until at 12.10 there were fifty-three cars in line. An informal committee meeting was called, and it was decided to postpone the return journey till 1.30, a decision that was much appreciated, and which enabled all and sundry to partake of the bountiful spread provided at the Grand Hotel. Punctually at the half-hour the cars went away, literally *en masse*, without regard to order, and within a few minutes only a few stragglers were left, including one that did not seem like moving any more. Clarkson's Steam Supplies Van reported doing good business, and must have injured the trade of the local dealers.

At Eastbourne, the greatest interest was taken in the cars, and the well-dressed and fashionable folks present evidently knew something of the subject they were discussing, by naming this and that car. Public-service vehicles seem very popular in Eastbourne, and the two-decker Milnes omnibuses at Hastings were always full.

BRIGHTON, Saturday.

Leaving at three o'clock, we met Mr. Peckham, on a Winton, just entering the town, and while passing Polegate, a car with a number on was seen in trouble by the wayside. Lewes, Brighton, and Worthing and back to London-super-Mare completed our day's run. Distance, fifty-six miles.

WORTHING, Monday Afternoon.

Sweet September is retrieving its reputation, and, although the air in the mornings and evenings may be chilly, yet the afternoons are as warm as one could wish. Sunday at Brighton was an immense success; the sun shone and the skies were cloudless, and the "Old Ship" was seething with excitement as motor after motor came to the door, disgorging its passengers. It certainly made us marvel how Mr. Burekhardt found accommodation for all his guests. The trains also brought down a rush from the Palace, and these latter filled up the day by riding up and down the front in "flits," or making excursions on friends' cars. The sea front, as usual, presented a busy scene, but the majority of vehicles were motors, and outside almost every hotel cars were to be seen in numbers. Among the notabilities seen were Mr. Dalziel, M.P., Capt. A. Hill, M.P., with a 20-h.p. M.M.C. and a 7-h.p. Panhard, two men in semi-military uniforms and white service caps, the Grossmiths, etc.

Monday opened with the sun shining brilliantly, although there was a powerful east wind blowing (and may it continue all this week, and before nine o'clock we were again travelling on our Mercedes, making for Bury Hill, to witness the hill climbing. Unfortunately, at Washington, Mr. Peall, on his new 10-h.p. Panhard, took a wrong turning and we followed, with the result that our original intention had to be abandoned, and

therefore we made for Worthing, through Findon. Distance, twenty-one miles.

At Worthing, Host Warne had made elaborate preparations for the welcome of his visitors, and, in addition, on the lawn in front of the hotel numerous lounge seats and tables had been placed, and here, under the pleasantest of conditions, these notes are being written.

Smiling and smart as usual, Mr. Edge, with the "Evening News" representative as passenger and his "bull" as companion, appeared on the scene at 10.30, and his arrival was preceded, as usual, by the Clarkson Supplies Van, which affords some amusement between us, as we keep meeting in all sorts of out-of-the-way places. We learnt that ninety cars had started from the Palace, and in the meantime several private cars had arrived from London. The first numbered car was the 6-h.p. De Dion, which arrived on time at 11.30; this was quickly followed by five others, and before 12 o'clock thirty-two cars had arrived; by 12.15, sixty-four; and others were coming in in quick succession. The cars are beginning to show signs of the absence of the hose pipe, although the dry weather has prevented them from being as bad as they might have been. One or two punctures occurred, but otherwise the run seemed to have been devoid of incident, except for the discovery of a police trap about a mile outside of Worthing. Thanks to a friendly cyclist, all escaped stoppage.

FOLKESTONE, Monday Night.

The start for the return journey was delayed till 1.30, and the cars quickly disappeared. For ourselves, we made for Folkestone, through Shoreham, Brighton, Lewes, and by various unknown lanes, many with the grass growing over, to Battle, where an unkind policeman directed us through lanes until we came out near Robertsbridge and had to retrace our steps almost to Hastings, causing a delay of more than half an hour. However, we ultimately struck Winchelsea and Rye, and found a new and shorter way over the Romney Marshes to Hythe, reaching Folkestone after a very cutting ride in the teeth of an easterly gale. Distance for day, 101 miles.

FOLKESTONE, Tuesday.

Five minutes after half-past ten this morning, and in the midst of a slight shower, Mr. Edge arrived at the Metropole, Folkestone, with Mr. Sharp as passenger, and accompanied by his usual four-footed friend. A consultation with the manager ensued, and it was decided that the cars should be drawn up on the beautiful flowered lawns, and Mr. Edge's car was then placed in position with the bonnet facing the hotel. The morning had broken warm and close, with ominous looking clouds about. It was thought these would blow away, but as the cars began to arrive the rain commenced to fall in earnest. The previous spots were thought to be just the pride of the morning, but that this was not so many proved afterwards by the fifty-mile ride we had in a blinding storm. The first to arrive was Mr. Harvey du Cros, jun., on his Ariel, but as this was not in the competition, it had to stand alongside our Mercedes. At 11.40 a.m. six cars came in together, with Mr. G. Iden on a M.M.C. leading, then another dozen in groups and singly, all close up, until by 12 o'clock forty cars had arrived; another ten came in within five minutes, and by 12.10 at least seventy cars had arrived—drivers and passengers alike were smothered in dust, while the cars certainly looked as if a good shower of rain would do them good. Eighty-four cars started from the Palace, and, as far as we could gather, the run was devoid of anything sensational. Valves stuck and broke; carburettors got choked with dust, radiators leaked, and generally those who had been hitherto jubilant seemed to be somewhat in the dumps. As a matter of fact all realise the severity of the trials, for there are no private motorists who desire to run their cars under such circumstances as they are now being run day after day, for a thousand miles, without being touched.

SOUTHSEA, Tuesday.

Leaving the courtyard of the hotel at Folkestone a few minutes before one, we started on our journey for Southsea, and in the midst of a blinding storm, and over greasy, chalky roads, we pursued our way across the Romney Marshes, to Rye and

Winchelsea, having to stop for three level crossings and innumerable flocks of sheep and herds of cattle, through Ore and Battle, over fine gradients, and then over similar superb roads to Lewes and Brighton, where a halt was made for an hour. Then came a run through Arundel, Chichester, and Havant, with the roads in good condition and no signs of recent rains, to Southsea, which was reached in the dark about seven o'clock. Distance for day 121 miles.

SOUTHSEA, Wednesday.

LAST evening a thick mist settled on Southsea Common, and on Wednesday morning it had not cleared; in fact, was rather worse. Sleeping in an hotel facing the sea, the writer was kept awake all night by the hoarse soundings of fog-horns of vessels in the Channel, and when at last drowsy Morpheus claimed us for his own, it seemed but for a moment, for the most discordant sounds were heard, blatant enough to waken the sleepers of Ephesus. Clambering on to the leads outside the window, a glance showed us about forty of the military, and these were evidently having a lesson with musical instruments—for the instructor played a moment and then the novices essayed to imitate. The result was—well, heartrending.

Taking up our position in the mist, we patiently awaited the coming of Mr. Edge, but 11 o'clock went by, 12 o'clock passed, and still no sign of the Napier—or any other car. What was wrong? The Hon. Marshal was always so punctual, and still there were only a few local cars about—curiously enough, two, a De Dion and a 7-h.p. Panhard, being driven by ladies.

However, shortly after twelve a Clement came down from the Palace, and we learnt that the first car, driven by Mr. Joe Lisle, who enters the noble army of benedicts next week, had been stopped just outside the town, so that more cars should come up and have the honour of being escorted through the town by the local police. The honour, however, was not much appreciated, but the competitors had to have it, and it was 12.30 before the Star car appeared at the head of a small procession of cars close on the heels of the perspiring horses of two galloping mounted patrols. Within a moment or two, twenty cars were in line; then came Mr. Stocks at the head of eleven more, followed by the Serpollet, and just outside was a 15-h.p. Germain mending a puncture. The cars then dribbled in at intervals, until at 1.30 arrived in a bunch a 12-h.p. and a 10-h.p. Gladiator, a 14-h.p. Brooke, a 10-h.p. Georges Richard, a Lanchester, a Beaufort, a New Orleans, a Spyker, a 20-h.p. M.M.C., and one or two others—but already the first car had started on its homeward journey.

The next lot of arrivals was headed by Capt. Deasy on a Rochet Schneider, followed by a Georges Richard, a Regal, an Elswick, and a Century. The Supplies Van duly appeared on the scene before twelve, having come over from Brighton, where it had been detained overnight through the fog.

All had the same tale to tell of police traps—some said there were dozens of them, all agreed there were a number, but in almost every instance, thanks to friendly cyclists, these were circumvented. Several cars in coming down had trouble with their valves carburettors, etc., and there were one or two punctures, but the comparative absence of dust was much appreciated. Mr. Edge we much missed, for had he been there the cars would have been lined up better.

For ourselves, owing to an unfortunate back-fire, through someone having supplied a gummy material called oil, our mechanic had to rest for a couple of days, so we have had the felicity of a four-hours ride in a stuffy railway carriage. We could have done the journey on our car quicker, under more comfortable circumstances, and at a great deal less cost.

By wire we learned in the evening that of the eighty-three cars which had left the Crystal Palace in the morning, only thirty-five had arrived back at eight o'clock, eighteen of which had made non-stop runs.

ENTRIES for the speed trials to be held on the Dourdan Road, near Paris, on the 22nd Oct., are steadily being received, the latest list showing twenty-six names.

TRIAL NOTES.

GOING to Bury Hill on Sunday, Mr. R. E. Phillips lost one of the dust caps off his car. It was marked Rochet-Schneider, Lyon, and should anyone have found it Mr. Phillips will be obliged for its return.

THE following is a list of the non-starters, the absence of the cars being in several cases due to late arrival on Tuesday of last week, in others to the vehicles not being ready in time, and in one or two instances to the cars being considered duplicates of other entries:—No. 6, 6-h.p. Siddeley; 7, 6½-h.p. Century; 8, 7-h.p. Vesta; 10, 6-h.p. Wolseley light car; 13, 5-h.p. Beeston Humberette; 22, 7-h.p. Cottereau; 26, 7-h.p. Coronet; 27, 10-h.p. Century; 30, 10-h.p. Pick tonneau; 31, 10-h.p. Pick voiturette; 32, 9-h.p. Mathieu; 33, 9-h.p. Renault; 44, 8-h.p. Standard; 45, 19-h.p. Arrol-Johnston; 46, 7-h.p. Star; 53, 12-h.p. Century; 55, 9-h.p. Humber; 61, 10-h.p. Ryknield; 69, 16-h.p. Okodyne steam car; 72, 20-h.p. Hallamshire; 73, 12-h.p. Cremonne steam car; 74, 12-h.p. Arrol-Johnston; 76, 16-h.p. Century; 81, 12-h.p. Belgica; 88, 12-h.p. Sunbeam; 98, 16-h.p. Elswick; 101, 20-h.p. Welbeck; 103, 12-h.p. Gobron-Brillie; 107, 20-h.p. Velox; 110, 12-h.p. Chelmsford steam car; 112, 15-h.p. Pipe; 115, 25-h.p. Cassell; 124, 15-h.p. Daimler; 135, 22-h.p. Daimler; 138, 24-h.p. Hart petrol-electric; 139, 18-h.p. Wilson and Pilcher.

THE Century Engineering and Motor Company, Ltd., ask us to mention that although they entered five Century cars altogether in the different classes, they were unfortunately not able to be ready with more than one, viz., a Century tandem in class A 1. The machine which they have actually put in for the Trials is the standard type 5-h.p., tandem cylinder, bore 84 mm., stroke 90 mm., instead of the 6½-h.p. tandem as entered in the official catalogue.

THE results in miles per hour for the twenty fastest cars in the Westerham Hill Climb on Saturday were as follows:—No. 137, 22-h.p. Daimler, 14.95 m.p.h.; 102, 24-h.p. Wolseley, 14.85 m.p.h.; 133, 20-h.p. M.M.C., 13.91 m.p.h.; 114, 14-h.p. Martini, 13.50 m.p.h.; 92, 12-h.p. New Orleans, 12.43 m.p.h.; 91, 12-h.p. De Dion Bouton, 12.41 m.p.h.; 130, 16-h.p. Rochet-Schneider, 11.66 m.p.h.; 113, 14-h.p. Renault, 11.62 m.p.h.; 108, 16-h.p. Dennis, 11.46 m.p.h.; 105, 10-h.p. Gardner-Serpollet, 11.07 m.p.h.; 97, 15-h.p. New Orleans, 10.96 m.p.h.; 134, 16-h.p. Flat, 10.70 m.p.h.; 140, 24-h.p. De Dietrich, 10.47 m.p.h.; 120, 20-h.p. Germain, 10.44 m.p.h.; 34, 10-h.p. Georges Richard, 10.02 m.p.h.; 126, 16-h.p. De Dietrich, 9.99 m.p.h.; 129, 15-h.p. Pipe, 9.79 m.p.h.; 52, 10-h.p. Wolseley, 9.73 m.p.h.; 77, 12-h.p. Star, 9.65 m.p.h.; 66, 12-h.p. Gladiator, 9.49.

THE following table gives the average speed in miles per hour of the twenty fastest cars in the Bury Hill Climb on Monday:—

16-h.p. Rochet-Schneider ...	17.29	20-h.p. Germain	13.65
10-h.p. Gardner-Serpollet ...	17.00	10-h.p. White	13.64
14-h.p. Martini	16.61	12-h.p. Gladiator	13.39
24-h.p. Wolseley	16.56	15-h.p. New Orleans	13.37
24-h.p. De Dietrich	15.05	16-h.p. Dennis	12.53
22-h.p. Daimler	14.97	12-h.p. New Orleans	12.45
24-h.p. Georges Richard	14.61	12-h.p. De Dion	12.23
20-h.p. M.M.C.	14.43	20-h.p. Humber	11.80
16-h.p. Fiat	14.11	24-h.p. Darracq	11.77
16-h.p. De Dietrich	13.96	20-h.p. Thornycroft	11.64

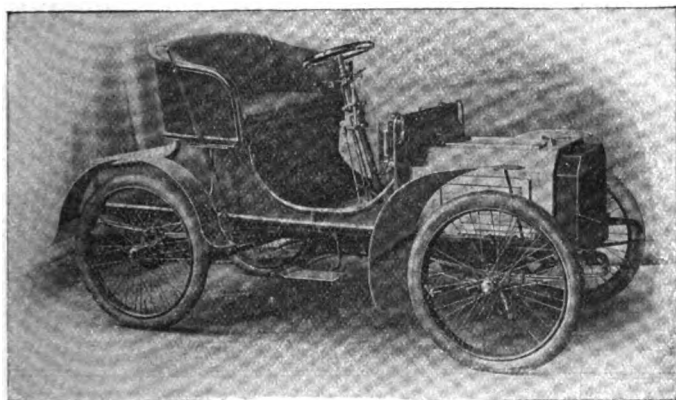
WESTERHAM HILL was the scene of a bad accident during the progress of the Trial on Saturday. A cyclist was approaching the foot of the hill, where there is a cross-road, when one of the White steam cars turned the corner suddenly and silently. The cyclist who seems to have lost control of his machine, dashed into the car with terrific force, his head striking the mud-guard of the motor. Everything possible was done for the injured man. A car was despatched for a doctor, a distance of three miles and eventually the cyclist was removed to Sevenoaks Cottage Hospital, six miles distant from the scene of the accident.

AMONG the private cars following the Trials, on Tuesday, was one driven by Mr. Joseph Temperley, carrying as passengers the Head Constable and Borough Engineer of Reigate. The former pointed out to the Club officials that he was not responsible for the numerous summonses heard at Reigate, having only taken out three since 1896. The tradesmen of Reigate greatly resent the interference with automobilism which has caused motorists to boycott Reigate.

THREE miles of road, viz., between Gappon Point (after Merstham) and Nag's Head (approaching Horley), which includes the whole of Redhill, are under the Reigate police, who do not take out technical summonses for infringements of the speed limit.

THE 14-h.p. Brooke car, No. 68, comprises a number of improvements, notable among which is the employment of a pressed steel frame. The three-cylinder engine is retained, but in addition to the pedal-controlled suction governor, the speed of the motor can now also be controlled by a hand lever which varies the lift of the suction inlet valves. Other modifications in connection with the engine are a cold air inlet, controlled from the dash board, pressure-fed lubrication, and improved gravity water circulation; chains are still used in the change gear box, the latter has now three-point suspension, and has been reduced in weight. Furthermore, the ratio of the gear between the engine and the road wheels has been altered, larger sprockets now being used to give the same result as hitherto. A number of other changes have been made in the new car, the total weight of which comes out at about 4 cwt. less than the old model.

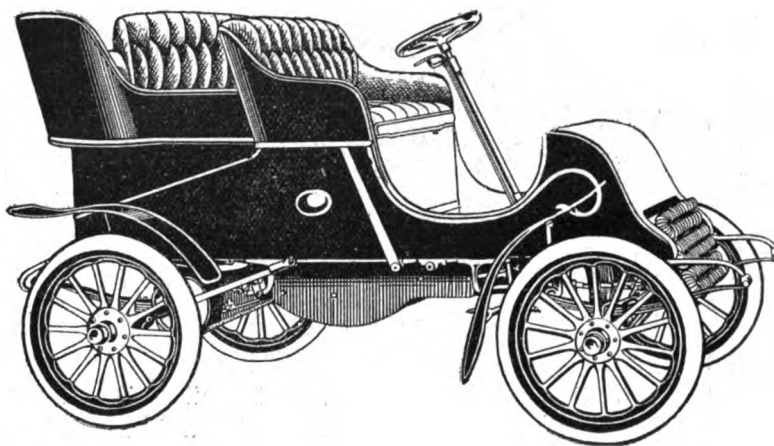
A NUMBER of new features are noticeable in the 10-h.p. Horbick (No. 56), which Messrs. Horsfall and Bickham are running in the trials. The two-cylinder engine (4 3-16 in. diameter by 4 1/2 in. stroke), is now fitted with mechanically-operated inlet valves. The cam-shaft is arranged so that it may easily be removed, while a honeycomb type of radiator with fan is now used in connection with the cylinder cooling. The transmission is by cardan shaft and bevel gear, a new form of spring drive being introduced, to take up any shock from the engine or gear when changing speeds. The "Horbick" cars have already earned a good reputation in the north, which should be fully maintained by the new-model car.



No. 13.—The 5-h.p. Humberette.

ENTRY No. 14, the Cadillac car, is a new American-built vehicle, which is being introduced into this country by the Anglo-American Motor-Car Company. The motor is a single cylinder horizontal one of 6 1/2-h.p., with cylinder and head cast in one piece. The cylinder is 5 in. dia. by 5 in. stroke. The bearings have bronze bushings; those on the crank shaft and crank pins can be removed without taking the shaft from the engine frame. The ignition is electric and a device is fitted making it impossible to start the engine while the spark is advanced, thereby avoiding accidents. The engine is water cooled, the water being passed through a single section coil of twelve seamless tubes five-eighths of an inch in diameter, over which are slipped copper radiating discs, three-eighths of an inch apart.

The speed of the engine is controlled by means of a throttle, the lever being located on the steering pillar. The silencer connection is fitted with a cut-out for use on country roads, where noise is not objectionable. The carburettor is claimed to be one of the special features and to require no adjustment for any variation in speed or atmospheric conditions. The cylinder is screwed into



No. 14.—The 6 1/2-h.p. Cadillac.

the crank case, instead of being bolted on, and it is claimed that this method is a substantial improvement on the older style. The water jacket is of spun copper, instead of cast iron. The inlet and exhaust valves are both mechanically operated and are exceedingly accessible. The differential gear has large braking surfaces keyed directly to each wheel shaft, which act the same as drums on the rear wheels. Instead of the tiller steering usually found in American cars, the steering is effected by means of an inclined hand wheel and an adjustable irreversible mechanism. The body frame is built up of angle steel and is supported by semi-elliptic springs at the front and rear. The transmission gear is of the epicyclic type, the pinions and gears being of steel and bronze respectively. All parts of the gear run in oil, fed through one oil hole only. The gear gives two forward speeds and reverse, the high gear giving speeds on the level up to from 30 to 35 miles an hour. The body is designed so that by loosening four nuts the whole of it can be removed, and without making a single disconnection of any kind. The car is made in two styles, as a runabout with a seating capacity for two and large space for luggage, or with detachable tonneau body, accommodating two more passengers. On the first day of the trials the car made a non-stop run to Margate and back, but on the way to Eastbourne, on Saturday last, it met with an accident at the foot of Riverhill, a wheel being broken as the result of a collision.

THE inaugural luncheon was a pleasant function, Colonel Crompton's speech being the *piece de resistance*. Often have we heard the Colonel, but never before in such good form. He dealt with the man on the motor and the man in the street in pungent style, and rallied the Press on their anti-motor attitude in a way that should help to secure better recognition in future. Mr. Roger Wallace and Mr. Shrapnell Smith spoke well and to the point, and a graceful tribute was paid by the chairman to the organisation by Mr. Basil Joy, which was re-echoed by the company with musical honours. It was a fitting beginning to a notable event.

CONSIDERABLE excitement prevailed in the Observers' Tent on Tuesday evening, when, as the result of complaints, Mr. Basil Joy deemed it necessary to strongly urge the Observers to see that the rules as to speed and passing were strictly adhered to. They were, he said, the representatives of the Club during the trials, and were being relied upon to see that the competition was carried out properly. It was their duty to note any infraction of the rules, and he trusted that they would warn the drivers of any excess of speed, or passing on forbidden sections, and make due note of the same in their reports.

The Motor-Car Journal, Saturday, September 26th, 1903.

THE RELIABILITY TRIALS. THE DAILY RECORD.

Official No.	H.P.	CAR.	Friday.	Saturday.	Monday.	Tuesday.
CLASS A1.—Tandems, Quadricycles, and similar two-seated vehicles, over 170 lbs. weight, at a selling price of £100 or less.						
1	—	Century Tandem	D.	A.	A.	E.
2	6	Eagle Tandem	A.	A.	A.	E. S.
3	8½	Rex Tricar	C.	Retired.	A.	
CLASS A.—Vehicles of a selling price of £200 or less.						
4	—	Baby Peugeot	A.	A.	A.	A.
5	6	Regal	W. S.	A.	A.	E.
9	6½	Vulcan	A.	A.	Collision.	
11	—	Stanley Steam	A.	Serious delay.	A.	A.
12	5	Coventry Humberette	A.	A.	A.	E.
14	6½	Cadillac	N. S.	Wheel broken.	A.	E.
15	—	Pony Richard	C.	Retired.		
16	6	Relyante	Abandoned.	A.	A.	A.
17	5	Oldsmobile	A.	A.	N. S.	A.
18	6½	Clyde	A.	Retired.	A.	A.
19	6	Elswick	A.	A.	A.	A.
20	6	De Dion Bouton	A.	A.	N. S.	A.
21	5	Oldsmobile	A.	A.	N. S.	A.
23	8	Achilles	A.	A.	A.	A.
CLASS B.—Cars of a selling price between £200 and £300.						
24	6	Swift	N. S.	A.	A.	A.
25	8-10	Regal	C.	Retired.	A.	
28	9	Beaufort Tonneau	A.	N. S.	A.	N. S.
29	9	Argyll	A.	A.	A.	A.
34	10	Georges Richard	N. S.	A.	N. S.	A.
35	9	Eagle	A.	D.	A.	A.
36	10	Rex	A.	A.	A.	E.
37	4	Roots	C.	Retired.		
38	9	Mohawk Manon	N. S.	D.	A.	A.
39	8	M.M.C.	N. S.	A.	N. S.	N. S.
40	9	Darracq	A.	N. S.	A.	N. S.
CLASS C.—Cars of a selling price between £300 and £400.						
41	10	Gladiator	N. S.	A.	A.	E.
42	12	Albion	A.	N. S.	N. S.	N. S.
43	10	Hallamshire	A.	A.	A.	E.
47	9	James and Browne	N. S.	N. S.	N. S.	N. S.
48	10	Argyll	N. S.	N. S.	N. S.	N. S.
49	14	Argyll	A.	N. S.	N. S.	N. S.
50	10	Simms Welbeck	A.	P.	N. S.	E.
51	12	Wolsley	A.	A.	A.	A.
52	10	Wolsley	N. S.	N. S.	N. S.	N. S.
54	12	Krupkar	N. S.	A.	N. S.	N. S.
56	10	Horbick	N. S.	A.	A.	E.
57	12	Georges Richard	N. S.	N. S.	N. S.	E.
58	12-14	Relyante	N. S.	A.	N. S.	N. S.
59	13	Rex	A.	A.	A.	N. S.
60	10	Dechamps	N. S.	A.	N. S.	A.
62	7½	Wolsley	D.	A.	N. S.	A.
63	10	Spyker	A.	D.	N. S.	N. S.
64	12	Darracq	A.	A.	D.	N. S.
CLASS D.—Cars of a selling price between £400 and £550.						
65	12	Sunbeam	A.	A.	N. S.	N. S.
66	12	Gladiator	A.	A.	A.	A.
67	12	Ariel	Abandoned.			
68	14	Brooke	A.	A.	A.	A.
70	10	Thornycroft	A.	A.	N. S.	N. S.
71	10	Peugeot	N. S.	A.	A.	N. S.
75	8-10	Elswick	A.	Retired.		
77	10	Star	N. S.	A.	N. S.	A.
78	14	Beaufort Tonneau	A.	C.		
79	16	Argyll	N. S.	A.	N. S.	A.
80	15	Belsize	N. S.	A.	Retired.	
82	14	Brooke	A.	A.	A.	N. S.
83	10	Relyante Steamer	C.	Retired.		
84	10	White Car	A.	N. S.	N. S.	N. S.
85	12-14	Dennis	N. S.	A.	A.	A.
86	12	Clement	N. S.			
87	10	Lanchester	A.	D.	N. S.	N. S.
89	12	Brush	A.	D.	A.	N. S.
90	16	Maxim	A.	A.	A.	A.
91	12	De Dion Bouton	N. S.	N. S.	N. S.	N. S.
92	12	New Orleans	N. S.	D.	A.	N. S.
93	10	Renault	A.	N. S.	N. S.	N. S.
CLASS E.—Cars of a selling price between £550 and £700.						
94	20	Thornycroft	A.	A.	A.	A.
95	12	Chelmsford	N. S.	A.	A.	N. S.
96	15	Germain	A.	A.	N. S.	A.
97	15	New Orleans	N. S.	N. S.	N. S.	A.
99	15	Star	A.	Retired.		
100	18	James and Browne	A.	A.	A.	N. S.
102	24	Wolsley	N. S.	N. S.	A.	N. S.
104	20	Winton	N. S.	Serious delay.	A.	E.
105	10	Gardner-Serpollet	A.	N. S.	N. S.	N. S.
106	24	Georges Richard	A.	A.	A.	N. S.
108	10-20	Dennis	A.	A.	A.	N. S.
109	16	Lanchester	A.	Retired.		
111	0	Spyker	C.	Retired.		
113	14	Renault	A.	A.	A.	A.
114	14	Martini	A.	A.	N. S.	N. S.
116	10	White	N. S.	N. S.	N. S.	A.
117	12	Humber	A.	Retired.		
118	24	Darracq	N. S.	A.	A.	A.
CLASS F.—Cars of a selling price of between £700 and £800.						
119	12	Peugeot	N. S.	A.	A.	N. S.
120	20	Germain	N. S.	A.	A.	A.
121	20	Beaufort	A.	N. S.	A.	A.
122	20	Humber	A.	A.	N. S.	A.
123	12	Wilson and Pilcher	C.	Retired.		
125	25	Maudslay	N. S.	A.	A.	A.
126	16	De Dietrich	N. S.	A.	N. S.	N. S.
127	15	C.G.V.	A.	A.	A.	N. S.
128	18	Chenard and Walcker	A.	Withdrew.		
129	15	Pipe, with magneto clutch	Serious delay.	A.	A.	N. S.
130	16	Rochet-Schneider	A.	N. S.	N. S.	N. S.
181	18	Mors	A.	A.	A.	A.
132	20	Holcar	C.	Retired.		
133	20	M.M.C.	N. S.	N. S.	N. S.	N. S.
134	16	Fiat	N. S.	A.	N. S.	E.
CLASS G.—Cars declared at a selling price of more than £800.						
136	22	Daimler	N. S.	N. S.	A.	N. S.
137	22	Daimler	N. S.	N. S.	N. S.	N. S.
140	24	De Dietrich	A.	A.	N. S.	N. S.

N. S. : Non stop run. A : Completed run with only brief delay. C : Retired from day's runs. D : results not computed. E : Not arrived up to 7.45 p.m.

MOTOR-CYCLING NEWS.

TO-DAY (Saturday), the Wolverhampton Motor Cycling Club is holding a run to Rugeley to meet the members of the Birmingham Motor-Cycle Club.

A BOOK of hints for the use and guidance of riders of the Gamage motor-bicycle has just been issued. It deals exhaustively with the question of lubrication, ignition, the carburettor, the care of the motor, starting, stoppages, and their causes, the sparking plug, valves, etc., and should be found exceedingly useful by riders of "Gamage" machines.

THE world's motor-cycle track record for 24 hours was given a big upward move on the 5th inst., when Mr. A. A. Hanson, on a Mitchell, beat his last year's record by nearly 75 miles. The run was made at Garfield Park, Chicago, beginning at 3.30 p.m. on the 4th inst., and the distance covered was 701 miles and 1,330 yards, the net riding time being 20 hours and 58 minutes. The previous record for 24 hours was 634½ miles, made on the same track by Hanson.

HEREWITH we illustrate what may be termed a tankless motor-bicycle, which has been constructed and patented by Mr. F. H. Green, of High Street, Cheltenham. The novelty of the machine lies in the fact that the whole of the frame tubes are utilized for the carrying of petrol or other oil. It will be noticed that the machine presents the appearance of an ordinary bicycle with a Minerva engine attached. The frame, which holds nearly a gallon of petrol, is built with slightly larger tubes than usual, and, owing to the special construction of the connecting lugs, the oil circulates freely through the entire set when poured in at the opening provided in the seat pillar. The back mudguard, which is made hollow, acts as a receptacle for nearly a quart of lubricating oil, and is filled at an opening on the top of the guard. A pipe from the bottom bracket is connected to an ordinary F. N. carburettor which supplies the mixture to the 2-h.p. Minerva engine. The sparking and throttle levers have been arranged near the steering pillar, so that the frame space is entirely free to



receive an ordinary touring luggage bag. The accumulators and coil are carried in a small box at rear of saddle. Mr. Green informs us that the machine runs very sweetly, and he attributes this in some measure to the equal distribution of weight throughout the entire frame. He states that he has ridden the machine some hundreds of miles, and so far is very pleased with it. We may add that the machine was built to Mr. Green's design by Messrs. Stretton and Co., Cheltenham.

SEVERAL motor-cars, big and little, have made the attempt to travel from San Francisco to New York. Two automobilists have succeeded in doing it, but no one yet has done it alone, as has been done by a motor-cyclist, nor come anywhere near mak-

ing as good time. Wyman, the rider in question, not only holds the record of being the first to cross the American continent with a motor-vehicle, but he also has the record of time for the journey. Wyman, using a 1½-h.p. motor bicycle, made the trip



A Neckarsulmer Motor Bicycle in Portugal.

in fifty days. Dr. Jackson, with a 20-h.p. Winton car, took sixty-three days, and E. T. Fetch, with a 12-h.p. Packard, occupied sixty-two days.

AMERICAN motor-cyclists now have a national association in the Federation of American Motor-Cyclists, organised in New York on the 9th inst., at a meeting of eighty-seven enthusiasts from different parts of the United States. The rules provide for an association subdivided into four districts, Eastern, Southern, Western and Pacific. One of the chief objects for which the organisation will at once work will be to secure legal recognition of the motor-cycle as a bicycle and to free it from the restrictive automobile classification in which the laws of many American states now hold it.

MISS MURISON left Land's End on Tuesday afternoon on a motor-car for John o' Groat's.

THE new Collier Company has been registered, and the style of the Collier Twin Tyre Company, Ltd., will in future be the Collier Tyre Company, Ltd.

FOR allowing his motor-car to stand on the highway so as to cause unnecessary obstruction, Mr. G. Tickell, of Clontarf, Dublin, has been fined £1 and costs at the Kingstown Police Court.

QUEEN CHRISTINA of Spain, accompanied by the Infanta Maria Thérèse, arrived in Paris from Vienna on Tuesday. Later in the day her Majesty and her daughter proceeded on a motor-car to the Chateau of Epinay.

CONTINENTAL NOTES.

ALL hopes of any summer weather seem now to be gone completely, and it is time to think about covered bodies to motor-cars for the winter season. Frames will next year be made sensibly longer, and almost all cars will in future have the entrance at the side, so that lady passengers can get in and out from the side walk, instead of having, as at present, to get in at the back, and for that purpose get down into the muddy street, as the car can hardly be backed on to the pavement. The days of the tonneau are therefore numbered, and the double phaeton is likely to take its place. Bodies are gradually being made also much more roomy. Another body which is passing out of fashion is the Roi des Belges, which hardly anybody wants now.

ATTEMPTS to beat the kilometre record at Dourdan used to be almost daily events, but lately they seem to have gone completely out of fashion. Perhaps it may be that the record has been pushed up and up and has reached such a pinnacle now that it needs a tremendous horse power to do anything really great.



In the Desert in Nevada.
Snapshots of the Packard Petrol Car, which recently made the Journey from San Francisco to New York.

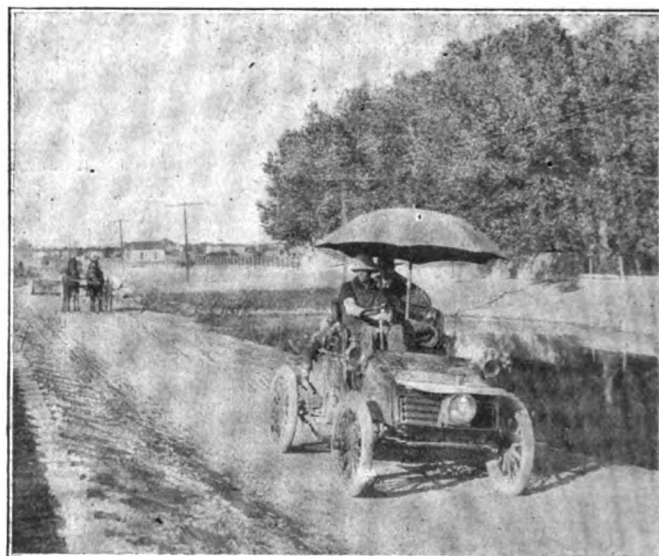
THE Criterium of $\frac{1}{4}$ litre began on September 16th at the Parc des Princes, Paris, and brought together a very considerable number of entries, which have been divided into six different heats, which were run last week, the weather having been fairly favourable. The competition was for motor-cycles whose cylinder capacity was not more than one-quarter of a litre—that is to say, one twentieth of an imperial gallon. Tests of the capacity of the cylinder or cylinders of each machine were made by pouring water into them when the piston was at the lowest part of its stroke. The machine thus measured was then marked and was ready to compete.

THE race was held on the track over a distance of 100 kilometres. On Wednesday the first heat took place, and there were thirteen starters. The interest of the competition was increased by the fact that motors with an explosion every two strokes instead of every four strokes were allowed to take part in the race. The first and second in each heat competed in the final. The first heat fell to Champoiseau, who took the lead almost from the start and kept it during the whole time. He was driving a Griffon motor-cycle with belt transmission, and his time was 1 h. 28 min. 37 1-5 sec. Bucquet on a Werner took the second place, 9 min. 42 3-5 sec. later. The average

speed of the winner was 67 kilometres 700 metres per hour—nearly 42 miles. A Griffon ridden by Bonnevie won the second heat in 1 hour 32 min. 4-5 sec., Mignard being second on a Knap. Demester on another Griffon won the third heat in 1 h. 35 min. 23 1-5 sec., followed by Mathieu on a Lurquin et Coudert. In the fourth heat Kinet on an Antoine won in 1 h. 31 min. 25 4-5 sec., and Collomb on a Peugeot took the second place in 1 h. 36 min. 40 sec.

THE fifth heat fell again to Champoiseau on a Griffon, but his time was not as good as before, 1 h. 31 min. 12-5 sec. Carreau was second in 1 h. 36 min. 49 3-5 sec. In the sixth and last heat Lanfranchi on a Peugeot belt-driver beat the world's record and made the best time of the whole meeting, accomplishing the 100 kilometres in 1 h. 23 min. 9 3-5 sec.; indeed, he beat all the world's records during this heat, for he did over 72 kilometres (44 miles 6 furlongs) in 1 hour and 50 kilometres in 41 min. 34 1-5 secs. Louvet was second on a Griffon in 1 h. 29 min. 44 3-5 secs.

THE final was run on Sunday at two o'clock, when, in glorious sunshine, the twelve competitors started at the pistol shot. Lanfranchi got off very badly, but soon reached the first place and kept on increasing his lead lap by lap until at the twenty-second



At Levelocks, Nevada.

lap, with a lead of 2 min. over the nearest competitor, he had a puncture on his back wheel and had to stop to change his air-tube. When he restarted he was 6 kilometres behind-hand, and, therefore, quite out of the running. Jacquelin and Kinet were now leading neck and neck, followed by Mignard and Carreau. Soon, however, Jacquelin began to run irregularly, was left behind, and Kinet kept the lead in hand until nearly the end, when a puncture on his back wheel sent him flying and put him out of the race, to his great mortification. Mignard was then in the lead, with Jacquelin three laps behind him, and running strong and gaining lap by lap. But bad luck was awaiting him, and when just on the point of passing Mignard his petrol pipe gave way and he had to walk in, leaving Mignard on his Knap motor-cycle an easy winner in 1 h. 31 min. 11 2-5 secs. Champoiseau, on a Griffon, made a splendid race, and, notwithstanding his puncture, was second in 1 h. 34 mins. 15 3-5 secs.

THE plans for a tourist vehicle run from Paris to Rome next year are being steadily prepared by "La France Automobile." After inspection of the roads between the two cities, the route definitely decided upon is *via* Dijon, Lyons, Marseilles, Nice, Turin, Milan, Bologna, and Florence. The competition, which is confined to tourist vehicles, will comprise two categories, viz., one for vehicles covering the entire distance between

Paris and Rome and taking part in all different events *en route*, including speed tests, hill-climbs, consumption, etc., and the other category for vehicles which only take part over certain portions of the route, joining at main points, such as Lyons, Marseilles, or Nice.

DURING the coming winter the A.C.F., in conjunction with the Association Generale Automobile, is organising a series of papers on technical questions. They are to be given at the A.C.F. clubhouse in the Place de la Concorde, Paris, the first one—on "Brakes"—being down for October 23.

A TOUR of France, restricted to touring cars, is being organised by "La Vie au Grand Air" as one of the events of the 1904 season.

IN connection with the Paris Salon d'Automobiles, in December next, several competitions are being organised. Among these may be mentioned one for automobile headlights, one for the starting up of engines, and one for the inflation of tyres by means of pumps worked off the engine on the car.

FORTY cars competed in the reliability run held by the Berlin Automobile Club on Sunday, the 13th inst. The day's tour was from Berlin (Wannsee) to Wittenberg and back, a distance of 94 miles, which had to be covered in a minimum of 4½ hours. The result was that twenty-one cars made non-stop runs, so securing gold medals, nine cars which had less than ten minutes' delay en route secured silver medals, five vehicles received bronze medals, while five others failed to secure awards.

AFTER being twice postponed on account of bad weather, the Semmering hill-climb, organised by the Austrian Automobile Club, was run off on the 17th inst. The course is ten kilometres long, during which a height of 400 metres had to be climbed. The best time of the day was made by Braun on Mr. C. Gray Dinsmore's 60-h.p. Mercedes (8m. 47 3-5 sec.), thus winning the heavy-car category. There were only two competitors in the light car class, Hieronymous on a 40-h.p. Spitz was first in 9m. 30 3-5 sec., Barbaroux's time on the 40-h.p. Banz-Parsifal was only 5 sec. more. Maurer on a 5-h.p. friction-driven Union had a walk over in the voiturette class (time, 14m. 37sec.) while Wondrick on a 2½-h.p. Laurin-Klement won the motor-cycle class in 10m. 38 4-5 sec.

SUNDAY, October 18th, is the date fixed for the race meeting to be held by the German Automobile Club on the Trab race-course, Westend, near Berlin. The programme includes a five-mile race for motor-bicycles; a ten-mile race for cars weighing over 600 kilog., and having engines up to 19-h.p.; a ten-mile race for cars of from 20 to 30-h.p.; a ten-mile professional race with cars up to 30-h.p., and a similar event for cars over 30-h.p.

It is reported in Vienna that King Edward has ordered an 18-h.p. Mercedes motor-car from the firm which supplied the car which his Majesty used during his stay at Muriénbad.

MR. LAMB, the Secretary of the Stanley Cycle Show, informs us that 221 firms have definitely taken space, and that he expects to be well ahead of last year's number.

WE understand that Mr. A. E. Perman has resigned his position as manager of the Gladiator Department of Messrs. S. F. Edge, Ltd., and that he will shortly be severing his connection with this company.

MR. CHARLES R. BASE, of High Holborn, W.C., is anticipating the winter season by introducing some novelties in warm clothing, at once wind and waterproof. Just now there appears to be a great run on leather-lined C. R. B. coats, light in weight, and yet possessing the qualities most esteemed by motorists. In Meltons, too, he has a wide range, and owners and drivers of cars in the Eastern counties will be interested in the knowledge that all his motor clothing specialities can now be obtained at Mr. G. Base's, 49, Pitt Street, Norwich.

A NEW DEPARTURE IN SILENCERS.

QUITE a new departure in silencers for petrol motors has recently been devised by Messrs. Webb and Hall and put on the market by Messrs. Geo. Main and Company, of Loughborough. The apparatus is claimed to act not only as a silencer but as a petrol economiser and scavenger. Referring to the accompanying illustrations, it will be seen that within the silencer is a fan or rotar specially constructed and machined to suit the purpose for which it is intended. When the silencer is

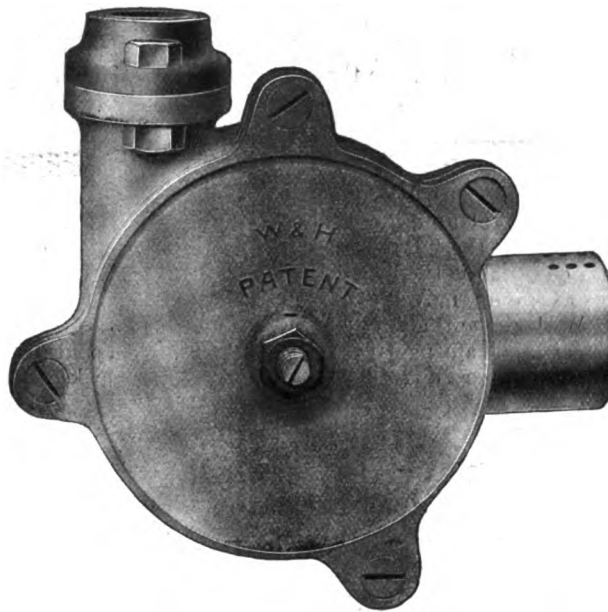


Fig. 1.—General View.

in use the fan or rotar revolves rapidly with the force of the exhaust, and in doing so creates a draught down the exhaust pipe, which draws away from the engine cylinder the foulness left after each explosion. It is claimed that this makes each successive explosion more forceful, as the hydro-carbon residue, which always interferes with the incoming mixture, has been drawn away, and that by the same means not only are the valves and sparking plug kept perfectly clean, but an economy in the consumption of petrol is effected. Before being put on the market the

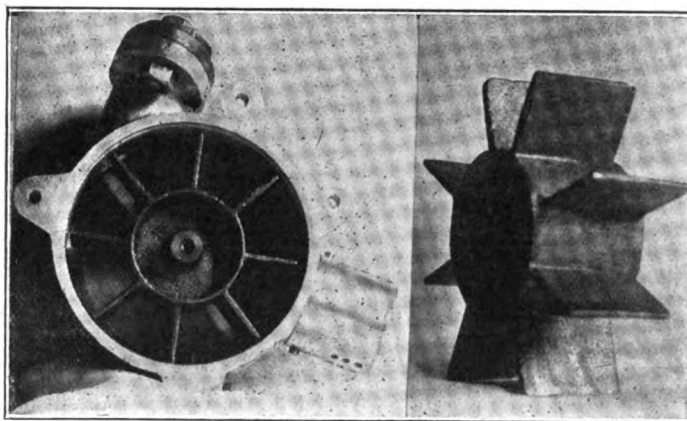


Fig. 2.—Silencer with cover removed to show Fan.

Fig. 3.—Fan Detached.

apparatus has been well tested. We may also mention that while demonstrating it a few weeks ago to a rather sceptical motorist it was decided to take out the sparking plug from the engine head and by placing it into the smoky part of a gas light it was covered with soot and replaced. After the motor-bicycle had been run for twenty miles the plug was again taken out and was found to be perfectly clean, and showing the whole of the white porcelain face. At present the silencers are being made for motor-bicycles with engines of from 1½ to 3-h.p. and for 4 to 6-h.p. motors for cars.

HERE AND THERE.

LORD LATHOM, of Ormskirk, has just acquired a 10-h.p. five-seated Wolseley phaeton.

It is announced that a service of motor-cabs is about to be started at Frankfort-am-Main.

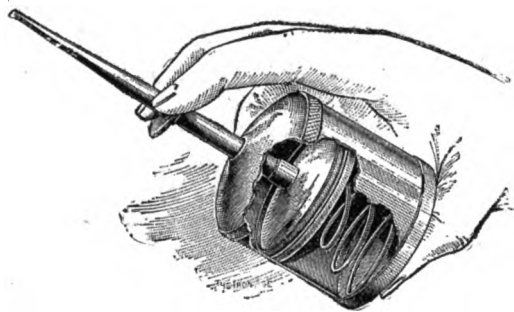
"LE VELO" proposes to hold a number of motor-boat races at Ostend during the course of next summer.

THE Speedwell Motor Company, Limited, have opened a new garage at Jay's Mews, Kensington Gore, S.W.

A MOTOR fire-engine has just been supplied by Messrs. Merryweather and Sons to the Plymouth Fire Brigade.

A SUMMONS against Mr. Cecil Drew for driving his motor-car on the footpath at East Moseley has been dismissed on the payments of the costs.

A NEW oil can which appears to possess several advantages has been brought under our notice by Messrs. Markt and Co. It is known as the "Rochester" automatic self-filling oiler, the feature of which is the use of a spring bottom. Usually, the spout has to be removed every time it is necessary to fill an oil can. With the automatic oiler, the spout is depressed, forcing out the air and causing a vacuum; the end of the spout, while so depressed, is inserted in the oil, which is at once sucked into the



can, taking the place of the air ejected. It is claimed to be impossible to over-fill the can, so that there is no waste of oil. When oil is desired, it can be had in the usual way—by the spring bottom, or if a quantity is desired, it is possible, by again depressing the spout, to force the oil entirely out of the oiler. To fill the can, the spout is depressed, and while in that position the end of spout is inserted in the oil; by releasing the spout by removing fingers from the button, the oiler will begin to fill. Then, while holding oiler with one hand, place the fingers of the other hand above the button, as shown in the illustration. Pull steadily on oiler, at the same time keeping the end of the spout in the oil. When the spout is out to its full length, the oiler is filled. The plunger is formed of two leathers cupped up the same as in a pump. The leather cups are placed between two steel discs and securely fastened by a nut on the end of the tubing.

MESSRS. LANKESTER AND SON, LIMITED, Holy Rood Foundry, High Street, Southampton, have every facility for charging the batteries of electrical vehicle cells, and for undertaking repairs to accumulators and cars.

A NEW garage has just opened in Washington, U.S.A. It is known as the Edison Automobile Station, the moving spirit in it being Mr. W. Leslie Edison, a son of Mr. Thomas A. Edison, the famous inventor.

THE first car built by the Ryknield Engine Company, of Burton-on-Trent, is now complete, and for several days has been subjected to severe tests in the neighbourhood of Burton. The car is of 9-h.p., and comprises a number of new features.

MESSRS. H. B. NELSON have recently opened large premises at 7, Harrington Road, South Kensington, where the special little 6-h.p. Lambert car, for which they are agents, can be seen. Messrs. Nelson have also recently secured the agency for the well-known Rex cars.

A GARAGE has just been opened in Bishopton Lane, Stockton-on-Tees, under the title of "Watson's Motor Garage."

Storage accommodation for twenty-five cars is available, and also two inspection pits and washing facilities. A stock of accessories and petrol is kept, and the garage is open day and night.

A LOCAL Government Board inquiry has been held at Bamber Bridge into an application by the Urban Council for permission to borrow £2,261 for the re-making of the road near Hoghton, between Preston and Blackburn, in consequence of damage caused by heavy motor traffic. The County Council will repay the money, and asked for a long term, as this was happening all over the country.

THE Speedwell Motor and Engineering Company have just brought out a new two-seated petrol car at a popular price. It is fitted with a 6-h.p. De Dion engine and chainless transmission, two forward speeds and a reverse. We also learn that the Speedwell Company have secured the agency for the new Leon Bollee cars, one of which is expected over shortly.

THE Eltham double-deck motor-bus, which we recently illustrated, and which carries 27 passengers, has now covered 9,000 miles on its 3in. Royal Buffer tyres, and only one tyre has yet been renewed. It is needless to remark that the conditions of motor-bus work are much more severe than those obtaining with an ordinary private car, for not only the heavy load has to be taken into account, but also the constant starting and stopping, and continuous daily work.

MESSRS. CHARLES HARMER AND SON, of Lingfield Road, Wimbledon, have sent us a sample tin of a new belt dressing, "Gottim," they have just put on the market in 6d. tins. Unlike nearly all other dressings on the market, "Gottim" is said not to contain resin, treacle, or any other detrimental substance, while another feature is that it never dries. It can be used for the round, flat, or V-shaped belts of motor-cycles, and is applied, not to the belt, but to the pulley.

E. P. ALEXANDER AND SON, Chartered Patent Agents, ask us to mention that although Germany acceded to the International Convention on Patents on the 1st May last, with the result that anyone who has applied for a patent in Great Britain (and other states of the Union) can claim twelve months priority in Germany from the date of the first filed application, no such priority can be claimed in respect of patent applications filed prior to May 1st last, and that in all such cases the German patent must be applied for before any printed publication of the invention has taken place in any country.

THE Auto-Cycle Club, having regard to the new Motor Car Act, which comes into operation on the 1st of January next, and to various ambiguities which exist in regard to motor-cycles under the new Act, propose that the Local Government Board shall be approached by deputation, so that the views of motor-cyclists may be laid before them in order that the suggested by-laws of the Board, so far as motor-cycles are concerned, may be made both reasonable and practicable. The deputation will put before the Board of Trade suggestions with regard to the definition of motor-cycles and their uses, with regard to the size and position and illuminating of numbers, and with reference to the use of trailers and the change of ownership.

ONE of the Lems little two-seated electric cars of the London Electro-Mobile Syndicate has just been submitted to a 350 miles road trial. The route followed was from London to Bath, via Winchester, Southampton and Salisbury, returning by way of Chippenham, Oxford and Reading. Throughout the whole trip not a single mishap occurred, nor were any repairs or adjustments necessitated; no troubles were met with, beyond bad weather and the necessity for frequent recharging. The car is driven by a single motor of about 2 nominal horse-power, through a chain and double reduction gear. Current is furnished by a battery of forty Hart accumulators of a capacity about 48 ampere-hours, or sufficient for a run of from 30 to 40 miles on one charge. The tour was undertaken to prove that a small electric car can be taken without trouble and discomfort for a lengthy tour through the country, and yet not be stranded anywhere beyond reach of a charging station.

CORRESPONDENCE.

AN "ACT" OF DISCOURAGEMENT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have to thank Mr. Staplee Firth for his letter in your issue of the 19th inst., and for his kindly references to myself. I hope he will not think me discourteous if I ask him to be so good as to point out what "foundations" in my article of criticism of the "Act" in your issue of the 12th are "imaginary" and "never did exist."

If I read him aright, he seems to think that my criticism implies that I most ungraciously ignore the Legislative Committee and its work, and that I seem to think it has done nothing. Far be it from me to make light of the great amount of time and trouble some of its able members gave to the matter. I am sure there is nothing in mine to lead anyone to think I have forgotten their arduous and well-meant efforts. The thing I do complain of is that anyone should say "the Club" was in favour of numbering, etc., when the Club was given no opportunity to discuss the matter till too late—when the Government had a Bill ready. Also I feel that "the Club" as a whole was misled—I do not mean intentionally—because we were lulled into a sort of grumbling quietude as to the Legislative Committee's Bill, because we were told numbering, etc., was the only way to get rid of the twelve miles an hour, etc.

Now we are told that the committee (Mr. Firth calls it "the Club") wanted numbering, etc., in order to get rid of the "road hog." I venture to say that had the Club dreamt that its committee was giving up a primary principle of private liberty, and going so far out of the proper duties of a Club as to help the police and other proper authorities to look after a very commonplace class of offender, the voice of the Club would have found some way to make the committee return to more useful and proper business.

It is just because this committee went on such weak and false lines that I rake up the past as a lesson for the future. We don't want the safest form of traffic and that which is best for the general welfare, and certain also to be the preponderating one, apologised for, made the subject of compromises, or lowered to the level of the mutual relations between the police and the "road hog."

It is manifest, since even the Government was only able to find time to force an undigested Bill through Parliament at the far end, that the Club could have prevented any legislation at present if it had not gone out half-way to meet the enemy; with not only no army, but impeded by a load of compromising efforts. The Government were encouraged to think the automobilists would not do anything, but be meek and tractable.

Had the Club a year ago organised a strong Parliamentary automobile party; refused to be led into any compromises; let it be known (in the words of the Scottish Automobile Club) that "it would watch jealously any attempt to alter the present law"; and above all stuck to the point that uncompromising opposition would be given to any attempt to put the users of private carriages of one class on a different plane of freedom—then such a party should have been strong enough to prevent the Government rushing into anything like this. Delay was of more importance than anything else.

When I read my criticism in print, I was afraid my friend Mr. Firth would be annoyed with me for saying that in the eyes of the enemy he was a "road hog" himself. What I meant was that in the eyes of the average M.P. or J.P. of England, and his like, any sort of speed or any sort of motor-car (in some cases even crawling ones) was a thing accursed, and hence the owner and the driver a "road hog." It is not a question of care or courtesy, but of sheer hatred bred of ignorance, false conservatism, and a dense type of self-satisfied mind. These people talk of the whole thing as abominable, and now Parliament has given them the pull in every sense, and stamped us with that brand of special sin which we were made to seem to ask for. Mr. Firth should have known these folk best of all, and I willingly assume that he did not agree with the whole childlike and bland methods of the Legislative Committee.

He must have known that with telephones and telegraphs, once you put identification on cars, it would be child's play to sit in a window by the instrument, note a number and the "hour, minute, and second," and passing it on to the other observer a few miles off, be able to calculate the speed and prove the case, and identify each car with ease. There are certainly lively times ahead, and the battle will only be the fiercer. Had we sat tight and worked hard for delay, delay, delay, and for principles, things would have righted themselves quicker, and without the great injustice and annoyance and hardships which are now made certain by this Act, and the encouragement it gives directly and indirectly to the reactionaries.—Yours truly,

NORMAN D. MACDONALD.

NON-PUNCTURING BANDS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to "Progressive's" letter in a recent issue re Wheeldon's steel bands, I have been using these bands in my tricycle tyres (2½ by 2½ in.) for upwards of 500 miles. I took out the bands recently and carefully examined the inner tube, as well as the fabric of the covers, for signs of wearing through of the small metal plates, but

could find no traces of wear whatever, and I replaced the bands with perfect satisfaction. When they were first put in I expected they would slow the motor-cycle a little uphill, but I find that if anything the machine, which is only a 2½-h.p., by the way, climbs hills faster and better than before the bands were fitted.—Yours truly,

FRED B. CAWOOD.

QUERIES FROM CEYLON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be much obliged if you would give me your opinion as to what form of small motor-cars would be suitable for this country (Ceylon). The roads are as a rule very good as regards surface, but in the central part, which is the chief planting district, the roads are very steep, in some cases one in six or seven, and the corners are very sharp, as the roads have to zig-zag up the faces of the hills. A pace of more than four miles an hour would be impossible round these corners, and on the level roads more than twelve miles would not be safe owing to the dogs, buffaloes, cattle, natives, etc., that always seem to wander across the road just when you want to go by. There are no doubt many men in the Government service, particularly road officers, who would be only too glad to get a cheap car that would do the work, but they must climb anything, have solid tyres and tube or magneto ignition. Electric batteries do not stand the climate well. I frequently see in your valuable publication, to which I am a subscriber and a very interested reader, a number of second-hand 3½-h.p. geared Benz cars very cheap; would that type be suitable? Air-cooled motors if geared low would get too hot out here.

The only motor bikes in Ceylon are 2 and 2½-h.p. Neckarsulmers (German), selling at £40 landed here. There is also one Quadrant. There are also three early type Locomobiles and one Weston.—Yours truly,

PROMOTORIST.

THE SPEED OF TRAMCARS.

MR. MOFFAT FORD has applied to Mr. Lane, at the West London Police Court, for directions in the matter of the summonses he had issued against several drivers of the London United Tramway Company for exceeding their legal speed limit. Although a month had elapsed since the last adjournment, and although a referee had been agreed upon between the parties, yet he could not obtain an appointment for the test from the defendants, who did not seem at all anxious to hurry the matter forward. The magistrate remarked that Mr. Rose, before whom the previous hearings had been, would return very shortly to the court, and he had no doubt that before that time the defendants would come to some arrangement for the official test to take place in ample time for the case to be continued immediately Mr. Rose recommenced his sittings at the court.

POLICE TRAPS.

AMONG Hampshire traps, that on the Havant-Emsworth road seems to have been successful lately in bagging unsuspecting motorists.

ON Sunday the police laid a trap for motorists in Maidenhead on a stretch of road between the top of Castle Hill and Punt Hill. The starting point of the trap is in the gateway of a house directly opposite the 27th milestone from Hyde Park Corner. The policemen who signal and time cars are dressed in plain clothes and hide in gateways, and at some little distance at each end of the trap are men in uniform.

INSPECTOR MARKS, who formerly distinguished himself at Weybridge, is now located at Hersham. We understand that the neighbourhood is being honeycombed with measured distances, which will doubtless enable the police to capture motorists.

AT the bottom of the hill, just outside Knowle, Warwick, there is a police trap, in which several motor-cyclists have recently fallen victims.

AT Foston, on the Great North Road, is a measured distance of 700 yards, 570 of which are through the village street.

MOTOR-CAR LICENCES.

MR. ARTHUR BOHRINGER, of Alfred Street, Brompton Road, S.W., was summoned at the Westminster Police Court, on Saturday last, by the Inland Revenue for keeping motor-cars without a licence. Counsel for the Excise said it was a peculiar case. Defendant had a coachhouse at Thurloe Mews, South Kensington, and on a day in April an Excise officer found three motor-cars there. Defendant admitted the ownership of one, and said the others belonged to friends whose names he would not give. It was for him to satisfy the Inland Revenue Commissioners that they belonged to someone else, for, *prima facie*, "keeping" meant ownership. After intimation of proceedings, defendant did furnish the names of persons as owners of the cars. There was a long correspondence, and it was admitted that licences were now in existence. Mr. Sheil said defendant seemed to have shown much contrariness. A solicitor remarked that he did not justify that, but the Excise officer

only saw defendant's son. Defendant gave evidence, and Mr. Sheil dismissed the summons as the offence was not proved. Defendant's solicitor asked for costs against the Excise. Mr. Sheil: Certainly not under all the circumstances. I am only sorry I cannot make the defendant pay the costs.

FURIOUS DRIVING CASES.

MOTOR-CARS.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Christchurch	W. Duke, Fordingbridge	—	Dismissed.
"	Baron Langsdorff, Christchurch	—	Adjourned.
"	Dr. Ramsay, Bournemouth	—	Dismissed.
"	J. Woods, Bournemouth	—	—
Slough	F. H. Melhuish, Clerkenwell	21	£1, etc.
"	A. Collins, Kensington	—	Dismissed.
Guildford	W. C. Bolton, Clapham	20	£3.
"	S. Hill, Thames Ditton	19	£3.
"	A. Clements, Strand, W.C.	21	£3, etc.
Walsall	S. Boys, Walsall	21	£5, etc.
Grantham	J. Freeman, Kettering	20	£3, etc.
York	F. Churchill, Sheffield	—	20s., etc.
Havant	H. Dyer (driver to Capt. Humphries)	21	10s., costs.
"	Lieut. Adams, Woolwich	22	10s., etc.
Bromyard	H. Morgan, Stoke Lacy (2nd case)	—	£2, etc.
Carlisle	S. Curran, Carlisle	—	Costs only.
Southam	L. Spurvem, London	—	7s. 6d., etc.
Hull	F. Goetz, London, W.	—	£5, etc.
Kingston	J. S. Pollock, Walton-on-Thames	25	£1.
Greenwich	H. Kolle, Tulse Hill, S.E.	—	£3, etc.
"	G. Hyde, Barnsbury	22	£3, etc.
Cupar	B. Shiell (driver to Mr. M. White)	—	£5, etc.
Cullompton	A. Ford, Coventry	28	£2, etc.
Fareham	A. M. Alfrey, Chippenham	22	40s.
"	Sir R. K. Arbuthnot, R.N.	21	40s.
Havant	T. S. Foster	25	Dismissed.
"	C. Thompson, Maida Vale	21	£1, etc.

MOTOR-CYCLES.

Slough	W. Biscombe, Faling	21	£1, etc.
Chertsey	F. J. Kemp, Woking	28	£2, etc.
"	D. Carbould, Kennington	20	£1, etc.
"	E. F. Hansburg, Ash	—	£1, etc.
"	R. Beasley, Farnborough	—	£1, etc.
"	C. Baynes, Kensington	—	£1.
"	R. Hocker, Muswell Hill	—	10s.
Guildford	P. Short, Gomshall	24	£3.
"	F. Adams, Kingston	—	£1.
"	F. Smith, Beckenham	—	£1, etc.
Ashford	G. Waldren, Endsleigh Gardens, W.	20	£10, etc.

Where no alleged speed is given it is understood to be above the legal limit.

JOSEPH HUTHART, who was summoned at Carlisle for riding a motor-cycle at a speed greater than was reasonable and proper, having regard to the traffic at the time, told the Bench that they would not be troubled with him again, as he had just advertised the machine for sale. Such an assurance, however, did not prevent him being fined half-a-guinea and costs.

ALFRED CLEMENTS, of Norfolk House, Norfolk-street, Strand, was summoned at Guildford for driving a motor-car at Witley, at an excessive rate, on August 30th. Sergt. Baker deposed to timing the speed of the car over a measured distance, and it worked out at a rate of over twenty-one miles an hour. After he had been stopped defendant went back and cautioned the drivers of other cars coming along.—Defendant, who denied having been travelling more than ten miles an hour, was fined £3.

WHAT IS A PROPER DEPOSIT?

At the Marylebone County Court (London) on Tuesday, before Judge Stoner, Mr. John A. Tessington, of Derby, brought an action against Mr. H. P. Salsbury, of Kensal Rise, N.W., claiming the return of a deposit of £10 paid on making a contract for the purchase of a motor-car; also claiming £5 as damages for alleged breach of contract and 5 per cent. interest on the deposit from 9th July last. The plaintiff stated that he had arranged to purchase a motor-car from the defendant, and paid a deposit of £10. Some question afterwards arose, however, as to

the cooling apparatus and the radiator to be supplied; and as the car was not supplied as arranged, he considered that the defendant had broken the contract, and that the transaction was "off."

The defendant stated that the plaintiff had never paid a proper deposit, for it was a custom in the trade that a deposit in respect of a purchase should be one-third of the price of the goods, and handed in several catalogues to show that the custom of the trade was as he stated.

The Judge said that, as there was no proper written agreement, it was impossible to say exactly what the contract really was. From the correspondence, however, it appeared that the defendant had been anxious to meet the wishes of plaintiff in a reasonable way, and his Honour thought defendant might still supply the car. He adjourned the case for a month, so that defendant can put in the radiator that the plaintiff desired.

CLUB NEWS.

SHEFFIELD.

DESPITE the wet morning about twenty members of the Sheffield and District Automobile Club carried out the Chatsworth meet on Saturday, and spent a most enjoyable afternoon. The Derbyshire roads were in fair condition considering the rain, but the mist was so thick over the moors on the return journey that it necessitated extreme care in driving. Amongst the members present were Messrs. B. H. Gainsford, E. F. Coupe, J. H. Pickford, J. Ellis, J. E. Evans, Jas. Barber, E. H. Hill, D. H. Bookless, A. Blyde, H. A. Hobson, F. J. Fryer, G. D. Flather, E. H. Hill, H. Hill, J. Walker, and the hon. sec., F. B. Cawood.

THE SCOTTISH AUTOMOBILE CLUB (WESTERN SECTION).

A Club meet took place at the Clachan of Aberfoyle on Saturday afternoon last. The gathering comprised twenty-nine cars, including the following types:—Argyll, Albion, Arrol-Johnston, Babbie, Darracq, De Dion, Gillet-Forest, Gladiator, Lanchester, Panhard, Progress, Renault and Wolseley. The roads were in capital order, and the day being fine, the majestic scenery surrounding the little Highland hamlet was viewed to the best advantage. After tea at the Bailie Nicol Jarvie Hotel, many of the cars were driven to the shores of Loch Ard and of the Lake of Menteith and other interesting and picturesque spots in the neighbourhood. The following were among those present: Messrs. John Adam, chairman, Fred Lobnitz, Jas. Anderson, J. W. W. Drysdale, Wm. Robertson, J. Hunter Steen, Robert J. Smith, hon. secretary, L. C. Seligmann, S. G. G. Copestake, J. Cameron, Jas. Gramb, Geo. Owen, John F. Henderson, Buchanan, John Motherwell, W. H. Steen, Hugh Reid, G. H. Christie, Dr. Wm. Grant, H. M. Napier, H. W. Brock, Provost Kennedy, Dr. Kirkland, W. Babbie, W. McOnie, H. Prosser and R. J. Deany.

WHIPPING A MOTORIST.

At a meeting of the Carrick District Committee of Ayr County Council a report by the surveyor suggesting that the speed of motor-cars passing through villages should be restricted to ten miles an hour, and that notice boards with that intimation should be erected at reasonable intervals along the highway, led to an interesting discussion between the Marquis of Ailsa and Mr. Robert Inglis, factor to Colonel Dalrymple Hamilton, of Bargang. The Marquis observed to Mr. Inglis, "You have some experience of motor-cars?" whereupon the following colloquy occurred:—

Mr. Inglis—I have been nearly killed two or three times; I expect I will be killed some day.

Lord Ailsa—When was the last occasion?

Mr. Inglis—On Saturday last.

Lord Ailsa—How did it occur?

Mr. Inglis—I was going round a corner, when a motor came past at a speed that would have frightened any horse, and made it turn right in front of the motor.

Lord Ailsa—Did your horse do that?

Mr. Inglis—No; I was driving a very quiet horse, but any horse might have done so.

Lord Ailsa—Did you recognise any of the occupants of the car?

Mr. Inglis—No, my Lord.

Lord Ailsa—Well, as it happened, I was in that car, and it was running at a very reasonable speed, having come up a hill and having been checked by a vehicle which had taken the wrong side of the road. Did you, Mr. Inglis, strike at the driver with your whip?

Mr. Inglis—I believe I did.

Lord Ailsa—Yes, you hit him over the head with your whip, and knocked his hat over his eyes—a most unwarrantable thing to do, and one which might easily have caused a serious accident.

Mr. Inglis—I did not recognise anyone in the car, my Lord. I was driving a young horse that had never seen a motor before, and I was very much agitated. I am very sorry, my Lord, that such a thing should have happened.

Lord Ailsa—The whip curled over Lady Ailsa's head and mine. Such an action was a gross breach of the law. I was not quite certain of your identity, but now that I have got confirmation I propose to write to your employer, Colonel Hamilton.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, OCTOBER 3, 1903.

[No. 239.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE committee of the Yorkshire Club have arranged for suitable headquarters in Leeds and Bradford, having come to an agreement with the management of the Great Northern hotels in both cities. In Leeds, there will be a large comfortable room on the first floor, No. 19, entirely for the use of members. This will be open all day, and there will be kept club papers, books of reference, information of general use to members, and notices relating to other clubs. The hotel is situated adjoining the Great Northern Railway and Lancashire and Yorkshire Railway Stations, and there is a covered way where cars may be left, also the key of a garage at which members' cars may be left free, day or night, will be kept at the office. It is intended, during the winter, to have lectures, lantern lectures, and papers, as well as social evenings, full notice of which will be given later.

1904 to be a Four-Cylinder Year.

IN casting about to judge what will be the characteristic changes in American-made cars for 1904, it is found, remarks one of our transatlantic contemporaries, that the tendency is still setting toward the adoption of European patterns and methods. Larger and more powerful cars will be the rule, with the hooded engine in front, honeycomb radiators, and more capacious and luxurious tonneaus. The one thing above all others that impresses us is the almost unexceptional movement toward the introduction of four-cylinder engines in touring cars. Nearly every concern that has hitherto made a one, two, or three-cylinder touring car will next year present one with four cylinders, and a number of makers who have not hitherto turned out a touring car will next year offer such a model with a four-cylinder engine. The four-cylinder touring car can even now be predicted to be the main type of American car for 1904.

Local Exaggeration.

ON the occasion of the Reliability run to Worthing on Monday week, it was noticed, on going into Leatherhead, that workmen were laying down new stones, and that the steam roller was at work. From a local source we learn that, at great trouble and inconvenience to themselves, the men were good enough to keep the stones quite close to one side of the road, so that the automobiles passing through had a clear run without undergoing the uncertainty with which they always ride over newly-laid metal. Unfortunately, this fact was hardly appreciated by some of the passengers on the cars, and local complaints are being made that, instead of a word of thanks, considerable abuse was hurled at the men as the vehicles passed. We, however, believe that there is some little exaggeration in the local view, so far as the general character of the condemnation which was bestowed, and a few isolated cases must not be taken as the universal expression of opinion.

Main Roads.

THE Departmental Committee appointed recently by the President of the Local Government Board is rumoured to have considered some new ideas with regard to the maintenance of the great main roads of the country. It appears that in London alone there are twenty-nine highway authorities, and 1,855 throughout the rest of the country. According to report, the committee is likely to recommend that the great roads, such as the North road and the Bath road, should be taken over by a new department of the Government, and maintained at the national expense. There is much to be said for a proposal of this sort, which would have the advantage of securing something like uniformity in the road service, provided, be it understood, that the local authorities of the various areas through which it passed should have power to make urgent representations to the national department whenever any laxity occurred, for this latter quality seems inevitable in every Government undertaking.

Water for Cars.

AT the time of the Exhibition at the Agricultural Hall in the spring, when the presence of so many different types of heavy vehicles at that great display served to bring this particular aspect of the question to the front, some discussion took place as to whether local authorities should not place water troughs in the streets with a hose attachment, with which to supply water to the tanks of heavy steam vehicles. At present, the drivers of such vehicles, unless they happen to know the district through which they are travelling, are often in a quandary with regard to this. If local authorities would give the matter their attention, they would not only be serving the interests of the public, but might also be able to do this at no loss to themselves.

America's Reliability Trial.

FOLLOWING close on the heels of the Reliability Trials at home, is the Endurance Contest of the American National Association of Automobile Manufacturers, which commences on Tuesday next. Instead of each day's run starting from the same place, the trial will start from New York and be continued from town to town, until 793 miles have been covered. The contest will extend to the 14th inst., the stopping places at the end of each day being Pine Hill, Birmingham, Bath, Buffalo, Erie, Cleveland, Youngstown, and Pittsburgh. Three different States will be visited, and consequently each car will have to be equipped with a New York, New Jersey and Pennsylvania licence.

Derby and District Club.

THE last run of the season in connection with the Derby and District A.C. has taken place. There was a gathering of sixteen cars at the rendezvous in Vernon Street, these being joined by five or six more either on the way to or at Sudbury. A short run had been chosen on this occasion on

account of the rapidly-decreasing length of evening available after tea. The cars left Vernon Street at half-past two, and proceeded by way of Friar Gate and Stafford Street on to Utttoxeter Road. Shortly after passing Hilton the motorists were advised of the presence of a police trap, so for the space of a mile or so the progress of the cars was limited to a crawl. Arrived at Sudbury the cars were stabled at the Vernon Arms, and then the members of the club and their friends, at the kind invitation of Mr. Gretton, proceeded to view the house and stroll in the well-kept grounds of the hall. A very pleasant hour was thus spent, after which the party returned to the hotel, where an excellent tea awaited them.



Some of the Members of the Reading Automobile Club at Wallingford.
Photo by [Mr. A. E. Newton.]

The Reading Club.

THE fifth and final monthly run in connection with the Reading Automobile Club's challenge cup competition for 1903 took place on Wednesday last week, under extremely favourable meteorological conditions. Leaving Reading at 2 p.m., the route lay along the main Oxford road as far as Littlemore Station, and thence to Wallingford, *via* Chiselhampton and Warborough, then back to Reading *via* Streatley and Pangbourne. A halt was made for tea at the George Hotel, Wallingford. The landlord of this hostelry, it may be mentioned, does everything in his power to make motorists comfortable. Those taking part in the run were:—Dr. A. C. Major (Baby Renault), Mr. C. Dodd (8-h.p. Renault), Mr. A. C. Bremerton (10-h.p. Georges Richard), Mr. A. E. Pocock (8-h.p. Dennis), Mr. C. H. Smith (10-h.p. Clement), Dr. Truman (2-h.p. Clement-Garrard), Mr. J. V. Moinet (2½-h.p. Bradbury), and Mr. Arthur Phillips (Royal Enfield).

Hotel Keepers and Motorists.

THAT some hotel keepers regard motorists somewhat in the light of multi-millionaires has long been apparent to those accustomed to tour among the chief holiday resorts of Great Britain. In Ireland, too, there was a great outcry against the same sort of thing; in fact, it seems to crop up whenever any considerable number of motorists are likely to gather together for the purpose of furthering the industry, or of indulging in two or three days' pastime. The Victoria Hotel, Southport, is the head-quarters of the Automobile Club for the purpose of the Southport trials, and has been obliging enough to offer a "suite of two rooms, bedroom and sitting-room communicating, on the Front for the two days of the motor races, the price of the rooms being five guineas per day." On other days, we are

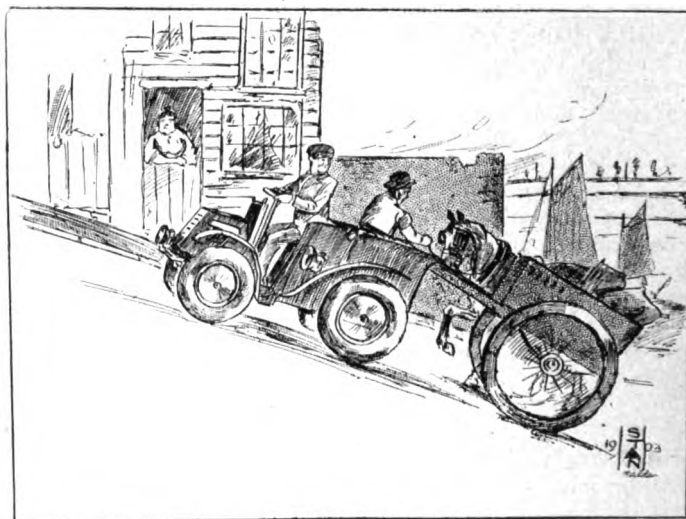
informed, ordinary tariff prices will be charged. If this is a fair sample of the way in which hotel proprietors are going to cater for motorists when race meetings are arranged at such places as Southport, we can only say that very few meetings of the kind will take place. Such a gathering as that now in progress is likely to bring a considerable influx of visitors into a town, and the fact that all the hotels are full should be enough for the local proprietors, without seeking to repel them by such terms as those we have quoted.

Hampshire Busybodies.

AFTER the way in which the police of Hampshire entertained motorists passing through their district on the occasion of the Reliability run last week, we are not surprised at anything of an anti-motor character which comes from that county, which, it was generally supposed, was a kind of miniature Paradise for motorists. The Petersfield District Council and the Alton District Committee are both recommending the Hampshire County Council to schedule all the roads in their respective areas at the ten mile limit. This would practically prevent motorists getting to Winchester at all, and it is to be hoped that, should the County Council not have the wisdom to reject such a proposal, the Local Government Board will turn a deaf ear to the suggestions of these local busybodies, who would, apparently, encircle themselves with a barrier of prejudice to all the out-side world.

Closing Roads.

TRAVELLING over the Hog's Back and along some of the Hampshire roads, we could not fail to notice how the 16 feet clause will seriously affect the traffic of motor cars, as is pointed out in our article on another page. Some 16 or 17 feet now covered with grass might be easily preserved for traffic purposes, and the actual roadway increased by that extent. Instead of closing roads, the local authorities will be better advised to widen the present roadway service as far as possible, so that the great highways of the country may be put to their legitimate purposes.



A Friendly Lift. A Sketch from Life at Maldon, Essex.

The M.V.C.

THE Motor Volunteer Corps apparently had a hard time during the recent manoeuvres, and, as usual, a few complaints, mainly due to thoughtlessness or lack of organisation incidental to a first appearance, have reached us. Certainly there does seem, as Earl Russell pointed out, a large proportion of officers to men, and it is a pity that gentlemen of good social

status should be employed mainly as coachmen to officers who do not always recognise the service which the amateur motorist is rendering the country by placing his vehicles at the disposition of the military authorities. Undoubtedly most of those employed during the manoeuvres found themselves with a monetary loss, for the allowance of 30s. and free petrol by no means covered expenses involved, to say nothing of tyres, wear and tear, etc., which, to many of those taking part, was a fairly considerable item. Still, we must not be too critical, for the venture is entirely an experimental one, and the faults which were apparent at the recent manoeuvres need not occur again if the military authorities show themselves capable of learning the lessons that they taught.

Carriages v Motors.

At the recent meeting of the Institution of British Carriage Manufacturers at Sheffield, reference was made to the motor industry, Mr. G. J. Jacobs, of Guildford, reading a paper on the subject. He said that in some districts carriage builders were being treated unfairly, owing to their clients being deprived of the comfortable use of the roads and luxury of using horse-drawn carriages, and pointed out that it was a fact

so far as the more modern people are concerned, it seems to us that the duty of carriage builders is to study the motor-car in its various aspects, and try and produce bodies adaptable to the new means of locomotion—otherwise they may expect to be left behind in the race.

Dust Laying.

NEAR the Tuns, on Salt Hill, Slough, on the Bath road, an experiment has been in progress for some weeks with a view of abolishing the dust nuisance caused by motor-cars. The plan adopted has been to sweep the road clean of all dust and fine gravel, then to cover it with a coating of hot tar applied with a brush. One length of road has been left for the tar to soak well into it, but without anything being spread over it. Another portion has had fine gravel thinly spread on the tar. Up to the present the dust has been reduced quite seventy-five per cent., but the expense incurred, and the length of time a single dressing of tar will last, is as yet a matter for conjecture. So far it has proved successful. Another aspect of this experiment is that all the dust that was swept off the road, together with the dried mud along the sides, has been shovelled



Photo by)

The Star or the Reliability Run to Worthing.

[Argent Archer

that many ladies, who, less than two or three years since, would have suffered a severe neurotic attack had they been subject for a single hour to the vibration of a loose window in a brougham (however well built), could now be seen enjoying on motor-cars an amount of rattle, vibration, and discomfort that suggested that up to the present time the motor-car had not been dispassionately judged by the same standard of comfort that had been the gauge of its predecessors. Would this always be the case? When the evidence has accumulated on the motor side, and the verdict was given, then on this and on other grounds, the horse-drawn carriage would still hold its own, and the speed and excitement of a motor-car ride would be held to be no substitute for the luxury, comfort, and benefit of the carriage drive.

The Proper Policy.

SUCH was the sanguine view of Mr. Jacobs, although we are afraid he is taking a rather too roseate view of the situation, so far as his own trade is concerned. Carriage builders must not become anti-motorists, but rather adapt themselves to the changing circumstances of the time. There will always be people who prefer the means of locomotion adopted by Adam and other ancient heroes to the up-to-date motor-car, and for them carriage builders will, of course, continue to cater; but,

on to the footpath to a depth of from one to three inches, and already has made it anything than clean and pleasant to walk on; but how this will be in wet weather, with the dust turned into mud, is too serious to contemplate.

The Southport Speed Trials.

THE Reliability Trials over, the eyes of the automobile world are now centred on the Southport speed trials, which are taking place on Friday and Saturday of the present week. The list of entries, which is a large one, has come to hand too late to allow us to reprint it in the present issue. We may state that the motor-cycle section is divided into four classes, the distance to be covered being seven furlongs. In Class A, for machines up to 114 lbs. in weight and with engines 70 mm. by 70 mm., there will be eight competitors; in Class B, a handicap race for machines up to 170 lbs., and motors 84 mm. by 84 mm. there are no less than 22 entries. Class C is for Lancashire riders of machines similar to Class B, and has brought out a baker's dozen of competitors, while in Class D, for machines of any capacity, but not exceeding 170 lbs. in weight, there will be seventeen starters. Coming now to the Fouring Car section, all the races will be over a kilometre course with a flying start. Class E is for cars under £200, and will be

competed for by twelve drivers, Class F, cars between £200 and £400 has brought forth 18 entries, and Class G cars between £400 and £550, eight. In Class H, vehicles between £550 and £750, there will be fourteen competitors, including a new car—a 24-h.p. Newton-Pearce. Class J, cars between £750 and £1,000, has brought out two De Dietrich's, a Brush, a M.M.C., three C.G.V.'s, a Gobron Brillié, an Ariel, and a Fiat. In Class K., cars over £1,000, the entries comprise a 24-h.p. and a 15-h.p. Panhard, a 20-h.p. Mercedes, and two 20-h.p. Napiers. In the Lancashire Inter-Club Handicap, Class M, nineteen vehicles will compete. The Racing Section comes next with three entries in the light-car class (N) and eleven in the under 1,000 kilog Class (O), the latter comprising a Gordon Bennett Napier, driven by Mr. S. F. Edge, Mr. Higginbotham's 60-h.p. Mercedes, Mr. J. Talbot Clifton's 70-h.p. Panhard, the Star Racing Car, Mr. Andrew Fletcher's 60-h.p. Mercedes, Mr. Harvey Du Cros, Jun.'s, 30-h.p. Panhard, Mr. J. E. Hutton's 70-h.p. Panhard, the Hon. C. S. Rolls' 70-h.p. Mors, Mr. H. Austin's 36-h.p. Wolseley, Mr. A. Fletcher's 40-h.p. Mors, and Mr. R. L. Lloyd's 35-h.p. Napier. The scratch race for cars under 1,000 kilogs. (Class P) has brought thirteen entries, the bulk of which are also in Class O, while the final race, for cars of any power or weight (Class Q), will also be another battle between twelve giants. We may add that it has been decided not to use the Winter Gardens at Southport as the official garage during the Speed Trials. The proprietor of Gandy's Riding Stables, Roe Lane, Southport, has kindly undertaken to afford free garage accommodation to competitors.

Footpaths.

THE Vicar of Westham, near Pevensey pleads for footpaths on the side of roads so that pedestrians may escape from what he terms "the motor pest." This is a reasonable suggestion, and should commend itself to all having anything to do with the management of our main and side roads. At the same time, we do not want to see these footpaths extended to widths of eight to ten feet, thus assisting the Local Government Board to close the roadway under the provisions of the new Act.

Track Racing in America.

Two persons injured at Cleveland, one killed at Detroit, one killed at Milwaukee, and five injured at Zanesville, O., is the record of one week's automobile track racing in America. The accident at Cleveland, due to the "Torpedo Kid" running off the track, was referred to in our last issue. The Zanesville calamity was caused by the bursting of a tyre owing to the strain on the wheels when the car was rounding the curve at a speed of forty miles an hour. The driver, strangely enough, escaped with a shaking. At Milwaukee the accident occurred in an attempt against record on the Ford-Cooper racer. After covering 3 miles in 3 min. 15 sec., the driver suddenly lost control of the machine on one of the bends, the car dashing into the fence. Fortunately the spectators were able to get out of the way, but Day, the driver, was so frightfully injured that he succumbed without regaining consciousness.

Time to Stop.

WITH such a terrible record as this, it is nearly time that a stop was put to this dangerous sport, at least until tracks specially designed and constructed for high speed automobile racing are available. Those who control the sport of motor racing in the United States are face to face with a serious situation, and on their quick action much depends. Without blame upon anyone, the accidents have simply occurred to mark the limit of safety in racing on existing tracks—to accentuate the fact that speeds of sixty miles an hour on horse race courses have passed the boundaries of security. Track racing under proper conditions is no doubt an interesting sport and will long remain so, but a halt in the interest both of the sport and industry must

now be called. Not only must special tracks be provided if the sport is to be continued, but the rules regulating track races should be immediately amended so as to prevent the appearance of such racing monstrosities as have lately seen the light on the other side of the Atlantic.

Irish Automobile Club.

A VERY successful hill-climbing competition, under the auspices of the Irish Automobile Club, was carried out on Saturday last at Glindoo Hill, near Dublin. The distance of the event was three-quarters of a mile, and the average gradient was one in twelve. A dozen members entered for the trial, and all of them, save one, successfully ascended the hill. The winning car was a 12-h.p. Napier, driven by the popular president of the club, Mr. W. G. D. Goff, who came up from Waterford to take part in the event. Mrs. R. J. McCreedy, the wife of the hon. sec., drove her 6-h.p. De Dion, and not only made much better time than the two similar cars entered, but had the satisfaction of beating the times of most of the higher horse-powered cars. The result was as follows:—

		min.	sec.
W. G. D. Goff ...	12-h.p. Napier ...	5	1
W. Sexton ...	10-h.p. Siddeley ...	5	11
L. J. O'Higgins ...	10-h.p. Gladiator ...	5	11
Mrs. R. J. McCreedy ...	6-h.p. De Dion ...	5	35
C. W. Hely ...	10-h.p. Panhard ...	5	38
R. J. McCreedy ...	10-h.p. Siddeley ...	5	42
Hayes ...	10-h.p. Wolseley ...	6	33
Lord Plunkett ...	10-h.p. Lanchester ...	6	57
J. O'Connor ...	6-h.p. De Dion ...	7	28
Dr. Wright ...	6-h.p. De Dion ...	7	47
Westley ...	15-h.p. Belsize ...	9	3

Technical Education.

FOLLOWING our reference last week to technical instruction facilities in connection with motor-car work, news comes of developments at St. Martin's School of Art, London, W. During the coming session a special course of instruction will be given on the building of the best types of carriages driven by electricity, and drawings will be made of bodies for various motor frames.

THE Wolseley Co. have just delivered a 50-h.p. car with tonneau body and canopy to Mr. Harvey Foster, of Battle.

THE Western Road Carrying Co., Limited, have established a garage in the Victoria Road, St. Philip's, Bristol, which was formally opened on Tuesday.

FOR the 1904 season the Minerva motor will be made in three sizes, 2-h.p. (69 mm. cylinder 70 mm. stroke) 2½-h.p. (76 × 76), and a new 3½-h.p. (82 × 82), all being fitted with mechanically operated valves.

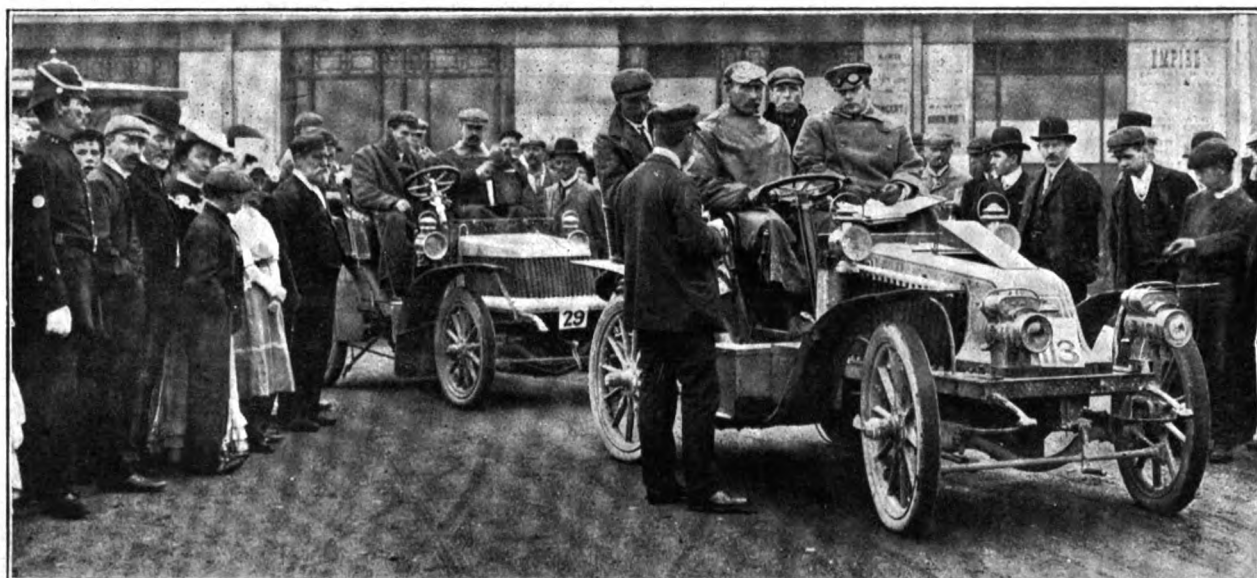
MISS MURISON has established a record by being the first of her sex to drive a motor-car (an Arrol-Johnston) from Land's End to John-O'-Groats. The run commenced on the evening of Tuesday, the 22nd ult., and John-O'-Groats was reached on Monday last. The running averaged 180 miles per day, and the longest drive in one day was 213 miles.

THE Vulcan Motor Manufacturing Company, Limited, write:—"We note from your Reliability Trial table you only give the word 'collision' as the cause of the withdrawal of our 6½-h.p. Vulcan car. As the records show that up to the accident the car did very well until within twelve miles of the Crystal Palace, on the return journey from Eastbourne, we should be glad if you would allow us to give you the facts. When our car was passing between a non-competing vehicle and a dray, a cyclist came right in the path of the car from behind the other vehicle. Our driver, to avoid running down the cyclist, turned his car into the dray, with the result that the front arm and spring of the car was fractured, the silencer broken to pieces, the gears affected, and our observer thrown out over the bonnet of the car. After this the vehicle was driven slowly to the Palace, where it was decided to withdraw from the Trials."

The Reliability Trials.



Snapshot on Hindhead during the Hill Climb.



Photos by

The 14-h.p. Renault and the 9-h.p. Argyll leaving Southsea.

[Argent Archer.

THE HINDHEAD HILL CLIMB.

THE run to Southsea on Wednesday of last week included a timed run up the well-known Hindhead, a few miles beyond Guildford. The climb was two miles in length, the average gradient being 1 in 24.4 and the worst stretch 1 in 13. The cars were stopped just before the beginning of the ascent, and had a start, commencing on a slight down grade, of about 150 yards. The following table shows the times of the twenty fastest cars:—

No.	Car.	Time. m. s.	No.	Car.	Time. m. s.
105	10-h.p. Gardner Serpollet	3.32½	91	12-h.p. De Dion	5.12½
133	20-h.p. M.M.C.	4.33	134	16-h.p. Fiat	5.13½
114	14-h.p. Martini	4.41½	116	10-h.p. White	5.16
120	16-h.p. Rochet-Schneider	4.42½	129	15-h.p. Pipe	5.20½
100	18-h.p. James & Browne	4.47½	106	24-h.p. Georges Richard	5.22
137	22-h.p. Daimler	4.53	127	15-h.p. C.G.V.	5.22½
102	24-h.p. Wolseley	5.0½	92	12-h.p. New Orleans	5.23½
120	20-h.p. Germain	5.1	66	12-h.p. Gladiator	5.30½
140	24-h.p. De Dietrich	5.5½	108	16-h.p. Dennis	5.38½
97	15-h.p. New Orleans	5.11	118	24-h.p. Darracq	5.43½

The return journey was made by the same route, and was marked by a couple of incidents, both unexpected by the competitors. Near the foot of Hindhead the cars were stopped and examined as to their condition by three of the judges, after

which they were despatched one by one. Just as they were beginning to get into swing again down the slope, on rounding a corner, flags were suddenly displayed from the hedges. It was a surprise brake-trial, the results of which are not to be made public. The judges have, however, expressed their satisfaction with the power of control exhibited. The remainder of the journey was uneventful. The inspection by the judges caused some delay, and a light fog made travelling in the dark troublesome, so that it was somewhat late when many of the cars reached the Palace.

THE second trial of cars claiming to have been impeded at Westerham on the Eastbourne run took place on Monday last with the following result:—

No.	Car.	Time. m. s.	Speeds in miles per hour.
105	10-h.p. Gardner-Serpollet	1.39	22.23
130	16-h.p. Rochet-Schneider	2.32½	14.44
140	24-h.p. De Dietrich	2.33	14.36
66	12-h.p. Gladiator	2.46½	13.23
127	15-h.p. C.G.V.	3.8½	11.68
100	18-h.p. James and Browne	3.11	11.52
126	16-h.p. De Dietrich	3.21½	10.92
17	5-h.p. Oldsmobile	4.51½	7.55
57	12-h.p. Georges Richard	5.15	6.97
19	6-h.p. Elswick	8.22	4.38

THURSDAY—TO BEXHILL.

ON THE FIRST CAR TO THE FRONT.

THURSDAY'S run was one of 121½ miles, the destination being the new and ambitious seaside resort of Bexhill—an aggregation of villas and boarding-houses, planted between the water and the railway station. There was plenty of excitement in the morning conversations ere we bade farewell to Mr. A. Burgess, who was keeping a weather-eye upon the couple of representatives of the Motor Manufacturing Company in the trials. Our mount was not the little single-cylindereed vehicle that made non-stop runs throughout the Trials, but the big 20-h.p. brother, which would

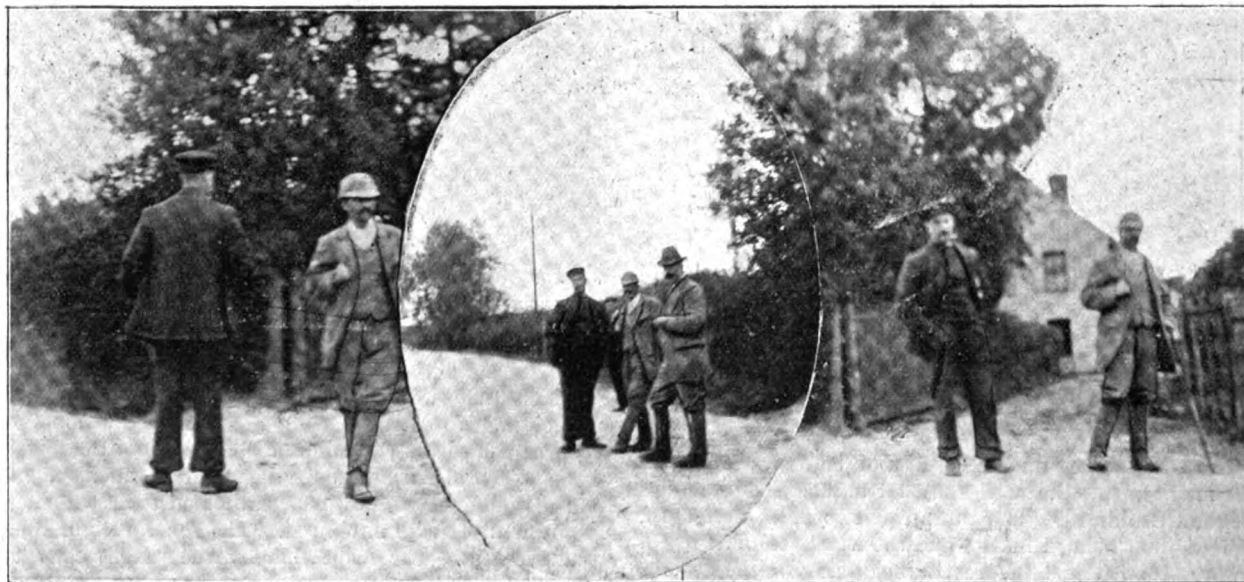
of such a prominent position is that one does not see the laggards; cars may fall by the roadside or become modestly slow, and those in the first cars see nothing of the consternation that comes over the faces of drivers when pressmen come in view. The route to Tonbridge had already been traversed by all the cars on the run to Eastbourne, and except for a gipsy encampment with straying horses about the road, there was little of interest. Beyond Halstead the programme warned drivers to go slowly, as children were often playing in the road at the foot of the hill, a fact we noted, although it had no existence in actuality at that early hour. Sevenoaks was being awakened as we rushed through, and then pace slackened beyond Hildenborough, where Mr



Photo by]

The Cars preparing for the Speed Trials at Bexhill

[Argent Archer.



The Rear View.

The Trapper Discovered.
A SUSSEX POLICE TRAP.

Snapped!

have been equally successful but for the ignition troubles (caused by the quality of the spirit used) which came upon the car after leaving Bexhill. But that part of the story must be told later. Mr. George Iden was at the wheel, keeping a firm and paternal hand on the way of the car. Mr. Spencer acted as Observer, and, packed away in the tonneau, were the mechanic, a fellow-journalist, and the writer—the latter a useful kind of ballast, wisely shed when the car went upon the track to make the fastest time of the day. But it must be explained that the fifth passenger was an "extra," and the full complement of weight was upon the car when the speed test was made.

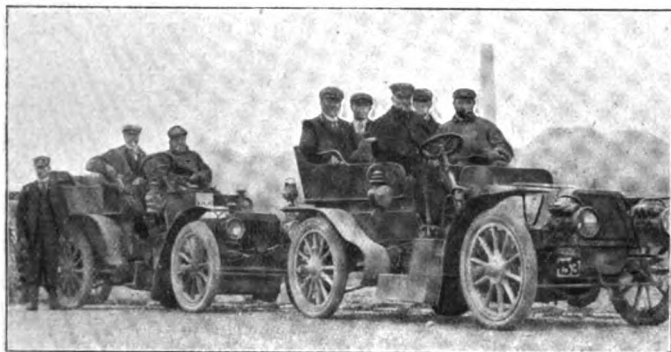
Our place among the starters was third. The 22-h.p. Daimler was second; the first did not appear. The inconvenience

Bush, on his Daimler, lost a place or two, Mr. T. B. Browne coming up strongly on his 18-h.p. James and Browne car, with Mr. Frederic Coleman, of the White Steam Car Syndicate, as Observer. Some discussion arose between Observers as to the accuracy of watches. It grew quite Parliamentary, and the point was nearly decided by chance. However, matters cooled as Tonbridge was invaded, the presence of the Grammar School possibly reminding the argumentative spirits that facts must be recognised—even though watches differed. There was satisfaction among the passengers in the knowledge that time was on their side.

At Tonbridge cars came along in rapid succession, the interest of the townspeople being as languid as elsewhere—this being proof

of the commonplace character which the automobile is assuming in the national means of locomotion.

Leaving Tonbridge, one or two vehicles got ahead soon after leaving control, and maintained their place to the level-crossing beyond Hurst Green, where a coming train delayed the cars awhile. Then before Battle was reached we found our premier place, the James and Browne being urged every now and again to come along. Leaving Battle, with its grey castle frowning in the dull light, we turned sharply to the Lewes road into Ninfield. The whole district recalled Norman days; Battle Abbey is built



The first two cars into Bexhill—the 20 h.p. M.M.C. and the 18 h.p. James & Browne. Photo by [Argent Archer].

on the site occupied by the English army at the Battle of Hastings, and near Ninfield is Standard Hill, where William the Conqueror planted his standard before that epoch-making event. Then on to Bexhill went the procession, our No. 133 still at the head. The last few miles were rendered of interest and almost of excitement by the evident conflict between regulations and preference indulged in by Nos. 133 and 100. The honour of being first into Bexhill was in jeopardy once or twice, but Mr. Iden is a sportsman as well as an engineer, and he knew his car, with the result that we were first upon the parade.

THE SPEED TRIALS.

A fairly-sized crowd of spectators awaited the coming of the cars at Bexhill. That upon which we rode was the first to pass



On the road from Bexhill.

beneath the banner of the *Motor-Car Journal*, which, stretching across the road leading to the shingly beach, was an indication that the outward trip was at an end. Having been stopped a few minutes on the Front the vehicles were piloted to the top of Galley Hill, from whence they sped over a half-mile of the track. No one seemed concerned at the speeds attained. A few months ago, when M. Serpollet did fifty-three miles an hour on the same track, the event was wired throughout the world; now a speed of forty-four miles was attained by a touring vehicle without anyone wondering. Verily times are changing and matters are being

accelerated. The track is 1,350 yards long, but times were only taken over 880 yards, with the following result:—

CLASS A I.		CLASS E.	
	m. p. h.		m. p. h.
1. Century Tandem (No. 1)	.. 31.8	1. 10-h.p. Gardner-Serpollet (No. 105)	.. 42.8
CLASS A.		2. 14-h.p. Martini (No. 114)	.. 42.3
1. 6½-h.p. Clyde (No. 18)	.. 33.0	3. 15-h.p. New Orleans (No. 97)	} 40.5
2. Stanley Steam Car (No. 11)	32.1	24-h.p. Georges Richard (No. 106)	
3. 6½-h.p. Cadillac (No. 14)	.. 28.8		
CLASS B.			
1. 8-h.p. M.M.C. (No. 39)	.. 29.5	CLASS F.	
2. 9-h.p. Beaufort (No. 28)	.. 29.0	1. 20-h.p. M.M.C. (No. 133)	.. 44.6
3. 9-h.p. Eagle (No. 35)	.. 26.3	2. 20-h.p. Germain (No. 120)	.. 42.4
CLASS C.		3. 16-h.p. Rochet - Schneider (No. 130)	.. 41.3
1. 12-h.p. Wolseley (No. 51)	.. 35.1		
2. 10-h.p. Gladiator (No. 41)	.. 35.0		
3. 10-h.p. Wolseley (No. 52)	} 32.7		
7½-h.p. Wolseley (No. 62)			
CLASS D.			
1. 12-h.p. Gladiator (No. 66)	.. 41.3	1. 24-h.p. De Dietrich (No. 140)	42.4
2. 12-h.p. New Orleans (No. 92)	39.3	2. 22-h.p. Daimler (No. 137)	.. 39.4
3. 12-h.p. Star (No. 77)	.. 39.2	3. 22-h.p. Daimler (No. 136)	.. 30.8

Mr. G. Iden made the fastest time of the day, and it will be seen that another M.M.C. was also successful in Class B. One striking feature, on glancing at the results, is the uniformly-



At the Uckfield level crossing.

good performance of the cars, particularly in Classes B, C, D, E, and F.

At 1.30 we started back in good spirits for the Palace *via* Purley; but within twenty minutes were standing disconsolately, while others were waving fond adieux. The worst of being No. 1 is that every car up to the end of the line can see you when in distress. No. 100 can linger in silence; but No. 1 is beheld by all. In the two minutes' stop—the first the 20-h.p. M.M.C. had indulged in during the week—a score of vehicles went ahead. Then we got going again, slowing down for five minutes at Gardner Street, Mr. Iden dismounting with as cheerful a countenance as could be expected. Still cars passed on, a seemingly endless procession, while we sat comfortless. Then we got going again, and soon reached the dust clouds made by other cars. A policeman on foot and another in a trap—the word to be taken as signifying a horse-drawn vehicle—sauntered along with an easy nonchalance as though motors were nothing to them. Suddenly ahead was a little confusion, and a Wolseley and a Georges Richard were seen coming into the straight road, having followed about a score of other cars before discovering that the wrong turn had been taken. And thus we came to something nearer our own; when we had to slow down in Uck-

field giving the writer an opportunity of "snapping" one or two rear ends of cars as they took the level crossing in the little town. Ignition troubles were the reason of our undoing, the primary cause being the choking up of everything, due either to deposit from the spirit used or from the excessive dust of the previous runs.

Uckfield has an unenviable reputation, so far as the attitude of its magisterial bench to motorists is concerned, but the people of the town seemed friendly enough, and warned the passing motorists of a trap ahead. So all went slowly through Maresfield and across Horney Common into Nutley, beyond which we saw the waving handkerchiefs indicating danger. We were asked to stop and warn others coming along.

to the dull monotony associated with the daily doings during the Trials.

We then had a gentle spin into East Grinstead, passing the Spyker car, which was leaking lubricating oil, and entered Godstone for tea, the Clayton Arms Hotel being the venue. Beyond there were no incidents worth recalling, save that on the hill nearing the Palace the ignition again went wrong, and prevented that good run at the end of the day which we had anticipated in the morning. There is no advantage for descriptive purposes in starting in the first three cars; but neither is there anything gained in being laggard as we were. The feeling of desolation that comes over one as cars go on while our own engine is unresponsive is not inspiring. We lost note of the cars that



The Start for Winchester.



Photos by]

The Return from Winchester. The Cars Climbing the Hog's Back.

[Argent Archer.

So we waited awhile, and then proceeded cautiously, scanning the green country around for shades of blue. It was rumoured that a man in a blue serge suit by the hedge was on the watch, and the writer—a fifth passenger, whose dismounting did not vitiate the record of the car's performance—got down to reconnoitre. We came across the gentleman, in company with two others. With a suddenness that surprised the party a clicking sound was heard—result to be seen in the centre of the photograph on page 594. The plain clothes policeman did not like the smiles of his companions, and we took the liberty of again snapping his personality—an operation which caused him to turn his back upon us in the way depicted on the left-hand picture. Altogether, the incident was interesting, and formed a little interlude

gained, while we remained. Still, it must be confessed the car ran well to Bexhill, and the incidental trouble that followed us homeward did not detract from the merits of the trusty and speedy M.M.C.

FRIDAY—TO WINCHESTER.

A SLOW DAY IN POLICE TRAPS.

FRIDAY was a merry day, for to all the pleasures of the scenery were added a succession of "war's alarms" that fed the spirit of adventure. To sit quietly on a car for six or seven days in succession is proof that the man who does so is "a patient and long-suffering animal." It is a trial of the

passenger as well as of the cars and becomes a little wearisome after awhile. Consequently the excitement that befel the motor-ing voyagers on Friday came as a relief, although many an old salt would have declared it to be the natural consequence of setting forth on the fifth day of the week.

But we are anticipating somewhat. The scene at the start was much the same as that of the previous day; and that of the previous day resembled that of the day before. Having learned something of the ways of English vehicles, we had arranged to observe the journeying from a Scottish car; hence the fate which landed us on No. 79—a trusty Argyll that made non-stop runs. Four Argylls had journeyed the 410 miles from Glasgow to London to participate in the trials; they had come along in good style, ploughing through floods and surmounting hills as though intending to prove old Dr. Johnson's epigram that the best road for the Scotchman is that that leads to London. But Dr. Johnson was a wee bit prejudiced and would probably have expressed surprise had he seen the Argylls return to their native heath with equal celerity. Three of the vehicles behaved themselves splendidly in the trials, and one—the 10-h.p. car—was of the four to have a daily succession of non-stop runs. The other was the three-cylindered car illustrated in the *Journal* a fortnight ago. This had been fired out after a mischance at Charing, where it was found that the lubricating pipe had become choked, causing the connecting rod to seize. The driver and mechanic got the car to a yard where there was a pit, and were beginning to investigate the matter, when a lighted match was thrown down. Immediately flames shot upward, encircling the two unfortunate men, who were burnt about the faces and hands. Nothing daunted, despite the pain, they decided to try and get along on two cylinders, and would probably have succeeded in thus reaching the Palace before the expiration of the time limit, but, following the guidance of a larger car in the gathering fog, they ran into a bank and the plucky venture had to be abandoned. It is pleasing to know that both men are progressing as favourably as could be expected under the circumstances.

The driver of No. 79, which started fortieth in the procession, was Mr. H. Parker Thomas, a Londoner who has made Wales his home. At Aberdare he inaugurated a motor-car service that is still proving popular, and at Cardiff he now directs the fortunes of the South Wales Motor Co. Mr. C. Andrews was the Observer, Mr. Alec Govan, the managing director of the Hozier Engineering Company, and the writer occupying the tonneau—a position in which the legs were not unduly cramped by the presence of superfluous oil cans, petrol tanks, water bottles, rattlesnakes, and the score and one other things with which some drivers encumbered their cars.

Seventy-six cars started, the Simms-Welbeck being an absentee, having retired the day before owing to the breakage of the wheel on the shaft driving the auxiliary wheels. Most of the cars were dust-stained and begrimed, while the drivers were not rendered cheerful by the weather outlook, which looked tearful. Fortunately, however, good fortune attended the trials, and ere we had had the first stop a radiant sunshine wreathed the landscape with bright shadows that were maintained throughout the day. Miss Levitt was attended, as usual, by her little black spaniel, and Mr. F. Wellington had mounted a white "toy" puppy on the bonnet of his car, which provided the spectators with plenty of fun as he went along. That dog proved the quietest passenger of the trials, never moving a muscle throughout the run of 133 miles, and testifying, as dog never testified before, to the comfort of the car. The run to Leatherhead was over the same route as that taken on the Worthing trip. At Croydon the roads were terribly greasy and skidding proved an easy if hazardous accomplishment. At Carshalton the Rex car was seen with its bonnet off, but the stoppage cost less than five marks, so that its vanity did not seriously detract from its score. There was quite a tinge of excitement among the people of Epsom as the cars passed through, and a little knot of people gathered further along, where a small dog had defied a 20-h.p. Humber and found the way that ledeth to destruction.

Beyond Leatherhead we passed a children's sanatorium and

received the weakling cheers of the sickly occupants of cots placed in the open air. No incidents occurred, for the greatest half of the Trials had been performed, and only the best cars remained. Through East Clandon, with its shabby little church, and Merrow, with its over-restored Norman architecture, we strode along into Guildford, where a halt of fifteen minutes gave an opportunity of replenishment for those who had endured the tantalising prospect of a shortened breakfast. Guildford seemed to have a fascination for many northerners, and, although the spot in North Street where the cars lined up was not the most picturesque, it served its purpose. News of breakdowns was scarce, and evidently it was going to be a day of few mechanical disasters. The Coventry Humberette broke its connecting rod at Guildford and had to retire, but not before it had completed a distance of 898 miles. No. 35, the 9-h.p. Eagle, made a good pace with a wobbly wheel, which must have caused the Observer to reflect on the necessity of modesty in such a position; passengers on other cars laughed and must have seemed of an aggravating disposition. It is bad enough to have to run the gauntlet of the jeers of the unfriendly; but to have to endure the admonitions and sarcasms of brother motorists is woe

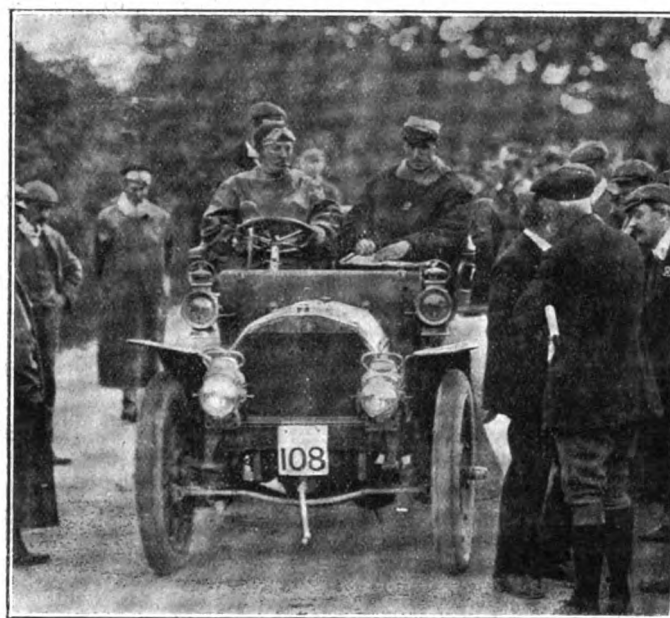


Photo by] The Southsea Run.—The Surprise Inspection of the Cars. [Argent Archer

indeed. In that respect the driver of No. 35 must have been satiated.

From Guildford the way was up the Hog's Back and into Hampshire—the county of black pigs, a litter of which was nearly dispersed soon after we got into the region of police traps. All along the fine ridge, that gave us an exalted view of the country around, were private cars, their owners looking with a critical eye upon the performances of the vehicles engaged in the Trials. On either side of the roadway was a grass-grown space of nearly a dozen feet which might easily be converted to the purpose of road traffic, thus facilitating speedy travel over that famous road. Accustomed to the rugged glories of his Scottish landscape, Mr. Govan regards the routes of the Trial as tame, quiet and unexciting—yet pleasant wihal. But he nearly grew enthusiastic over the prospect as seen from the Back of the Hog, which we strode in company with the Star driven by young Mr. Lisle.

A good pace was made to Farnham, where the order for "slow music" was given, the word of caution coming from the first of the caution boards of the A.C.G.B.I. which we had encountered. Many wondered why the board should have been placed in such a position. If the hill warranted any such warning, how many hills have been overlooked? Into Farnham we went cautiously, and could not help remarking upon the fine appear-

ance and position of the garage established in the East Street by Mr. Wiltshire, who evidently intends to make his mark in the motor world of the district. A passing motorist gave us warning of danger ahead.

After leaving Bentley we saw the first policeman, looking a picture of innocent patience. Slowly we passed him, and about a quarter of a mile further along saw P.C. 78 of the Hampshire Constabulary lurking by the hedge. The opportunity was too good to be lost. We asked him the time, but he genially observed that we knew the time of day as well as he, and when he was asked to pose for his portrait with his stop-watch in hand declared his willingness. But there, we won't give him away; he was such a nice man—too nice for the disagreeable duties that now fall to his lot. Fancy a custodian of law and order, a limb of the law, an upholder of the Majesty of the King, lurking by the hedge waiting to harass the loyal subjects of the Crown. While engaged in pleasant converse we noticed a car coming along, and, recognising our duty to ease the labours of the police, we raised our handkerchiefs as flags of truce and retraced our tracks to the first portion of the trap, warning about a score of cars and leaving one to warn the others. Thus the trappers were defeated for awhile. At Chawton another trap was discovered, the guardians of which were greeted with a blowing of horns, a

recovered his surprise and regained his position on the roadway ere he had a similar shock from the Argyll, the apology of Mr. Thomas being as touching as the mishap was accidental. Few incidents occurred on the way to Winchester, where the cars were drawn up in the shadow of the great statue of King Alfred. Ancient Winchester might have provided the tourists with much of academic interest; but hotels gave them more utilitarian fare.

From the Hampshire city we went at 1.30 p.m. A few cars were still going gamely towards their objective, but nothing was seen on the roadside, save a few policemen, to whose presence we were becoming irritatingly familiar. It was a crawl up hill into Alresford, and a slow procession to Alton. About a dozen cars were following the Gladiatorial lead of Mr. E. H. Arnott, who was going very slowly indeed when a policeman pounced upon him and demanded name and address. He waited to confer, while the other cars passed along, Mr. Arnott's face being a picture, looking, for all the world, like the expression in the scene, "I hear they want more." Ours probably was the answer "Alas, my poor brother." The rustics were friendly, warning us of the presence of the police with ready zeal. A leading novelist has drawn a picture of the antipathy of the village folk in Italy to the authorities, and



Photo by]

The run to Brighton. The scene at Crawley during the compulsory stop.

[Argent Archer.

shouting of voices, and such an aggregation of sounds that we were reminded of Milton's lines—

Clashing, bray'd
Horrible discord, and the madd'ing wheels
Of brazen chariots raged; dire was the noise.

At the village of Four Marks a third successive trap was discovered—a very ingenious and not wholly unwarrantable device, had the day been an ordinary one. Carefully hidden behind the hedges at the bend into the village was a constable, and about three hundred yards further on another, behind a bush, had stop-watch in hand. Doubtless the village was a narrow one, where accidents might easily happen, but to allow traps to be laid on a day when speed was regulated to official limits and everyone knew of the coming of the cars was about as absurd as allowing donkeys to stray on the Gordon Bennett course when Jenatzy was hurtling along like a flying fiend. On through Bishops Sutton, red tiled cottages no longer figured in the landscape, the ancient darkened thatch showing up boldly and picturesquely in the sunlight, while the glades and thickets gave variety to the view. Just before Alresford was reached another trap had to be carefully negotiated. A Gardner-Serpollet ahead nearly spoiled the pedal beauty of a policeman, who had no sooner

the way in which they delight at the outwitting of the police. Something of the same kind was apparent on the Hampshire roads, and even the rural postman, who had seen the distance measured early in the morning, was good enough to raise a warning voice. Just beyond Holybourne, the War Office Wolseley, in t khaki coating, was seen with a couple of soldiers significantly signalling a warning as to the danger ahead. At Bentley the police were hiding behind trees while the long procession of cars, their passengers waving handkerchiefs to warn the vehicles behind, passed slowly along. The succession of handkerchiefs made a remarkable sight as we looked back along the sinuous route, the line of cars being easily distinguished as the white flag fluttered in the breeze. Evidently the slow movement was distasteful to the police, and after passing Farnham one whose toes had nearly collided with a car could resist it no longer, and, ignoring the grammatical niceties of the King's English, hurled the remark, "Ye ain't got no pluck." If we had quickened the pace, the wrath of the law would have been incurred; by restraining the drivers, the disgust of the police was secured. Like the fable of the old man and the donkey, it was impossible to please everyone. Such reflections served awhile until strains of martial music were heard, bandmen seated in three horse-drawn brakes attempting to play "See the

Conquering Hero Comes." The sounding of the automobile horns added discordant notes. Thus over the Hog's Back into Guildford, where a scramble for tea resulted mainly in burnt tongues. There we learned that the 10-h.p. Argyll, which had made non-stop runs every day, was maintaining its reputation.

Leaving Guildford, the way home to the Palace was made through pleasant country allowing a strong contrast between the fresh greens of spring that were seen on the Margate run and the brown, yellow, and red autumnal tints that had come upon the face of nature during the week. Passing the 6½-h.p. Clyde and the 14-h.p. Renault—both going gamely—we made the pace into Leatherhead, seeing the 20-h.p. Humber, suffering from tyre troubles, and the 14-h.p. Brush in even more dire distress.

The road home was a familiar one, and the excellent run of the Scotch contingent was maintained to the last. Bad luck occurred to the De Dietrich when only 200 yards from the Palace, it running short of petrol and having to make a momentary stop. And then into the Palace in good style and in good time the Argyll strode—one of the forty-six cars that made a non-stop run, out of the seventy-six starters. Twelve others did as well for all practical purposes; seventeen had delays involving a loss of more than five marks, and only one—No. 12—had to retire. And thus ended a run mainly through police traps.



The Cars Leaving Crawley.

SATURDAY—TO BRIGHTON.

AN EASY DAY.

THE road to Brighton is familiar to most of those who took part in the competition now passed away into history, and the last day's journey of 91½ miles was looked upon more as a jaunt than a serious task. Although somewhat misty at the beginning, the sun gradually sent out its warm rays until quite a hot summer's day resulted. Early rising cannot be kept up for long without its effects showing, and the consequence was that we were almost too late for the start for London-by-the-Sea. As it was, the last car had just been despatched on its way when we arrived on the Parade outside the Crystal Palace. Little groups of motorists were scattered about chattering over the surprises of the Trials, photographs of some of the officials were being taken, the demolition of the Press box was already in hand, and altogether there was a calmness strangely in contrast with the busy scenes we had witnessed on previous mornings. According to arrangements our day should have been spent on the 24-h.p. Wolseley, but this car having started, we found a seat on the 12-h.p. vehicle of the same make, with which Mr. Luff-Smith, of the Wolseley Company, followed the Trials daily. The car in question is one of the 1904 models, and, while out-

wardly closely resembling the 1903 10-h.p. type, comprises many modifications and improvements. As we sped along our driver mentioned a few of these, which may here be briefly alluded to. In the first place, the Wolseley Company have now adopted pressed steel frames, and at the same time increased the wheel base from 6 ft. to 7 ft. The motor is run at a slightly faster rate than the old type, and is equipped with an improved carburettor and a quick-acting accelerator. The change-gear



The Scene outside the Old Ship Hotel, Brighton.

box has been re-designed, a considerable saving in weight being the result, while it is fixed in the frame on the three-point suspension principle. The car we were on was exactly similar to No. 51 in the Trials, except that while we ran entirely on pneumatics, the rear wheels of the Trial vehicle were shod with solid rubber tyres.

To return, however, to the run to Brighton, it was not until 8.15 a.m. that we left the Palace, making for Norwood Junction, in company with Mr. Brodtmann, of the Continental Tyre Company, on his Adler car. Unrestricted by Observers' instruc-

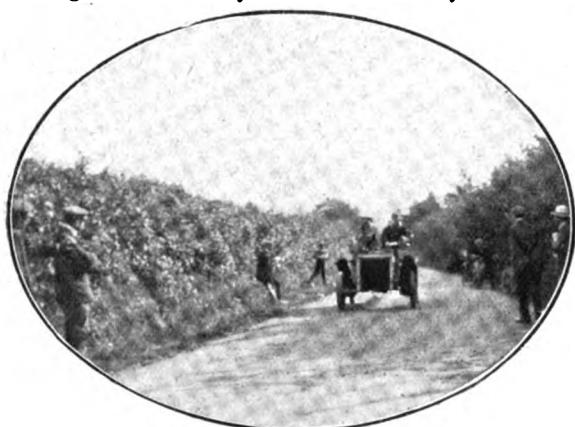


Gossiping Time on Brighton Front.

ons, there were no stages for us, and consequently no "crawls" to fill up time. On the other hand, a steady pace was maintained, notwithstanding the several miles of tram way lines. The narrow, busy High Street of Croydon was safely negotiated, not, however, without its incident, due to one of those dangers of the highway—a hooded van, the driver of which turned sharply round without giving a thought to any other traffic—vehicular or pedestrian. At Purley Corner we got beyond the

ever-increasing tramway system, and felt that at last we were fairly on our journey. Stoats' Nest and Coulsdon were soon left behind and nothing marred our progress until at Merstham we were reminded of the recent military manoeuvres by meeting an Army Service train fully half a mile long. Stopping not to make odious comparisons between the slow, rumbling military wagons and the speedy motor-car, we headed for Redhill. A mile or so on the London side of that town a car was seen to be in difficulties on the roadside, and as we passed by we discerned Mr. F. Wellington busily engaged in studying the internals of his 14-h.p. Brooke car.

Redhill gave us a hearty cheer as we slowly ran through its



The Cars ascending Handcross Hill.

ong chief thoroughfare, and even the policeman on point duty urged us forward. For once in a way, both Surrey and Sussex policemen thought not of traps to catch poor misguided motorists, but actually assisted in making the way clear for them, and in this respect the final run of the Trials stands out boldly from some of the preceding days. The interested crowds of spectators met with as we speeded along over the pleasant switchback road across Earlswood Common indicated that we were rapidly coming up with our quarry, or, to be more exact, the Trial cars, of which one of the White steamers (No. 84) proved to be the rearguard, the driver and mechanic being seen busily grappling with a burst tyre as we passed it near that curiously-named place, Pease Pottage.

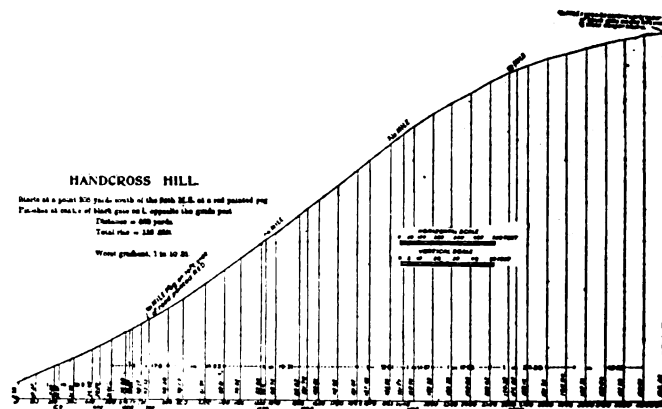
A few minutes more and we were in Crawley, where the competitors had had a compulsory stop of fifteen minutes, considerably extended in the case of half of them by reason of the closing of the level crossing gates. The modern rivals to the railway puffed and snorted at this undignified delay, and grunted their disapproval in lusty fashion as the cause of the stoppage—a goods train—passed across the road. The gates opened, however, we journeyed along in merry style, in company with the 10-h.p. Lanchester and Mr. Arnott's 10-h.p. Gladiator, and, arrived at Handcross, we bore to the left down the hill for Cuckfield, the inhabitants of which old-time place were all agog "to see the motor-cars." Cuckfield, if for nothing else, is certainly noted for sharp turnings; but, fortunately, these were safely negotiated. On to Clayton we went, at which place we began to come up with the advance guard of the procession. On the long hill near Patcham we were able to observe the behaviour of many of them. All made the ascent in good style, the performance of the 22-h.p. Daimler wagonette, with its ten passengers, including one solitary lady, being particularly noteworthy. From Patcham to Preston and from Preston to Brighton was only the work of a few minutes, and at 10.35 a.m. we pulled up opposite the Old Ship Hotel, after an uneventful non-stop run. Already a number of cars had arrived, and by 11 a.m. most of the competitors were lined up on the promenade under the upervision of the police, whose task, in view of the heavy traffic, was not of the easiest. The scene was a gay one. In addition to the eighty odd cars—competitive and non-competitive—which had come down from London, the local motorists turned

out in large numbers to welcome the visitors, while the many private horse-drawn open carriages with their fair occupants gave additional brightness to the scene.

The order went forth that the start of the return journey would take place at 12.30, instead of at 1.30, as on previous days, and exactly to time the cars began to slowly move away. Not being in control, our party decided to return *via* Cuckfield, and so make for the top of Handcross to see the cars climb this well-known hill. Leaving at 12.40, a speedy run was made to Cuckfield; but our arrival at Handcross was considerably delayed owing to a couple of farmer's horses refusing either to pass the car or to allow the automobile to get by them. The efforts of the men in charge of the animals proved unavailing, and, breaking loose, they set off at a gallop. Our driver stopped the engine and went in pursuit, we meanwhile enjoying a chat on motors and horses with a local farmer. At last Mr. Luff-Smith, whom we had almost given up as lost, returned with the news that he had got the horses into a field, and we set off once again, duly arriving at Handcross in time to see the tail-end of the procession mount the hill.

THE HANDCROSS HILL CLIMB.

Handcross Hill is a fairly stiff ascent, the worst gradient being 1 in 10.31, and the average 1 in 17.15. The distance over which the cars were timed was half a mile, and, although there was a fair number of spectators present, the bulk of these had left their cars on the side road at the top, so that the climb was made under infinitely better conditions than that at Westerham on the previous Saturday. Most of the cars we saw mounted the hill fairly well, some amusement being caused by the driver of a horse and trap passing one of the motor-vehicles on the steep part. At the time of writing no official results are available, but among the vehicles which took the hill at a good speed may be mentioned the following:—14-h.p. Martini, 18-h.p. James and Browne, 10 h.p. Gardner-Serpollet, 24-h.p. Wolseley, 12-h.p. De Dion, 20-h.p. M.M.C., 16-h.p. Rochet-Schneider, 16-h.p. Fiat, 12-h.p. Peugeot, 14-h.p. Brooke, 22-h.p. Daimler, 6½-h.p. Clyde, 10-h.p. Gladiator, 10-h.p. Horbick, 15-h.p. C.G.V., and 24-h.p. Darracq.



Profile of Handcross Hill.

The hill-climb over, a short stop was made in the village of Handcross, and another passenger, making the sixth, picked up. The homeward run was made without incident, beyond meeting a herd of unattended cows and innumerable motor-cars proceeding in the opposite direction. Indeed, it almost seemed as if there were quite as many private cars travelling towards Brighton as there were making for the Crystal Palace. On Earlswood Common we came across a car which, if it were but endowed with speech, could tell a remarkable story—we refer to the *Passe Partout*, which, built for a trip round the world, was dug out of a ditch in Russia, and now bears the legend "Friswell's Big Baby." Redhill, Merstham, and Coulsdon were left behind, as also the 10-h.p. Hallamshire (No. 43) and the 10-h.p. Thornycroft (No. 70), and soon we were once more travelling along

midst the Croydon trams to Norwood, and thence up the hill to the Palace, which was safely reached at 4.15 p.m., the Wolseley car having taken us through without trouble of any kind.

As a wind up to the Trials, the day's run was most successful, for of the 75 cars which started no less than 54 made non-stop runs, while only one failed to get back. How different this from the anniversary run to Brighton in November, 1899, when out of 104 which started from London in the morning only 50 had arrived at Brighton by half-past four, and 95 before eight o'clock, the return trip having to be left till the following day.

ON A STEAM CAR.

The morning was foggy and damp as we took up our position on car No. 84, one of the White steamers. Setting off at 7.48, we had as near neighbours the 12-h.p. Gladiator with Miss Levitt at the wheel, and the 14-h.p. Brooke car. The roads were in good condition, there being no dust, and the air was decidedly cool. Just beyond Redhill we were making excellent progress, and thoroughly enjoying the absence of noise and vibration associated with the White steam car, when it became apparent that something was wrong. The car was right enough.

engine took place. This over, we resumed once more the even tenour of our way, passing through crowds of people at Purley Corner and Croydon, eventually reaching the Palace at 4.10.

RESULTS OF THE DAILY RUNS.

THE following results are based on the rule, which comprises only a maximum of 3,000 marks out of a total of 10,375 for the whole trials. They are not, therefore, necessarily a criterion of the ultimate positions, as the awards depend on the computations of the Judges Committee under Rule 39. Only the cars with a maximum of five "Non-Stops" (out of eight) are given below.

Eight Non-Stops :

No. 39, 8-h.p. M.M.C.

" 48, 10-h.p. Argyll.

" 51, 12-h.p. Wolseley.

" 137, 22-h.p. Daimler.

Seven Non-Stops, one loss of 5 marks or less :

No. 52, 10-h.p. Wolseley.

" 87, 10-h.p. Lancaester.

" 93, 10-h.p. Renault.

" 105, 10-h.p. Gardner-Serpollet.

" 116, 10-h.p. White.



Photo by]

Motorists awaiting the arrival of the Competing Cars at Horley.

[Argent Archer

but we discovered a deflated tyre. Our driver and his assistant soon had their coats off, the wheel was jacked up, and after examination a change of tubes was effected. The cover being replaced, the pump was soon hard at work, and we were just about to make another start when a loud report told us that the outer cover had burst in a weak spot. Fortunately a spare cover was on the car, and in due course we were ready to start again. In the meantime the rest of the cars had passed us, and we pulled up at Crawley for the compulsory fifteen minutes' stop, unnoticed and alone. The run to Brighton was made without incident, the Old Ship being reached at 11.40. Luncheon over, we moved off in turn at 12.45, and found that after all we were not the last car. The journey to the foot of Handcross was uneventful; arrived there, we had a long stop to take our turn to start the climb. The car went up in fine style, and the way it spurted when near the top was delightful. Arrived at Horley, we had the usual fifteen minutes' compulsory stop, and left at 2.55. Between Merstham and Chipstead our progress, as that of the other competing cars, was very suddenly arrested by an official of the Club for the purpose of testing the brakes. Judging from the shock experienced, we imagine it was quite satisfactory! From there we were directed to enter an adjoining gateway, where an inspection of the

Seven Non-Stops, one loss of more than 5 marks :

No. 62, 7½-h.p. Wolseley.

" 133, 20-h.p. M.M.C.

Six Non-Stops, two losses of 5 marks or less :

No. 42, 12-h.p. Albion.

" 57, 12-h.p. Georges Richard.

" 77, 12-h.p. Star.

" 91, 12-h.p. De Dion.

" 102, 24-h.p. Wolseley.

" 114, 14-h.p. Martini.

" 126, 16-h.p. De Dietrich.

Six Non-Stops, one loss each of 5 marks or less, and more than 5 marks :

No. 71, 10-h.p. Peugeot.

Six Non-Stops, two losses of more than 5 marks :

No. 65, 12-h.p. Sunbeam.

" 92, 12-h.p. New Orleans.

" 140, 24-h.p. De Dietrich.

Five Non-Stops, three losses of 5 marks or less :

No. 130, 16-h.p. Rochet-Schneider.

Five Non-stops, two losses of less than 5 marks or less, and one of more than 5 marks :

No. 84, 10-h.p. White

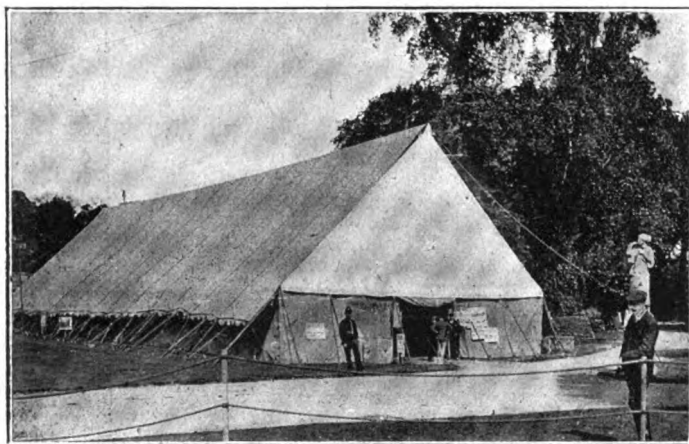
Five Non-Stops, one loss of 5 marks or less, and two of more than 5 marks,

- No. 14, 43-h.p. Cadillac.
- " 24, 6-h.p. Swift.
- " 63, 15-h.p. Spyker.
- " 97, 15-h.p. New Orleans.
- " 106, 24-h.p. Georges Richard.
- " 120, 20-h.p. Germain.
- " 127, 15-h.p. C.G.V.
- " 136, 22-h.p. Daimler.

Five Non-Stops, and three losses of more than 5 marks :
No. 79, 16-h.p. Argyll.

TRIAL NOTES.

ONE of the new cars making their first appearance in the trials was the 16-h.p. Maxim of the London General Automobile Company, Limited. The car is on Panhard lines, having a two-cylinder vertical engine attached to the main frame by brackets. The cylinder dimensions are 110 mm. dia. by 120 mm. stroke. The gear box, which gives three forward speeds and one reverse, is carried in an under frame, independent of the main frame, a flexible joint being introduced between the motor and gear. Two side chains transmit the power from the differential counter-shaft to the road wheels.



One of the Storage Tents at the Crystal Palace. (Mr. C. Friswell)

THE 20-h.p. M.M.C. car (No. 133) in the Trials comprises a number of detailed improvements which Mr. G. Iden was kind enough to explain to us. All the various parts connected with the engine, such as pumps, water-cooling fan, etc., are now gear driven, all belt and friction drives having been discarded. The long row of lubricators on the dash is controlled by a three position lever; in one position all are closed, in another they are all open, and in a third only those conveying oil to the various bearings on the motor are open; thus, when the engine is running and the car is at rest, no oil is required in the gear box and other parts of the transmission mechanism, and therefore the lubricators for these parts can be shut off and a saving in oil effected. Another improvement are the two-stage steps on either side of the car giving easy access to the front seat. These will be found a great convenience by ladies, and in addition are ingeniously made to serve the purpose of tool boxes.

A NOTEWORTHY feature of the 12-h.p. Sunbeam car, No. 65, was that the two side chains are enclosed in gear cases. Many attempts have been made to do this, and Messrs. Marston are to be congratulated in carrying it out, as undoubtedly the life of the chains will be considerably lengthened by being protected from dust and dirt.

THE Eagle Engineering and Motor Company, Limited write: "It will doubtless be within your recollection that one of

our 6-h.p. tandems was entered in the Trials, and that it came out satisfactorily in the Brake, Dust, and Noise trials, and did well in the runs commencing from the 18th to the 23rd inclusive. After this latter date it did not run, and we should like to point out that the reason for this was not any mechanical or other defect in the machine, but simply the fact that the man whom we had engaged to drive it suddenly threw up the job without giving us such sufficient notice as would have enabled us to have got another driver to take his place. As the tandem did not run on Thursday, the 24th ult., it was consequently disqualified."

THE following table gives an analysis of the daily runs:—

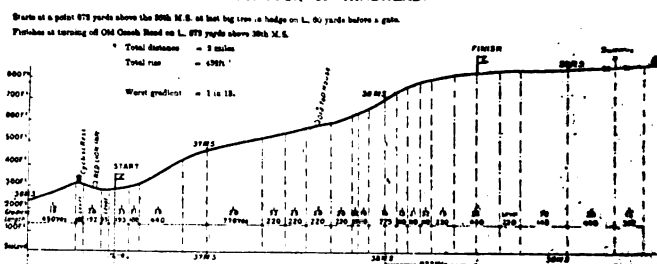
Date.	Place.	No. of starts.	No. of cars which made non-stop runs.	No. of cars which lost 5 marks or less.	No. of cars which lost more than 5 marks.	No. of cars which retired from run.
Sept. 18th	Margate	104	37	27	30	10
" 19th	Eastbourne	94	26	23	36	9
" 21st	Worthing	(1) 87	36	24	25	2
" 22nd	Folkestone	85	42	15	26	2
" 23rd	Southsea	83	41	11	27	4
" 24th	Bexhill	(2) 77	47	11	18	1
" 25th	Winchester	76	46	12	17	1
" 26th	Brighton	75	54	10	9	(3) 1

1. Nos. 14 and 19, which are included in the "9 retired" on the 19th re-started.
2. Nos. 2 and 125 did not start.
3. Results not computed for one car.

THE following table shows the speed in miles per hour of the twenty fastest cars in the Handcross Hill Climb on Saturday last. The hill has a rise of 154 feet in the measured 880 yards, the average gradient being 1 in 17.15, and in the worst piece being 1 in 10.31.

105	10-h.p. Gardner-Serpollet	26.70 m.p.h.
114	14-h.p. Martini	22.28
140	24-h.p. De Dietrich	21.7
100	18-h.p. James and Brown	20.69
66	2-h.p. Gladiator	20.69
130	16-h.p. Rochet-Schneider	20.18
102	24-h.p. Wolseley	19.2
133	20-h.p. M.M.C.	18.87
113	14-h.p. Renault	18.22
134	16-h.p. Fiat	17.61
118	24-h.p. Darracq	17.61
129	15-h.p. Pipe	17.44
108	16-h.p. Dennis	17.41
97	15-h.p. New Orleans	17.24
120	20-h.p. Germain	16.63
126	16-h.p. De Dietrich	16.57
95	12-h.p. Chelmsford	16.57
106	24-h.p. Georges Richard	16.13
121	20-h.p. Beaufort	16.07
91	12-h.p. De Dion	15.82

CONTOUR OF HINDHEAD.



Profile of Hindhead. Average gradient 1 in 24.

MONDAY of this week was spent in washing the cars and removing the dust and mud of the preceding week. At two o'clock about a dozen set out for Westerham to have an opportunity of once more making the hill climb, this concession having been granted as a result of their having been impeded by the great crush on the 28th ult. The judges have since been busy in examining the cars preparatory to drawing up the complete report, which it is expected will not be ready till at least the end of November.

IMPRESSIONS OF THE RELIABILITY TRIALS.

—X—

THE first problem likely to present itself to the casual observer of this year's Trials (he may be mildly relieved that the pedants did not succeed in christening them "Trustworthiness Trials," saving two syllables at the expense of euphony) regards their growth.

Last year fifty-seven cars faced the starter, of which forty-six practically succeeded in completing the week's course; this year the number had increased to 104, of which it appears that nearly the same percentage have reached their goal, in spite of the increased severity of the conditions, which would make this result a marked and evident indication of progress; and the largely increased proportion of cars which are of unimpeachable home origin cannot but be gratifying to all who have the welfare of the industry at heart. But the question suggests itself as to how much longer it will be possible to conduct such a solid phalanx of cars over our none too commodious high roads; and the success and safety with which it has been done is an eloquent testimony to the capabilities of the modern car and its driver.

With regard to noticeable improvements in design, these are

less operose and more efficient; and on the larger cars have a tendency to depart from that appearance which suggests an American soda fountain to the eyes of the profane.

It is also worthy of remark that the British maker has by no means fallen a blind victim to the charms of the honeycomb radiator, therein possibly showing his wisdom, for it is a vulnerable part at best, while its fan, though a practicable, is certainly a theoretically wrong and wasteful aid to cooling, and a quite needless complication on moderate-powered cars. The desire, however, to obtain an up-to-date appearance without actually adopting the honeycomb has led to the production of several outwardly similar types of a more or less continuously tubular structure, which look very promising from the point of view of efficiency and easy repair. Even the enclosing of the ordinary radiator by a case round the edges, though certainly the outcome of a mere pandering to fashion, has advantages—to the driver's knuckles!

It is probable that the final hill-climbing results, when published, will show a marked advance over last year, though those on Westerham will to some extent be vitiated by the unfortunate error of judgment which—combined with the inconsiderate behaviour of spectators—led to some confusion.

It would be premature to criticise the effects of the marking system as yet, though one is inclined to believe that alterations

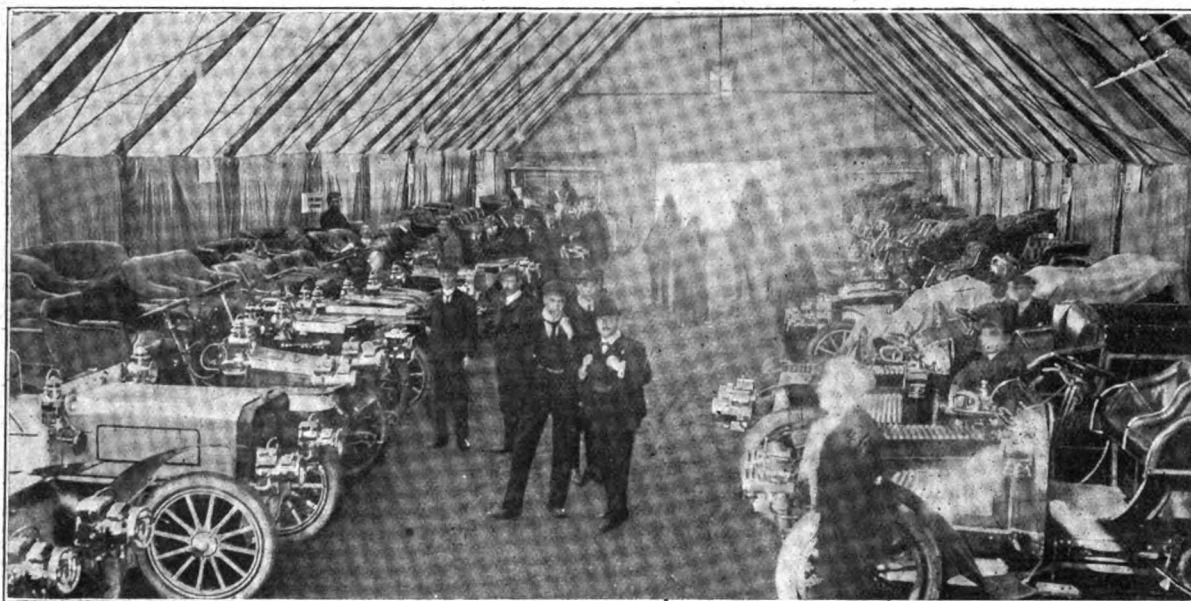


Photo by]

The Cars in the Large Storage Tent at the Crystal Palace.

[Mr. C. Friessell.

chiefly in minor, though none the less important, matters. Propeller-shaft transmission has become practically standard for powers under 12-h.p., and sometimes a little over; and it is noticeable that the dimensions of the differential box and bevel gear have mostly increased, a point the necessity for which was bound to be recognised before long; while its advantages on the score of perfect lubrication and cleanliness seem, for low powers, to outweigh the disadvantages of inability to alter gear to suit the country, and expense of renewal when worn out or deranged. The few attempts at a more economical transmission in small cars, if not yet phenomenally successful, need not be discouraged, while we know that it is seldom indeed that 60 per cent. of the engine power reaches the road wheels.

It can hardly be said that tyre troubles have diminished, though perhaps tyres of suitable proportions are more generally adopted. There is no doubt, on the other hand, that the standard of electrical fittings has considerably improved. Better accumulators, better plugs, and, above all, better insulation for the wiring of a car have made an enormous difference in the amount of trouble to be expected from these parts of its anatomy under unfavourable weather conditions. Lubrication arrangements are

giving a little more preponderance to actual running performance will be found desirable next time, while the question of facility of adjustment, though recognised to a slight extent under the present system, seems deserving of more consideration. This point deserves further elaboration, as its importance seems to have been lost sight of to some extent by some of the cleverest designers. The extreme instance, of the motor-bicycle in which it was impossible to change the plug without removing the petrol tank, is only a type of minor cases of a similar kind from which few cars are altogether free. Much has been done lately to bring the ignition system into more accessible localities, but there are other parts in connection with which advance on the same lines is needed. The use of gears in which the individual speeds are not separately replaceable is one; the spoiling of an accessible chassis by coachwork which impedes access to the countershaft brake for re-leathering, the clutch, and even in some cases the gear box, is another. In any case, apart altogether from official results, the experience gained by makers in running their cars under such conditions as those of this year's Trials—conditions severer than in any previous competition of the kind in any country—cannot but be valuable in the highest degree,

THE RELIABILITY TRIALS. THE DAILY RECORD.

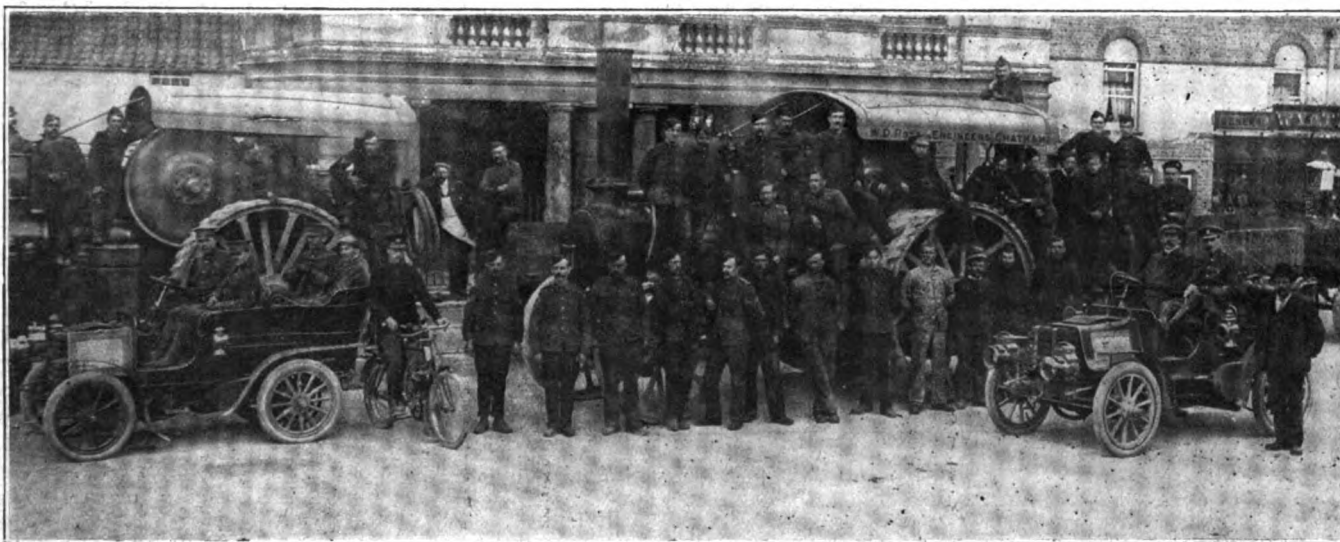
Official No.	H.P.	CAR.	Friday.	Saturday.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
CLASS A1.—Tandems, Quadricycles, and similar two-seated vehicles, over 170 lbs. weight, at a selling price of £160 or less.										
1	5	Century Tandem	D.	A.	A.	A.	N.S.	A.	N.S.	A.
2	6	Eagle Tandem	A.	A.	A.	N.S.	A.	Withdrew—reported trouble		with driver.
3	3½	Rex Tri-car	C.							
CLASS A.—Vehicles of a selling price of £200 or less.										
4	5	Baby Peugeot	A.	A.	A.	A.	N.S.	A.	N.S.	N.S.
5	6	Regal	N.S.	A.	A.	A.	A.	N.S.	A.	A.
9	6½	Vulcan	A.	A.	Collision.					
11	5½	Stanley Steam	A.	Serious delay.	A.	A.	A.	A.	A.	N.S.
12	5	Coventry Humberette	A.	A.	A.	N.S.	D.	A.	Connecting rod broke.	
14	6½	Cadillac	N.S.	Wheel broken.	A.	A.	N.S.	N.S.	N.S.	N.S.
15	6½	Pony Richard	C.	Retired owing to engine heating.						
16	6	Relyante		Abandoned owing to two collisions.						
17	5	Oldsmobile	A.	A.	A.	A.	N.S.	N.S.	A.	A.
18	6½	Clyde	A.	A.	N.S.	A.	N.S.	A.	N.S.	A.
19	6	Elswick	A.	Retired owing to ignition troubles.			A.	A.	N.S.	N.S.
20	6	De Dion Bouton	A.	A.	A.	A.	N.S.	A.	A.	N.S.
21	5	Oldsmobile	A.	A.	N.S.	A.	A.	A.	A.	N.S.
23	8	Achilles	A.	A.	A.	D.	D.	A.	A.	D.
CLASS B.—Cars of a selling price between £200 and £300.										
24	6	Swift	N.S.	A.	A.	A.	N.S.	D.	N.S.	N.S.
25	8-10	Regal	C.	Retired owing to gear troubles.						
28	9	Beaufort Tonneau	A.	N.S.	A.	N.S.	N.S.	N.S.	A.	A.
29	9	Argyll	A.	A.	A.	A.	N.S.	N.S.	N.S.	N.S.
34	10	Georges Richard	N.S.	A.	N.S.	A.	Retired owing to ignition troubles.			
35	9	Eagle	A.	D.	A.	A.	N.S.	A.	N.S.	N.S.
36	10	Rex	A.	A.	A.	N.S.	Retired owing to trouble with differential gear			at Liphook.
37	4	Roots	C.	Retired.						
38	9	Mohawk Manon	N.S.	D.	A.	A.	A.	A.	N.S.	N.S.
39	8	M.M.C.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
40	9	Darraaq	A.	N.S.	A.	A.	A.	A.	A.	N.S.
CLASS C.—Cars of a selling price between £300 and £400.										
41	10	Gladiator	N.S.	A.	A.	N.S.	N.S.	A.	A.	A.
42	12	Albion	A.	N.S.	N.S.	N.S.	N.S.	K.S.	A.	N.S.
43	10	Hallamshire	A.	A.	A.	A.	A.	A.	A.	N.S.
47	9	James and Browne	N.S.	N.S.	N.S.	N.S.	A.	A.	A.	A.
48	10	Argyll	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
49	14	Argyll	A.	D.	N.S.	C.	Nut loose on connecting rod on returning from Folkestone.			
50	10	Slims Welbeck	A.	A.	A.	A.	Retired—breakage auxiliary gear wheel.			
51	12	Wolsley	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
52	10	Wolsley	N.S.	A.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
54	12	Krupkar	N.S.	A.	A.	C.	Cardan joint broke on return journey from Folkestone.			
56	10	Horlick	N.S.	N.S.	N.S.	A.	A.	A.	A.	A.
57	12	Georges Richard	N.S.	A.	N.S.	A.	N.S.	N.S.	N.S.	N.S.
58	12-14	Relyante	A.	A.	A.	N.S.	D.	N.S.	N.S.	A.
59	13	Rex	N.S.	A.	N.S.	A.	N.S.	A.	A.	N.S.
60	10	Dechamps	A.	A.	N.S.	A.	N.S.	N.S.	N.S.	A.
62	7½	Wolsley	D.	D.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
63	10	Spyker	A.	N.S.	A.	A.	N.S.	N.S.	N.S.	N.S.
64	12	Darraaq	A.	A.	D.	N.S.	A.	N.S.	A.	N.S.
CLASS D.—Cars of a selling price between £400 and £550.										
65	12	Sunbeam	A.	A.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
66	12	Gladiator	A.	A.	A.	A.	A.	N.S.	N.S.	N.S.
67	12	Ariel	Abandoned owing to broken axle in avoiding a collision.							
68	14	Brooke	A.	A.	A.	A.	A.	A.	N.S.	N.S.
70	10	Thornycroft	A.	A.	N.S.	N.S.	N.S.	N.S.	A.	A.
71	10	Pengeot	N.S.	A.	A.	N.S.	N.S.	N.S.	N.S.	N.S.
75	8-10	Elswick	A.	Retired.						
77	10	Star	N.S.	A.	N.S.	A.	N.S.	N.S.	N.S.	N.S.
78	14	Beaufort Tonneau	A.	Retired through broken cardan joint.						
79	16	Argyll	N.S.	A.	N.S.	A.	N.S.	N.S.	N.S.	N.S.
80	15	Belaize	N.S.	A.	Retired owing to broken connecting rod.					
82	14	Brooke	A.	A.	A.	N.S.	A.	N.S.	A.	O.
83	10	Relyante Steamer	C.	Retired owing to bent connecting rod.						
84	10	White Car	A.	N.S.	N.S.	A.	A.	N.S.	N.S.	A.
85	12-14	Dennis	N.S.	A.	A.	A.	N.S.	A.	N.S.	N.S.
86	12	Clement	N.S.	Driver disqualified.						
87	10	Lanchester	A.	D.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
89	12	Brush	A.	D.	A.	N.S.	A.	A.	A.	N.S.
90	16	Maxim	A.	A.	A.	A.	A.	N.S.	A.	N.S.
91	12	De Dion Bouton	N.S.	N.S.	N.S.	N.S.	A.	N.S.	N.S.	A.
92	12	New Orleans	N.S.	D.	A.	N.S.	A.	N.S.	N.S.	N.S.
93	10	Renault	A.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
CLASS E.—Cars of a selling price between £550 and £700.										
94	20	Thornycroft	A.	A.	A.	A.	N.S.	N.S.	N.S.	N.S.
95	12	Chelmsford	N.S.	A.	A.	N.S.	A.	N.S.	N.S.	A.
96	15	Germain	A.	A.	N.S.	A.	A.	A.	N.S.	N.S.
97	15	New Orleans	N.S.	N.S.	N.S.	A.	A.	N.S.	N.S.	A.
99	15	Star	A.	Retired owing to broken sprocket.						
100	18	James and Browne	A.	A.	A.	N.S.	A.	N.S.	N.S.	N.S.
102	24	Wolsley	N.S.	N.S.	A.	N.S.	N.S.	N.S.	N.S.	N.S.
104	20	Winton	N.S.	Serious delay.	A.	A.	C. Damaged crank shaft replaced on road.			
105	10	Gardner-Serpollet	A.	N.S.	N.S.	N.S.	A.	N.S.	N.S.	N.S.
106	24	Georges Richard	A.	A.	A.	N.S.	N.S.	N.S.	N.S.	N.S.
108	16-20	Dennis	A.	A.	A.	N.S.	A.	N.S.	N.S.	N.S.
109	16	Lanchester	A.	Retired owing to smashing of cooling fan.						
111	20	Spyker	C.	Retired owing to gear troubles.						
113	14	Renault	A.	A.	A.	A.	A.	A.	A.	N.S.
114	14	Martini	A.	A.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
116	10	White	N.S.	N.S.	N.S.	A.	N.S.	N.S.	N.S.	N.S.
117	12	Humber	A.	Retired owing to pinion stripping.						
118	24	Darraaq	N.S.	A.	A.	A.	A.	A.	A.	N.S.
CLASS F.—Cars of a selling price of between £700 and £800.										
119	12	Peugeot	N.S.	A.	A.	N.S.	N.S.	A.	A.	A.
120	20	Germain	N.S.	A.	A.	A.	N.S.	N.S.	N.S.	N.S.
121	20	Beaufort	A.	N.S.	A.	A.	A.	A.	A.	A.
122	20	Humber	A.	A.	N.S.	A.	A.	N.S.	A.	N.S.
123	12	Wilson and Filcher	C.	Retired owing to trouble with commutator.						
125	25	Maudslay	N.S.	A.	A.	A.	A.	Withdrew owing to ignition troubles.		
126	16	De Dietrich	N.S.	D.	N.S.	N.S.	A.	A.	A.	N.S.
127	15	C.G.V.	A.	A.	A.	A.	N.S.	N.S.	N.S.	N.S.
128	18	Chenard and Walker	A.	Withdrew.						
129	15	Pipe with magneto clutch	Serious delay.	A.	A.	N.S.	A.	N.S.	N.S.	A.
130	16	Rochet-Schneider	A.	N.S.	N.S.	N.S.	N.S.	A.	A.	N.S.
131	18	Mors	A.	A.	A.	A.	C. Ran into a gate at Ewell—damaged magneto ignition.			
132	20	Holcar	C.	Retired owing to trouble with gear.						
133	20	M.M.C.	N.S.	N.S.	N.S.	N.S.	N.S.	A.	N.S.	N.S.
134	16	Fiat	N.S.	A.	N.S.	N.S.	A.	N.S.	A.	A.
CLASS G.—Cars declared at a selling price of more than £800.										
136	22	Daimler	N.S.	N.S.	A.	N.S.	N.S.	A.	A.	N.S.
137	22	Daimler	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
140	24	De Dietrich	A.	A.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.

N.S.: Non stop run. A: Completed run with brief delay. C: Retired from day's runs. D: results not computed.

THE MILITARY MANŒUVRES.

MR. T. UNDERWOOD has kindly furnished us with the following account of his experiences on his 12-h.p. M.M.C. at the recent manœuvres:

On Tuesday, the 15th ult., we left Aldershot at 8.30 a.m. went to Reading to leave an officer who was going down by rail, and then proceeded from Reading to Basingstoke to inspect the repair depot of the steam lorries. From Basingstoke we afterwards went to within six miles of Winchester, there meeting the whole of the transport of General French's army, which extended for ten miles, the road being entirely blocked. The Basingstoke road was then taken to the turning for Micheldever station, where we came across the head of the transport column. Owing to the very narrow road we had great difficulty in proceeding along with the transport, but came across a bye road, or rather an apology for a road, all grass in the centre with two narrow tracks, which ran parallel with the road to Kingsclere. Emerging on to the main road, we passed the rear of General French's army. After lunch at Kingsclere we proceeded to Newbury, inspection being made of the camp and the traction engines. We then made for Aldershot *via* Reading and Wokingham, making a total run for the day of close upon 120 miles.



The Military Manœuvres. Scene at Westbury.

[To the left are Lieutenants Saunders, Kidner, O'Brien, and Davidson on the former's 10-h.p. M.M.C. To the right is Mr. T. Underwood on his 20-h.p. M.M.C. with Major McNulty as passenger.]

On Wednesday we left Aldershot at 9.30 in the morning and visited the repair yard at Basingstoke, proceeding *via* Andover to the camp at Ludgers Hall, then to Bulford, having to travel 4½ miles over the downs. From Bulford we ran *via* Amesbury, Tilshead, Lavington to Westbury, which was the principal camp of Sir Evelyn Wood's force of the West, and returned *via* Warminster to Salisbury, where a call was made at the headquarters of the Second Army Corps. This done, we ran into Bournemouth for supper, left about midnight for Aldershot, which was reached *via* Southampton, Winchester, Basingstoke and Camberley in the early hours of the morning, after a short stay for two hours at Kingsworthy. The total running for the two days, including various other journeys which were made and not set out above amounted to close on 430 miles.

Troubles were very few indeed—three punctures and dirty petrol delayed us for a few minutes. There was no trouble with the police whatever, for, instead of booking our names for exceeding the legal limit they most respectfully saluted, this happy state of affairs most probably being due to the fact that we had an officer on board. Altogether we had a most enjoyable time, although there was plenty of hard work. There is one improvement that might be suggested, namely, that the awakening gun, which is situated on Gun Hill at Aldershot, should be fitted with a silencer.

CONTINENTAL NOTES.

ON Sunday, September 20th, the hill-climbing trial of Mont Ventoux took place under the organisation of the A.C. of Avignon. It has become one of the annual trials, and one likely to survive on account of the nature of the hill. The road leads only to the top, and is almost devoid of traffic. Last year M. Chauchard won this competition on a 70-h.p. Panhard, climbing the hill in a little over 26 min., which was considered a brilliant performance. This year the winner was Dangeau, who climbed the hill on a 40-h.p. Georges Richard in 25 min. 25 sec. Beconnais and Gros, on Darracq cars, took the second and third places, and Bablot on another Georges Richard was fourth.

THE French garage "Paris Automobile" is offering a prize of 1,000 francs for the best design for a new bonnet for the Hotchkiss motor-car, of which they are the sole concessionnaires. Drawings must be sent in to the office of Paris Automobile, 48, Rue d'Anjou, on or before October 1st. At the front of the bonnet there must be a honeycomb radiator, the shape of which is left optional. The length of the bonnet must be 735 mm., the width 614 mm. The distance from the splashboard to the

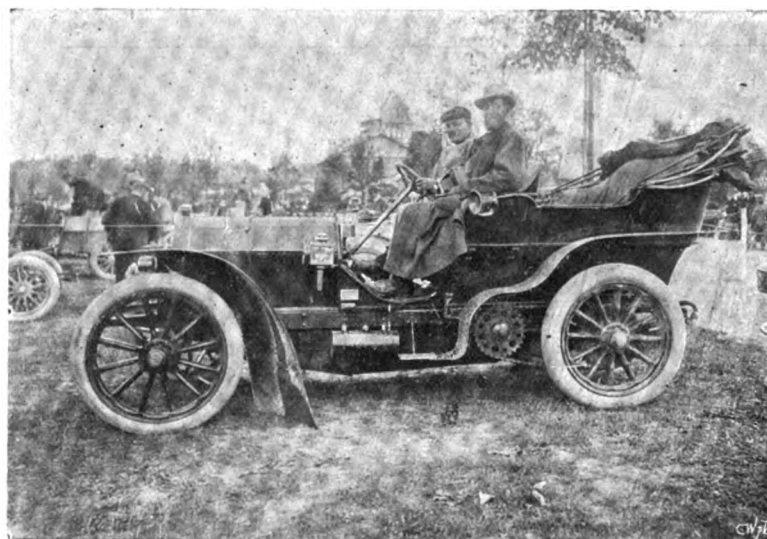
front of the radiator is 799 mm., and the width of the radiator is 650 mm. The width of the car at the outside of the side frames is 750 mm. The prize of 1,000 francs will be given to the winner should a bonnet after his design be adopted for the Hotchkiss cars; in case it is not adopted the prize will be 500 francs.

THE applications for space in the Grand Palais on the occasion of the Paris Salon, which opens on December 10th, already exceed the total applications last year, and it will be necessary to limit the space to be allotted to each exhibitor, and also the space required for the passages, to the strict minimum. Last year the stands covered 6,500 square metres, and this year they will cover 10,000. Should the number of visitors increase in the same proportion, it will be impossible to circulate on the days when the masses visit the show, and it will be necessary to establish an organised system of keeping to the right or to the left, as the case may be, to prevent a complete block.

THE Touring Club of France, commonly known as the T.C.F., and which has done such good and useful work in marking the principal routes in France, and also the dangerous hills and turnings, has had its head offices at the Place de la Bourse for many years. Some idea of the extent of its work was given

by its president, M. Ballif, at a meeting held last week. Upwards of 2,000 letters and 1,500 post parcels are sent out per day. The library, said M. Ballif, contained fourteen chairs, and was sometimes visited at one and the same time by 120 members. It was decided by the meeting, and with the help of some 1,800 proxies, to close a purchase with the proprietors of the house in the Avenue de la Grande Armée, where the famous, or rather infamous, Humbert family lived and carried on their operations. The 200,000,000 francs inheritance of the Crawford estate has now passed into the hands of the Touring Club of France.

THE classification and distribution of prizes in the Paris to the Sea motor-boat race has caused a great deal of ink to flow, and there is much dissatisfaction. The fact is that the organisers of the race had a good idea, but they had certainly not the experience necessary to carry it out efficiently. But the notion has taken root, and another great event is being prepared for the early spring, March or April, 1904, at Monaco. There will be 100,000 francs in prizes, and already entries are flowing in, although no programme has been yet published, or even elaborated.



The 60-h.p. Mercedes with which Jenatz won the Gordon Bennett Cup has now been fitted out as a Touring Car. The illustration shows it in its new form, with Werner at the wheel and Mr. Clarence Gray Dinmore, the owner, at his side.
[Allgemeine Automobil Zeitung.]

THE Criterium of $\frac{1}{4}$ -litre cyllindred motor-cycles was such an unqualified success that it has been the beginning of a series of trials limited to motor-cycles. The most important actually on the tapis is being organised by the Moto-Cycle Club de France, under the patronage of the "Auto," and consists in a 1,000 kilometre reliability trial, which will take place from the 26th to 31st inst., over six routes out from Paris and back again, on six days, and totalling up to 1,000 kilometres. The trial will be international, and will be run in three series, namely—first, motor-cycles whose cylinders have a cubical content of not more than $\frac{1}{4}$ of a litre; second, motor-cycles whose cylinders have a cubical content of not more than $\frac{1}{2}$ of a litre; third, motor-cycles for more than one passenger whose cylinders have a cubical content of not more than 2.5 of a litre. One litre contains 0.2200968 gallons, therefore $\frac{1}{4}$ of a litre equals 0.055 gallons, $\frac{1}{2}$ of a litre equals 0.073 gallons, 2.5 of a litre equals 0.88 gallons. All competing motor-cycles must be touring machines, such as are sold to the public in regular series, and not machines specially made for the competition. Two hundred marks maximum will be given, divided up over the different qualities as follows:—Regularity of running, 100; brakes, 15; silence, 15; ease and comfort, 10; condition before and after trial, 10; accessories,

10; speed in hill-climbing, 10; mud guards, 10; facility of carrying luggage, 10; weight of machine without accessories, 5; price without accessories, 5. There will be a speed trial over a kilometre at the Velodrome at the Parc des Princes, on the last day, and the speed attained will be endorsed on the certificate given to the winning cars. There will also be a class for groups of three of the same manufacture, and a cup for the most regular group. The entrance fee is 25 francs (£1), and must be sent to M. Leroy, secretary of the Moto-Cycle Club of France, 74, Avenue de la Grande Armée, Paris.

THE Chateau-Thierry hill-climbing trial takes place to-morrow. There are about 40 entries, including four Darracs, one Renault (the same one on which Marcel Renault met with his death in the Paris-Madrid race, and which is now owned by Lord Carnarvon), one Panhard (driven by Heath), and two Mors.

It is said that there will be six Mercedes cars competing for the Gordon Bennett Cup in 1904. This is how it is to come about, according to the latest rumour. Two Mercedes cars have been chosen by the German Automobile Club, and an eliminating trial will possibly put a third Mercedes in the German team. These cars must be driven by members of the German Club, who will not accept professionals in membership. The Austrian Automobile Club, however, is not so particular, and they have just sent in their challenge for the Gordon Bennett Cup. At Vienna-Neustadt, however, the Mercedes Company have their Austrian works, which will provide, so rumour says, three other Mercedes cars for the Cup. The names of the drivers are even given, as follows:—Braun, Werner, and Max.

"LA FRANCE AUTOMOBILE" is about to open the entry lists and organise a competition for touring cars for a journey from Paris to Rome. It will not be a race in any sense of the word, except as far as concerns some special tests over one and five kilometres on the level and up-hill, and a 500 metre race with a standing start and dead stop over a line. The principal points of the competition will be the weight carried, including body, the price of the chassis, consumption of fuel on 100 kilometres of level and of up and down-hill roads, brakes, capability of turning in the least space, comfort, delays. There will be no "closed controls," and any repairs will be allowed *en route*, the cars being treated just as if they were doing ordinary touring. The speed and consumption trials will be made without any previous warning, so that the cars cannot be specially prepared for them.

"LE MONDE SPORTIF" is organising a trial of electrical motor vehicles to be run off from the 19th to the 24th November. The contest will be divided into two categories—one for cars weighing less than 1,500 kilog. and one for vehicles under 2,200 kilog. The first day's run will be from Paris to Rouen, 133 $\frac{1}{2}$ kilometres; on November 20th, from Rouen to Abbeville, 116 $\frac{1}{2}$ kilometres; on November 21st, Abbeville to Creil, 132 $\frac{1}{2}$ kilometres; and on November 22, Creil to Paris, 90 kilometres.

ACCORDING to the American Consul at Yokohama, the Japanese are beginning to regard the jinriksha as a slow method of conveyance, and now look on the automobile with considerable favour. Recently a motor-car has been purchased by a silk firm for use in delivering goods, and efforts are being made to establish a company for operating a passenger automobile service between Nagoya and Atsuta, a distance of about 10 miles.

MR. GEORGE CARTER, of the True Briton Hotel, Folkestone, lately organised a motor trip to Tunbridge Wells. The cars and forty passengers started from Folkestone, breakfasted at Ashford, and then proceeded to Tenterden, Cranbrook, and Pembury, where a brief stoppage was made. At three o'clock the return journey was made by way of Frant and Ticehurst, a stop being made at Hawkhurst. Home was reached after travelling through New Romney, Dymchurch, and Hythe.

HERE AND THERE.



A MOTOR-CAR is about to ply between Richmond and Reeth, in Swaledale.

THE Southern Motor Club is holding a run to Esher to-day (Saturday).

THE Empress Eugénie, with several of her friends, drove over to Windsor Castle one day last week by motor-car.

TO-DAY (Saturday) the Leicester Automobile Club will hold a run to Dunchurch via Lutterworth.

THE Putney Motor Company are, we hear, about to bring out a new covered car specially designed for the use of travellers.

THE last run of the season of the Lincolnshire Automobile Club will be held to-day (Saturday), the destination being Folkingham.

MOTORING visitors to the Crystal Palace will be glad to learn that the Dulwich toll has been reduced from one shilling to threepence.

THE Motor Makers and Garage, Limited, has been registered with a capital of £2,000. Mr. T. W. Acton is the first managing director and secretary.

MR. E. W. SHATTUCK, the President of the American Automobile Club, has just completed a tour of 3,500 miles through Southern France and Switzerland on a 16-h.p. Panhard.

A NEW motor passenger and goods service has been inaugurated between Saarlouis and Wadgassen, Germany. One omnibus seating twenty-five persons and a motor-truck of 20 tons capacity comprise the service.

MR. F. MORTON WALLIS, president, addressing the Eastern Counties Veterinary Society at Yarmouth, has said that if the motor-car traffic continued to increase the vets would have to become motor engineers.

THE summons against Albert Bronet for driving a motor-car at a greater speed than twelve miles an hour, at Southwick, on September 5th, has been dismissed at Shoreham, the wrong man having, by mistake, been summoned.

AMONG the British firms exhibiting at the forthcoming Paris Salon we notice the names of the Wolseley Tool and Motor-Car Company, the Motor Manufacturing Company, the Electro-mobile Company, and the Collier Tyre Company.

AT a meeting of the Farnham Rural District Council the chairman stated that he witnessed the Automobile Club's reliability run from London to Southsea over Hindhead last week, and by the time sixty of the cars had passed over the road the surface was completely disintegrated.

THE London and Brighton Railway Company are said to be proposing to connect Newhaven with the last-named town by means of a service of motor-cars. The road from Newhaven would be across the sea front of the South Downs, a highly picturesque and breezy drive of nine miles.

STIRLING'S MOTOR CONSTRUCTION COMPANY, LIMITED, has been registered in Edinburgh with a capital of £120,000, in £1 shares, to purchase or otherwise acquire the motor-carriage building and engineering business of Stirling's Motor-Carriages, Limited, and to carry on the business of builders and manufacturers of motor-vehicles in all its departments.

AT a meeting of the Sanitary Committee of Dundee Town Council a report was submitted with reference to the suggested introduction of a motor-wagon to be used for carting refuse. A statement was read from the Chief of the Cleansing Staff, Glasgow, to the effect that a favourable report could not be given of the capabilities of a vehicle of the kind. After discussion, the meeting resolved to take no further steps in the matter.

THE Chairman of the Ripon City Bench (Mr. J. Baynes) states that complaints have been made by magistrates and others of the excessive speed at which motor-cars were driven within

the city boundary, and especially about Borrage Bridge and Westgate, and they wished the police to take most active steps to stop such proceedings. Superintendent Keel assured the Bench that the remarks of the Chairman should have due attention from the police, and instructions would be issued accordingly.

AN "emergency cap," otherwise known as a tyre legging, or gaiter, has been brought out in chrome leather by Messrs. Beckworth's, Limited, of Brandon Street, Bermondsey, S.E. This appears to be an effective cover for any rent in tyres, and has enabled many a motorist to get along home when punctures have threatened failure. The same firm are also bringing out an inlay for tyres in chrome leather; as well as leggings for drivers of motor-cars. Their useful tool hold-all contains ample capacity for more than two dozen tools in a length of 32 inches, the tools being kept firmly in position by a leather strap down the centre, which, while allowing for any tool to be taken out, does not loosen its grip of the others. All these specialities are known by the name of "Bonworth."

MESSRS. GEIPEL AND LANGE, of Parliament Mansions, Westminster, have recently developed an ignition system somewhat similar to that adopted on the Chenard-Walcker cars. The ignition plugs on a two-cylinder engine are connected up in series with one another across the high tension terminals of the induction coil. Curiously enough, the company worked out their system without being aware of its previous use, and they have designed a special apparatus in the way of an induction coil for enabling anyone to adopt the new system without making any structural alteration on their vehicles. The arrangement consists of a single-cylinder coil with the secondary winding

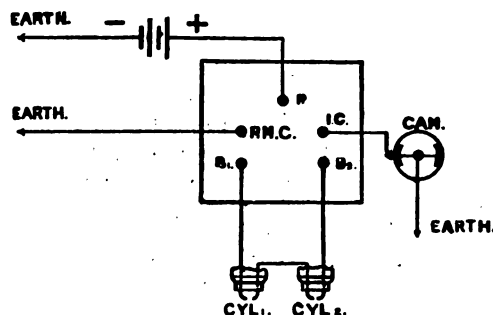


Diagram of Connections.

entirely insulated from earth, and which has two H.T. terminals instead of one, as usual. From these terminals a lead is taken to one plug, and the other lead to the other plug of any pair of cylinders working upon the same crank. The high-tension circuit is then completed through one plug across the gap of the second plug to the secondary again. If now a connection is made, every complete revolution, to the primary, a spark will take place in each cylinder every revolution. The two gaps being in series, one gap acts as intensifier to the other. With this arrangement a single coil is thus used for each pair of cylinders, while the wiring of the low-tension circuit is simplified. Only one contact is necessary, although the cam has to have two projections, or segments. If, however, the car is specially designed for such arrangement, there is no need for a half-time shaft operating the firing device, as, a contact having to be made at every revolution, a simple cam fitted on the end of the crank-shaft working in connection with one trembler or positive make device is all that is necessary. The coil which Messrs. Geipel and Lange are providing is one which has sufficient capacity to provide two sparks in series of sufficient intensity to fire charges over very wide ranges. It is a trembler coil furnished with the well-known Vulcan high-speed trembler, which is provided with no adjustment, as the trembler, having once been set by the makers, does not require any alteration. It vibrates at the high rate of 450 vibrations per second, and a spark is produced under all conditions. We understand that Messrs. Geipel and Lange have two double-cylinder cars running satisfactorily under this new system, and that the actual current consumed is only .15 ampere when running at average speed.

MOTOR-CYCLING NEWS.

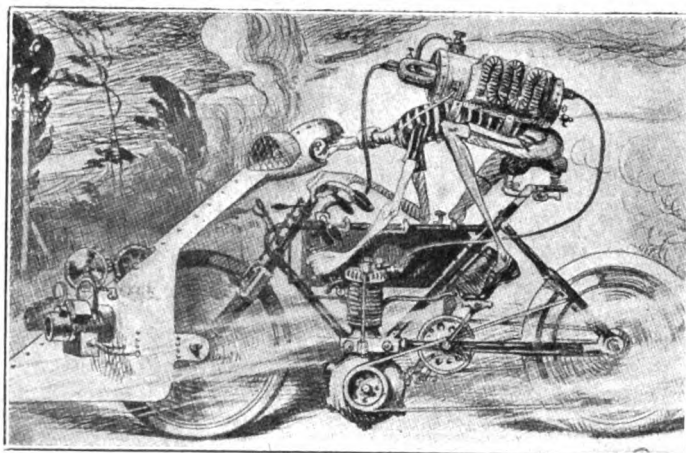
PRINCE ALBERT OF BELGIUM is not only an ardent motorist, driving his own 24-h.p. car, but has become a convert motor-cyclist, having used his machine in the recent Belgian military manoeuvres.



A Snapshot from Deauville, France.

THE Secretary of the Auto-Cycle Club will be pleased to hear from any members who will be willing to attend a Sunday run, which it is proposed to hold early this month. Suggestions for a suitable destination are also invited.

THE New York Motor Cycle Club is organising a braking or stopping contest to be held during the present month, and a 100-mile road test for November 3. In the latter event the contestants will not be permitted to pass the pacemaker nor to fall further behind than a given distance, say one mile. All lapses in this regard, and all stoppages, will involve a loss of points. The club has also provided for the winter season by instituting a series of "Saturday night talks," when lectures and addresses on various subjects of motor-cycle interest will be given.



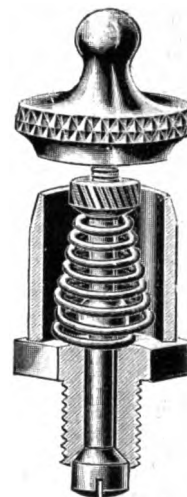
The Motor-Cycle Racer of the Future.
(Das Schnauferl, Munich.)

WHAT should have been the final test for the Edge trophy took place over the usual 200 miles course in the neighbourhood of Hatfield on Saturday, under the auspices of the Motor Cycling Club, but since three of the eight competitors made non-stop runs the tie will have to be re-ridden. There were only ten entrants, of whom the following started at 6 a.m.:—F. Clarke (2½-h.p. Werner), H. E. Cowles (2-h.p. Stockwell), J. Crundall (3-h.p. Humber), W. R. Heighton (2½-h.p. Vinco) Leonard Jones (1½-h.p. De Dion tricycle), Milligan (2½-h.p. Bradbury), A. S. Wilson (2½-h.p. Ormonde), and Holmes. Clarke and Crundall failed early in the trial

owing to ignition troubles in the one case and trouble with the petrol pipe in the other, and at the end of the first hundred miles Heighton, Holmes, and Wilson were disqualified for exceeding the speed limit, thus leaving only Cowles, Jones, and Milligan, who completed the 200 miles without a stop.

AT Hammersmith, on Tuesday, the inquiry was concluded with reference to the death of G. F. Lea, aged 35, electrical engineer, of Parson's-green, who died in the West London Hospital. One night last week deceased was riding along the Lower Richmond Road, Putney, on a motor-cycle, when he dashed into a private omnibus and was seriously injured. The jury returned a verdict of "Accidental death," caused by the excessive speed at which the machine was travelling.

EVERY motor-cyclist of experience knows the advantage of at times injecting a little paraffin into the cylinder head of his motor to unstick the piston rings and melt the congealed oil upon the walls of the cylinder after a period of rest. In a great many cases this task is shirked because of the trouble involved in doing it. Mr. J. Van Hooydonk, of Phoenix Motors, Limited, has devised an appliance to facilitate this operation, consisting of an exaggerated lubricating cup designed to screw into the cylinder head, just large enough to contain sufficient paraffin for the purpose, and furnished with a spring-controlled valve through which the paraffin, after having been injected to the cup, can be ejected



therefrom into the cylinder. This also serves a double purpose, inasmuch as after the operation has once been performed for starting, the cup can be refilled and the charge of paraffin remain in it until next required. It is impossible to inject more paraffin than the proper quantity for the reason that the valve is really a small measure, and when the cup, which extends to half the height of the valve, is filled, it contains only one complete charge. The valve is fitted with a cap which excludes not only all dust or dirt, but which, fitting as it does on to the bevelled edge of the cap, draws the valve up tightly in its seating, so avoiding any possible loss of compression. When the time comes for the reserve charge of paraffin to be injected to the cylinder, the milled cap need only be loosened a few turns, and then, by pushing it down, the valve is opened, allowing the paraffin to descend to the cylinder. We may add that the device is suitable for motor-cars as well as motor-cycles.

THE Dutch automobile reliability trials have been in progress during the week, thirty-nine cars taking part.

REGISTRATION under the new automobile law in Massachusetts began on September 1, and up to the 29th ult. the number of vehicles registered was 2,830.

PRINCE KHILKOFF, the Russian Minister of Roads and Bridges, has just made an automobile tour through the Caucasus, as a result of which a motor-car service for the transport of passengers and goods is shortly to be started between Soukouné and Touapse.

CORRESPONDENCE.

TRAPPING MOTORISTS.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—I appreciate your weekly warning as to "police traps," and can confirm your reference of September 5th to the one between Purley and Horley. On Sunday, August 30th, I was travelling from London to Brighton, and on the road mentioned by you was stopped and informed that the speed I had attained over a measured distance of 176 yards was at the rate of 26 miles per hour. It appears that the police signalled from one point to another and then timed by means of a stop watch, which I think is totally unfair, seeing that the measured distance selected is downhill all the way.

However, I duly appeared before the Reigate Bench of magistrates on the 12th ult., and was mulcted in a fine of £2 and costs. They had a very good "bag" on that day, seeing that there were twenty-eight of us fined in amounts varying from £1 10s. to £10 and costs, but I think that it is totally unfair to time any vehicle downhill, especially on a quiet country road the same as exists between Purley and Horley.—Yours faithfully,

F. G. LUCAS.

A CARBURETTOR QUERY.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—Could any of your readers kindly give me the following information:—1. Is the "Trusty Carburettor" suitable for a 3½-h.p. De Dion? 2. Would the fact that I have to stop and start my engine thirty times a day be an objection to its use? The "Trusty" carburettor burns paraffin oil after the engine has been started with petrol.—Yours truly,

W. PEMBERTON PEAKE.

SIDE SLIP.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—Can any of your readers tell me what is best to do, or the simplest effective appliance to get, to prevent slipping—the roads here in Devon are hilly, and at times very greasy? My car weighs about 10 cwt. and has 26-inch artillery wheels, with pneumatic tyres.—Yours truly,

W. MUDGE.

INSULTS ON MOTORISTS.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—Having read the case of a motorist being hit with a whip by a horse driver, I thought I would let you know that I had a similar experience about six weeks ago. While travelling between Kendal and Cockermouth, on a piece of narrow road, I met a gentleman (?) driving a horse and trap. When he saw me he held up his hand for me to stop, which I did, I also throttled my engine down so that it made hardly any noise. The horse went past without taking any notice at all, but as the driver came abreast of me he slashed me across my face with his whip, leaving a thick blue line on my face. The road was too narrow to turn without some trouble, or I should have followed, him and taken his address. After such unwarrantable acts as these one can hardly wonder if motorists take no notice of signals from horse drivers.—Yours truly,

FRED W. CANNING.

THE TEN-MILE LIMIT.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—I think that many motorists are unaware that county councils are inviting district councils and other local authorities to take action under the new Motor-Car Act, and to suggest roads, for nomination to the Local Government Board, which shall be closed to motor traffic as being less than 16 ft. wide or over which the speed limit shall be only ten miles an hour. Local motor-car owners and motor-cyclists must organise themselves immediately and take prompt action, appealing to their local authorities by deputation or otherwise, suggesting that, as they are strong, they should be merciful, and pointing out the great severity of the Act without the imposition of the above clauses. Unless they organise the whole country will be cut up into ten mile areas where not definitely closed to motor traffic.

It is only local influence that can induce these authorities to postpone action and to give motorists an opportunity of showing that the application of these clauses is unnecessary. What we need is an organisation consisting of local units, strong branches, with a central committee of representatives for general control. The maximum subscription must be a really small one, within the reach of every motor-cyclist, and half of it at the disposal of the local committee. Such an association would reach everywhere and know everything that was being done, and seize an opportunity that would be missed by a central body. We do not need a weekly journal, we are already well supplied, but at the most a monthly report on C.T.C

lines. All these points seem essential to really successful action. Prompt local organisation has had a wonderfully good result in the large town from which I write.—Yours truly,

CARPE DIEM.

AN "ACT" OF DISCOURAGEMENT.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—Mr. Norman D. Macdonald's letters are too long to admit of reply, otherwise you would need another sheet in your *Journal*. It may be not unfair to suggest to him that it is a waste of powder and shot to keep a fire of explosive bullets pouring on adversaries who, in view of himself and his friends, are down already.

I would only say one word as to his accusation that it is "going out of the proper duties of a Club to help the police and the authorities to look after a very commonplace class of offender." It is not a question whether it is a duty, the true question is: Is it an interest? And I for one hold that if we do not do our utmost to put down this "commonplace offender," whether in doing so we help the police or not, we fail to act in the interests of automobilism. For it is eminently in the interest of the Club and all who use motor-cars that a class of people who cause us to stink in the nostrils of the community in an increasing and most injurious degree day by day should be put down, whatever we may be called upon to submit to effect it.

It is all very well to shout "delay, delay, delay," and that we should have sat tight, etc., etc. But your correspondent will never persuade those who know that delay could have been attained, and he will never persuade me that, had delay been obtained, it would not have been infinitely worse for all automobilists in the end. Another year of unrestricted road-hoggism would have been disastrous.—Yours truly,

J. H. A. MACDONALD.

THE EMISSION OF STEAM.

THE Motor Transport Company, London, was summoned at Farnham for being the owners of a locomotive which emitted steam in contravention of the Locomotive Act of 1865. The company was represented by Mr. Douglas Mackenzie, managing partner, who, addressing the Bench, said that the locomotive in question did not come under the Act of 1865; it came under the Act of 1896, and to be in accordance with the provisions of that Act it was so constructed that no smoke or visible vapour was emitted from it except from some accidental or temporary cause. The evidence of the sergeant showed that the cause was temporary. The Act did not say "accidental and temporary cause," but "accidental or temporary cause"; and he submitted that the steam which the sergeant saw was only temporarily emitted. When the cylinders got cold, water collected in them, and it was necessary to force it out by steam to prevent the ends of the cylinders being blown out. John Brone, the driver of the locomotive, said that on the day in question he was driving from Alton to London, having delivered a load of oil at the former place. He stopped to get some food at a place near the post office in West Street, Farnham, and stayed there about a quarter of an hour. During that time some water had collected in the cylinders of the locomotive, and when he started he opened the cylinder drain cocks to let the water run out. He had gone about a hundred yards—from the post office to the town hall—when the sergeant stopped him. It was from a temporary cause that the steam was emitted.

After a short consultation, the Chairman said the Bench considered that the steam had been temporarily emitted, but he thought the company ought to caution their drivers against emitting it in the town. The case would be dismissed. The company would pay the costs. Mr. Mackenzie said it was a point of law that the costs should not be charged in a case which had terminated like that. After consultation with the clerk the Bench remitted the costs.

POLICE TRAPS.

A TRAP in which the telephone is an important factor is in active operation between Sawbridgeworth and Bishops Stortford.

A POLICE trap has been in active operation on the Acle and Blofield road (Norfolk).

FOR a fifth of a mile on the hill going from Camberley to Bagshot is a police trap of which motorists should beware.

MOTOR-CAR ACCIDENT.

AT West London Police-court, William Fraser, a motor-car driver, of Peckham, was charged with wantonly driving his car, and causing bodily harm to John Wright, a watchman, Lower Tooting. The injured man was crossing Upper Tooting Road on the 25th ult., when he was knocked down by the car and dragged along a considerable distance. He was picked up insensible, and removed to the hospital. The magistrate ordered a remand, and allowed bail.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Garstang	G. Chapman, Bradford	22	20s., etc.
"	J. Crabtree, Liverpool	23	20s., etc.
Neston	H. Wette, Liverpool	25	£5, etc.
Bourne	Sir G. Whichote, Sleaford	40½	£5, etc.
Sherburn	A. Gibbs, Woking	—	£3, etc.
Goole	A. White, London	—	£5 9s. 6d.
Eastbourne ..	W. F. Alexander, Fordingbridge	—	£3.
Bamber			
Bridge	E. Barber, Stockport	—	£5, etc.
Downham ..	*E. G. Jones, Tooting	30	10s., etc.
Gosport	*Capt. Crichton	25	40s., etc.
Oundle	*H. Hodson, Oundle	—	£2, etc.
Sherburn	*G. Veitch, Bishop Auckland	—	10s., etc.
St. Helen's ...	*J. M'Lean, St. Helen's	20	1s., etc.
Bath	R. Pearce, Southampton	18	£2, etc.
"	S. Broadway, Bournemouth	25	£2, etc.
"	S. Horstmann, Bath	22	£2, etc.
"	*H. B. Lowe, Bristol	20	£2, etc.
"	*A. Dawes, Bristol	22	£2, etc.
Woking	F. Poole, Egham	22	£3.
"	*W. T. Gratwick, Hammersmith	30	£3.
"	W. Maclean, Woking	—	£3.
"	Lient. Pierce	—	£3.
Wokingham	J. Heath, Surbiton	14	£5, etc.
"	C. Classen, Peckham	14	£5, etc.
"	E. Charpentier, Bourne End	29	£10, etc.
"	J. W. King, Taplow	34	£10, etc.
"	F. N. Stanlow, Maidenhead	18	15.
"	H. Mosenthal, Queen's Gate	24	£3.
"	R. Howard, Wadebridge	21	£5, etc.
"	*E. Clacy, Reading	23	£2, etc.
Romsey	W. R. Chadburn, Tunbridge Wells	27	£5.
"	C. Barrett, Stony Stratford	20	£5, etc.
"	T. Williams	25	£2, etc.
"	R. Rowland, Salisbury	20	£2, etc.
"	P. F. Hendy, Southampton	22	£2, etc.
Southampton	W. H. Bradford	28	£, etc.
Grantham ...	J. Freeman, Kettering	—	£2, etc.
Colwyn Bay	*C. Lee, Manchester	9	£1, etc.
Dunfermline	W. Sterling, Culross	—	not proven.

* Indicates Motor-Cycle Cases.

CAPTAIN SIR ROBERT K. ARBUTHNOT, Flag Captain to Admiral Sir John Fisher, Commander-in-Chief at Portsmouth, last week appeared before Admiral Field and other magistrates, at Fareham, to answer a charge of driving a motor-car at an excessive speed on the road between Porchester and Cosham. A constable, named Ballard, said defendant's car covered a measured quarter of a mile in 43 seconds, which was equal to 21½ miles an hour. In cross-examination, he produced a photograph with a view of refuting defendant's suggestion that it was impossible for him, when 440 yards away, to see when a car got on to the mark. The Bench came to the conclusion that defendant was travelling over twelve miles an hour, and therefore fined him 40s., including costs.

CONSIDERABLE interest was taken in a case tried in the Dunfermline Sheriff Court, in which William Stirling, motor-car driver, Blair Castle, Culross, was accused of having, on 17th August, in Kincardine-on-Forth, driven a motor-car in a furious and reckless manner and run over a dog and nearly run over a postman. All the witnesses for the prosecution agreed in saying that the car was being driven at the rate of thirty miles an hour at the time of the two incidents mentioned, while the occupants of the car and the driver estimated the speed at from eight to ten miles an hour. In finding the charge not proven, Sheriff Gillespie said that long before the days of motor-cars it had been found exceedingly difficult to measure the speed of a vehicle, and the difficulties were now increased. Most people would certainly over-estimate the speed of a motor-car, because the noise and the vibration were apt to make them think that the vehicle was going faster than it really was. He did not wish to lay too much stress on the evidence of the occupants of a vehicle, for he had always found during his twenty-three years' experience that every one of the occupants identified themselves with the driver. In this case, however, it had not been proved to his satisfaction that the car was going at a speed that was excessive. At the same time, he hoped that the driver would be very careful in future in Kincardine. In the course of the proceedings the car was brought to the County Buildings, in front of which it was put through a short trial to illustrate a point raised in the case.

AT Steyning Petty Sessions, Samuel Batson, of Beckenham, was summoned for furiously driving a motor-car at Washington. P.C.

Turner said defendant was travelling at the rate of twenty-three miles an hour. Witness stopped him but he refused to give his name and address. He re-started his car, and nearly knocked witness down. Afterwards, however, defendant got out of his car and gave his name and address. Defendant was fined the full penalty of £10 and 7s. costs.

GEORGE ALBERT WALLACE, of Willesden Green, was summoned for a similar offence. P.C. Turner said defendant was driving at a rate of twenty-five miles an hour, and the magistrates imposed a fine of £5 and 7s. costs.

HARRY PHILPOT, of London, was charged with a similar offence. The speed in this case was said to be 19½ miles an hour, and defendant was fined £3 and 7s. costs.

THOMAS WEATHERHEAD was summoned for a similar offence at Henfield. P.C. Thompson said defendant was driving at the rate of 18½ miles an hour. Fined £2 and 7s. costs.

CONSTABLE HUGHES, who proved the two cases at Garstang, said no inconvenience was caused to vehicles or foot passengers.

It is rumoured that the Dublin, Wicklow, and Wexford Railway Company contemplate running a service of motors between Shillelagh and Newtownbarry.

AN Australian correspondent informs us that a proposal is under consideration to organise a motor-car and cycle reliability run from Sydney to Melbourne next January or February.

FROM a postcard dated the 25th ult., we learn that Madame Lockert, who is making a journey from Paris to St. Petersburg on a 14-h.p. Tony Huber car, had safely reached Berlin, where she met with a great reception.

MORE than £25,000 worth of automobiles are said to be in the Appraisers' Warehouse in New York awaiting valuation. Many of them cannot be handed over to their owners until disputed questions of value have been settled.

THE Office of Public Road Inquiries of the United States Department of Agriculture, Washington, has issued a reprint from its year book containing an article on the "Use of Mineral Oil in Road Improvement," by Mr. James W. Abbott.

WE briefly mentioned in our last issue that the Speedwell Motor and Engineering Company, Limited, had secured the sole agency for the new Leon Bollée cars, a feature of which is said to be the extraordinary quietness in running, and the great elasticity of the engines. The general lines of the car are similar to those of the Mercedes, and it is fitted with a honeycomb radiator of an improved design. There will be two models, 24-28-h.p. and 40-45-h.p., both with four cylinders.

FROM Messrs. Merritt and Hatcher, Limited, we have received a copy of a little book on "Gas Engines: Their Advantages, Action, and Application," written by Mr. W. A. Tookey. As the title implies, the work deals with gas engines, but as the cycle of operations in these is the same as in petrol motors, users of the latter will find much useful information in Mr. Tookey's book, which deals with the care and management of gas engines in a thorough manner.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, OCTOBER 10, 1903.

[No. 240.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

Road Improvement.

THE report of the Departmental Committee on Highways is, on the whole, a very satisfactory one. If the recommendations of the Committee are carried out, they will go a long way to solve many of the difficulties of the "motor problem." As we intimated last week, the Committee recommend that certain selected roads should be known as "national roads," be subsidized by the State, and their maintenance supervised by a Central Department. The proposal also that bye-pass roads should be built for fast traffic round towns whose streets are already crowded by local traffic, is a very important one, while the suggestion for giving the authorities additional powers to widen roads is, in view of the Motor-Car Act, another matter of supreme interest to automobilists.

Roadside Wastes.

THE question of roadside wastes, to which we referred in our report of the run to Winchester last week, is, we are glad to see, recognised as one of great importance—a fact which the Committee attribute to the great and growing increase of automobile and other fast traffic. For the purpose of protecting these wastes, with the view, we would suggest, of ultimate incorporation into the roadway, the Committee have adopted the suggestion of the Commons and Footpaths Preservation Society. This was to the effect that the county courts should be empowered to settle the question of what land forms part of a highway or the waste of such highway on the application of the highway authority—or of a specified number of rate-payers.

A Subject for Discussion.

WE trust these ideas will be incorporated in a Bill, and that the measure will be passed through the Houses of Parliament with all the celerity of a Motor Car Act. The Roads Improvement Association is to be congratulated on the finding of the Committee, which should give road reformers the basis of legislation in the near future. The matter is so important that it should be discussed by every provincial automobile club during the coming winter. We shall be glad to hear of the matter being introduced into programmes, and also of the result of discussions of the points raised.

An Essex View of the Bill.

AT Tuesday's meeting of the Essex County Council a resolution was unanimously passed in favour of giving magistrates power to send a motorist to prison for a first offence under Section 6 of the Motor Car Act, 1903. The section in question, which deals with accidents caused through motor-cars, only enacts a fine not exceeding £10 for a first and second offence, imprisonment being an alternative punishment to a fine for a third or subsequent offence only. Capt. Kemble, R.N., who proposed the resolution, said he thought a motorist who

caused loss of human life or damage to any person should be placed on the same footing as the driver of a horsed vehicle. He referred to the fact that the perpetrators of injury seldom waited to see what damage they had done, but went off full speed on their motor-cars. Under the Act, if a motor scorchers accidentally killed or maimed a pedestrian, all that the Court could do would be to fine him £10 for a first or second offence. Major Sir F. C. Rasch, M.P., in seconding the motion, said they did not want to obstruct the motor-car trade, but they desired to check the "road hog"—the motorist who ruthlessly ran down people, and cared nothing for horses, dogs, poultry, or anything else on the highway. The resolution was carried without a single dissident, and a copy of it was ordered to be sent to the President of the Local Government Board.

A Bill at Bombay.

THE Bombay Government has issued the text of a Bill to regulate the use of motor-cars in the Presidency. The statement of objects and reasons of the measure, which is signed by the Hon. Mr. Fulton, is as follows:—"The growing popularity of motor-cars and the dangers attendant upon their use by reckless or unskilled persons render legislation for their control necessary in this Presidency as they have already in Bengal. The circumstances of different localities are so widely different that a specific enactment of universal application is considered impossible. In the absence, moreover, of experience in the legislative regulation of motor-cars, it is probable that frequent changes will be found necessary. For these reasons it is thought that the enactment should confer the power to make statutory rules. The Bill in its main outline follows the Bengal Motor Car and Cycle Act, 1903 (Ben. III. of 1903). Certain additional clauses are, however, considered necessary. Power is taken, clause 2, sub-clause (2), paragraph (k), to prohibit altogether or to regulate the use of motor-cars on ghats and hill stations, to limit their use to certain hours in certain places and to prohibit other traffic in certain hours. Power is also taken, clause 4, sub-clause (1), to prohibit plying for hire except under license. One reason for this provision is to bring motor-cars within the ordinary obligation of public conveyances to have licenses (cf. Bom. VI. of 1863, which would not apply to the present case). A second reason is that in country districts it is thought desirable, in order to encourage a new application of capital, to retain power to give exclusive rights for a time, not as against the competition of ordinary traffic, but as against rival motor-car companies. In the larger towns free competition would not be interfered with.

Encouraging Experiments.

THIS suggestion as to giving exclusive rights for a time to firms establishing motor-car services in country districts appears to us somewhat novel, but in the circumstances of India should be useful in attracting capital. Otherwise private enterprise can hardly be expected to run the risks incident to such new ventures. For, success once attained, rival concerns would doubtless spring up to rob them of the profits earned after long and patient endeavour. Hence the advisability of encouraging experiments by such means.

For Municipal Work.

THE Cardiff Health Committee has discussed a report of the sub-committee appointed to consider the question of providing automobile refuse wagons and water carts. It was reported that a motor wagon costing £500 would do the work of six horses costing £420, and the maintenance charges for the motor would be £10 per week less than for the horses. The department is at present twelve horses short of its full complement, and it was decided to purchase two motors at £500 each, less 2½ per cent., as an experiment, the purchase money being already provided for in the current estimates. The West Ham Town Council has also decided to purchase an automobile for the use of officers engaged in connection with its new Tramways Department.

Helping the Police.

IN our correspondence columns Messrs. Tetley, Tree, and Tetley give their views as to the question recently raised in these columns with regard to motorists warning others as to police traps being mulcted in heavy fines in consequence. Probably this legal opinion will reassure those who have hitherto refrained from assisting fellow motorists to escape the dangers that lurk in hedgerows and behind bushes. There is apparently no reason why such help should not be rendered, seeing that the object of the Legislature in making laws is not merely to punish evil-doers, but to warn them against committing offences. The motorist who tells others of the presence of the police trap and advises them to go slowly is therefore acting in consonance with the spirit of the law.



Mr. A. Beatson on his Locomobile at the Cat and Fiddle, near Buxton, reputed to be the highest licensed house in England.

The Speed of Tramcars.

THE speed of tramway-cars on the London County Council's electric system was discussed during a case the other day at the Lambeth County Court. On July 12th a car ran into a wagonette in Camberwell New Road, London, S.E., causing several

of the occupants to be thrown out. As a result they sued the County Council, and Judge Emden awarded five plaintiffs damages ranging from £7 10s. to £21. He found that the car was travelling at a speed of over ten miles an hour. As it was proved in evidence that drivers could attain a speed of eighteen to twenty miles an hour on the cars, the Judge said that he hoped the London County Council would devise some check on the men.



The Reliability Trials. The 9-h.p. Beaufort (No. 28) on the Speed Track at Bexhill. Photo by [Argent Archer].

"Justice" to Motorists.

WERE the instance cited by Mr. Dunhill in his letter on another page a solitary case we would have published it without comment; but it is but typical of the state of affairs found on many a county bench and of the animus which actuates the police in several districts. When such is the normal condition of things so far as the attitude towards motorists is concerned, there can be no wonder that owners of cars have little faith in the so-called justice to which they have sometimes to fall unwilling victims. The difficulty of obtaining evidence in favour of motorists is frequently experienced by strangers to rural districts, where the local policeman is often a *persona grata* and his neighbours are not likely to contradict his word.

Motor Transport for Goods.

AT a meeting of the Society of Engineers, held at the Royal United Service Institution, Whitehall, on Monday, Mr. J. Patten Barber, President, in the chair, a paper was read on "Motor Transport for Goods," by Mr. Douglas Mackenzie. To arrive at the actual working costs of motor vehicles, he went at length into the question of repairs and renewals, and emphasized the necessity for laying off the motor one day per week, to ensure proper attention to the boiler and engine. He also pointed out the need for proper supervision, and showed that such must be reckoned in the working costs. He discussed the proper allowance for depreciation, and gave his reasons for fixing this at 25 per cent. per annum. He also pointed out the risks that must either be insured against, or allowed for in averaging expenses. After remarking that every case differed in many of its component factors, and that therefore the costs of motor transport, as compared with horse transport, or railway charges, could not be stated with mathematical accuracy, the author gave a table of costs, the figures given being the mean of those obtained in actual practice, the cases having either come under his own experience, or the results having been afforded by the users themselves. These figures showed that if the loads were less than five and a-half

tons the horse was the cheaper, but that above that the advantage lay with the motor. The author then urged the necessity for a better and stronger form of road wheel, to stand the strain of motor work, and also impressed on inventors the great future that lay before the internal combustion engine when it could be made to work with crude petroleum or residue. The wear and tear produced on the roads was treated at some length, the conclusion being that if the roads were of a proper standard, there was less wear and tear from the use of motor vehicles than from any other form of transport. In conclusion, Mr. Mackenzie pointed out that motor transport was essentially an expert engineer's business, and that the user of one or two vehicles would do better to put his work out to contract than to employ his own motors.

see the car, but the driver could not see him. It rested on his judgment as to when the car passed the first mark and Carr started his stop watch.

The Motor-Car Act and Scotland.

THE following circular has been issued from the Scotch Office to county clerks north of the Tweed:—"I am desired by the Secretary for Scotland to request that you will direct the attention of your County Council, at their forthcoming meeting in the month of October, to the important duties imposed upon County Councils under the Licensing (Scotland) Act and Motor Car Act of last session, which takes effect on the 1st January, 1904. It is proposed at a later date



The Wolseley Petrol 24-h.p. Tractor built for the London Fire Brigade.

A Typical Police Trap.

THOSE who participated in the Reliability Trials had some experiences of police traps. In a case against Mr. T. S. Foster, at the Havant Petty Sessions, the police have explained their method of work. P.C. Green, stationed at Emsworth, said he was on duty in the Havant road, about 10.55 a.m., with P.C. Carr. Witness was one side of the road and the other officer on the other. They saw a car approaching from the direction of Emsworth. As they saw it reach a mark at a measured distance of 220 yards witness said to P.C. Carr, "Now!" When the car had covered the measured distance witness again said "Now." The other policeman then said, "Eighteen seconds. Stop him." The time was registered by a stop watch. The car was stopped and the driver asked him if he was aware he was exceeding the limit. He replied, "Impossible. I might have been going 16 miles an hour, but it was impossible for you to have seen me when we passed your mark." Witness told the defendant he would be reported for driving at 25 miles per hour. In cross-examination, he added that both officers were in plain clothes. Witness stood on the footpath on one side, and Carr stood immediately opposite, hidden in a recess. It was Carr's duty to take note of the time on his stop watch and also to see the car pass the first mark. He stood near the recess, about a yard from the railing, and by looking between two telegraph posts he could

to make a more detailed communication to you on the subject of those duties, but in the meantime, as preliminary action is required, *inter alia*, in the case of the Licensing Act with a view to the possible division of the county into licensing districts, and in the case of the Motor Car Act with a view to the establishment (in accordance with regulations to be issued by the Secretary for Scotland) of a system of registration of cars and licensing of drivers, the Secretary for Scotland desires to suggest that the Council may find it advantageous to appoint a committee or committees at the October meeting with power to take the necessary steps for bringing the Acts into operation in your county."

Captain Deasy.

CAPTAIN DEASY, who has just driven his 14-h.p. Martini car up the cog-wheel mountain railway from Caux to Rochers de Naye, above Teribet, on the Lake of Geneva, is a well-known explorer. Gazetted to the 16th Lancers in 1888, Captain Deasy resigned his commission in 1897 in order to interest himself in exploring. His survey work in Central Asia has been of great importance. Two expeditions covered a period of three years, and during this time more than forty thousand square miles of territory were explored and surveyed, and the heights of three hundred mountains determined. His

experiences with the Tibetans Captain Deasy has described in his book. He found the source of a river which had hitherto been unknown, and he was rewarded when he came home by the highest recognition an explorer can hope for in England. The Royal Geographical Society gave him its medal. Since then Captain Deasy has become as enthusiastic over motoring as he was formerly over mountains.

Motorists' Rights.

IN the case at the Bristol Court, reported on another page, the judge held that motor-cars were entitled to the same rights on public roads as other vehicles. This dictum will probably surprise some of the drivers of horses, who seem to think that their use of the road for so many generations has given them an entire monopoly. The prejudice on the part of many of the drivers of horses against motorists is one of the things which time and experience will wear away, but, meanwhile, it is a real danger to the enjoyment of the pastime. Hence the frequent reiteration of the advice so frequently given in these columns, that drivers of motor-cars should exercise every care, particularly when passing through populous places, or in narrow lanes, where turnings are frequent and hedgerows are high.

In the Straits Settlements.

THE question of a motor-car service on the Pahang Trunk road was first mooted in 1896, long before the removal of head-quarters, when Mr. Yip Yik Chew, the general manager of the farms in this State, offered to provide such a service directly the new road was open to traffic. The negotiations failed, and nothing further was heard on the subject until about 1901, when the Malayan Transport Company brought the matter into prominence. Unfortunately, however, the service which this company was to have maintained broke down at its very inception in March of 1902. Later on, the company went into liquidation; and almost immediately afterwards Messrs. Kester and Loke Yew took the matter up and formed the Federal Automobile Service Company. A contract has been signed with the Government and the company is placing upon the road at least six cars for the mails, and a vehicle with accommodation for twenty passengers and goods.

A Motor-Car Wedding.

ON Tuesday evening of last week about a score of members of the Wolverhampton and District Automobile Club met at their head-quarters, Victoria Hotel, Wolverhampton, for the purpose of presenting Mr. Joe Lisle with a silver tea service, suitably engraved, and bearing the club badge, upon the occasion of his marriage. The Hon. Secretary, Mr. S. R. Rhodes, on behalf of the contributors, expressed pleasure at the opportunity given them of showing in a practical manner their appreciation of Mr. Lisle's efforts to further the interests of automobilism, and his sportsmanlike conduct as a driver. They one and all wished him and his bride long life, prosperity, and increasing happiness. Mr. Owen, chairman, in making the presentation, requested Mr. Lisle to accept the articles not so much on account of their intrinsic value, but more especially because of the kindly feeling which had prompted the gift. The Club were proud of him as a member, and on behalf of its members he wished Mr. Lisle and his bride every possible happiness. Two days later Mr. Lisle was united in wedlock to Miss Bessie Babbage at St. Luke's Church, Blakenhall. The bride was driven to church in a 20-h.p. M.M.C. car by Mr. George Evans, who after the ceremony drove the bride and bridegroom to Dr. Scott's, the bride's brother-in-law's residence, where a reception was held. The Hon. Secretary of the Club drove to the church on a 16-h.p. Ariel, Mr. W. Owen on a 10-h.p. Wolseley, Mr. A. E. Jenks on 8-h.p. De Dion, Mr. Ted Lisle, 10-h.p. Star, and Mr. R. Cobb, 10-h.p. Star. After the

reception the bride and bridegroom left for Southport, the latter to take part in the automobile trials, journeying after the conclusion of the same to Brighton.

A New Use for Old Tyre Covers.

M. PAUL MEYAN, of our French contemporary "La France Automobile," has unearthed—we cannot say invented—a new method of preserving pneumatic tyres from rapid wear. He lately returned from a long automobile tour in Italy, where the roads with their sharp flints very soon cut to pieces five outer covers and eleven inner tubes. Thinking that the expense of fitting new tyres every day or so was likely to make his tour somewhat costly, the idea struck him of using an old outer cover to protect the tyre. The cover, naturally of larger dimensions than the one it protected, was pierced with holes along one edge corresponding with the spokes of the wheel. The tyre was deflated, and one edge of the old cover was forced underneath, while the other edge was fastened to the spokes by wire. The arrangement was so effective that M. Meyan states that he completed his tour without another puncture, and he is convinced that, protected in this way, a tyre will last almost indefinitely. It is true that the double cover rather slows the car, but this is a small price to pay for the added security and the economy effected. The additional outer cover should be somewhat larger in diameter, although of a smaller size; thus, for a 920 by 120 mm. tyre M. Meyan recommends the use of an old 960 by 90 mm. cover and for a 910 by 90 mm., one of 950 by 65 mm.

Eastbourne's Municipal Public Service.

REFERENCE has already been made in these columns to the municipal public motor bus service which has lately been inaugurated at Eastbourne. Four Milnes-Daimler cars form the present fleet, three of these being kept busily in use on distinct routes, one vehicle being kept in reserve. A fifth bus, a Chelmsford steam car, is also on order, to have the same seating capacity as the petrol vehicles. Some little difficulty has, we understand, been experienced as regards tyres, but otherwise the cars are doing well and are much appreciated by visitors and residents.

THE Lincolnshire Automobile Club held its last official meet of the season at Folkingham on Saturday, the 3rd inst.

THE new Wolseley 36-h.p. car failed to do itself justice at the Southport trials owing to a new clutch which the makers found had not sufficient movement to enable it to be properly released, thus making it very difficult to change the gears. In the first, second, fourth and fifth races the driver was unable to get higher than the second speed. The car was quite new, and finished only just in time to be despatched to Southport for the Speed Trials, and the Wolseley Co. had not an opportunity of sufficiently trying it at the works to find out this difficulty.

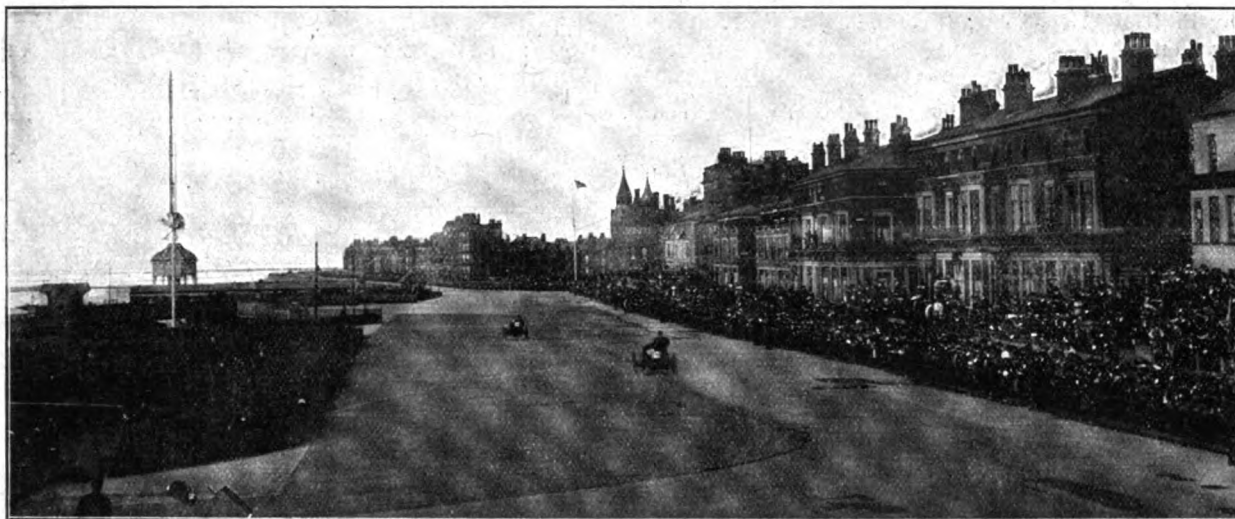
ALTHOUGH very little has been heard lately of the Hall hydraulic transmission gear, the syndicate which have had the matter in hand have been quietly at work, and are about to put on the market a number of 2½-ton motor lorries fitted with the arrangement. A 3-ton lorry provided with the Hall gear has been in use since February, 1900, and has been driven over every kind of road many thousands of miles. For the purpose of showing the result of such an amount of work the gear was opened a few days ago for inspection, for the first time since it was made. On examination it was found that the gear was still in working order, that the main parts, including the pump and power pistons, plungers and cylinders and main bearings, showed no wear at all. In fact, the only parts which have worn are the bearings of the small ends of the connecting rods, but these are still in working condition and can be bushed at the cost of a few shillings each when it becomes necessary.

THE SOUTHPORT TRIALS.

THE Southport meet of the Liverpool Self-Propelled Traffic Association and the A.C.G.B.I. has come and gone, leaving impressions of bad weather, fair speed, and heavy hotel charges. Over a straight kilometre course the cars and cycles were timed, and although no speeds such as made the Phoenix Park meeting memorable were attained the racing was of an attractive character, some of the endings being particularly close.

The events were run off on Friday and Saturday last, the weather on the latter day being against records, a strong wind

they might congratulate themselves on the visit of the Automobile Club. He was very fond of motoring, but he realised perfectly well that a great many prejudices would have to be removed before the pastime was as popular in this country as in France. He could not say that he was in favour of the Motor Car Act altogether. He thought it was perfectly safe to drive at the rate of from thirty to forty miles an hour on many country roads, while in other places it would be unsafe to travel at the rate of twenty. The speed should be left to the discretion of the drivers, though he was of opinion they ought to pass an examination to secure certificates of efficiency. He trusted that next year's trials would be held in Southport.



View of Southport Promenade During the Trials



Photos by]

The Race between the 16-h.p. Lancheater and 12-h.p. Peugeot.

[Argent Archer.

blowing in the faces of the competitors. In the early part of the day rain fell, but later the weather settled to fine although somewhat chilly. The final results are given on the following page.

THE PRIZE DISTRIBUTION.

In the evening the prizes were distributed in the Cambridge Hall by the Mayoress, this ceremony being witnessed by a large audience. The Mayor, Mr. T. T. L. Scarisbrick, presided, being supported by officials of the two organising associations, members of the local committee, and a number of others. The Mayor, who, as is well known, is an enthusiastic motorist, said he thought

The Mayoress then presented the cups and bowls, the winners of medals being promised their prizes as soon as they could be prepared. The donors of cups included Miss Daisy Hampson; Mr. Ernest Owers, London; Mrs. Charles Cordingley; Mr. Lionel de Rothschild, London; Mr. C. Higginbotham, Macclesfield; the Liverpool Self-Propelled Traffic Association; Captain Thornycroft Veinon, Southport; Mr. L. Williamson, Southport; Mr. Charles Scarisbrick, Southport; the Mayor of Southport, Mr. T. T. L. Scarisbrick; Mr. J. Preston, Southport; and the directors of the Liverpool Cycle and Motor Show, Limited.

Thanks were tendered to the Mayoress, on the motion of Mr. Williamson, seconded by Captain Vernon, and the Mayor suitably responded.

On Saturday evening a conference was held between a number of motorists and representatives of the Southport Corporation, Mr. Roger Wallace, K.C., presiding. It was decided that, provided the Corporation of Southport forwarded an invitation to hold the motor trials in Southport, a meeting be held there, probably in May or June next year, the date to be regulated according to that of the Gordon Bennett race, which takes place in Germany. The Southport meeting will be held first, and thus the machines competing in the Gordon Bennett race will have an opportunity of competing first in Southport. It was suggested by Professor Hele-Shaw, Liverpool, that the meeting be a three days' one.

Appended are the results:—

CLASS A.—Handicap for machines up to 114 lb. in weight, and cylinder capacity up to 70 by 70: 1, J. Spencer, Ariel (2 min.); 2, C. H. Richards, Minerva (2 min. 9 2-5 sec.); 3, J. F. Crundall, Humber.

CLASS B.—Handicap for machines up to 170 lb. in weight, and cylinder capacity up to 84 by 84: 1, S. Wright, Excelsior (1 min. 27 3-5 sec.); 2, H. Rignold, Riley; 3, B. Yates, Humber.

CLASS C.—Handicap for motors up to 170 lb. in weight, owned by residents in Lancashire.—Heat winners: C. H. Threlfall, Excelsior, 8 sec. start, 1 min. 31 4-5 sec.; H. Rignold, Riley, scratch, 1 min. 32 4-5 sec.; R. Crossley, Riley, 5 sec., 1 min. 45 2-5 sec.; and fastest loser, J. Edge, Bat. Final: 1, C. H. Threlfall; 2, H. Rignold; 3, J. Edge.



Photo by

The Start of one of the Motor-Cycle Heats.

[Argent Archer.

CLASS D.—Machines of any cylinder capacity, but not exceeding 170 lb. in weight: 1, S. Wright, Excelsior (1 min. 14 sec.); 2, J. F. Crundall, Humber; 3, H. Rignold, Riley.

CLASS E (two-seated cars costing up to £200).—Semi-finals: 1, J. W. Stocks, on 6-h.p. De Dion, 1 min. 40 2-5 sec.; 2, W. M. Letts, 6-h.p. Oldsmobile, 1 min. 54 3-5 sec. 1, J. A. Bennett, 6-h.p. Baby Peugeot, 1 min. 46 sec.; 2, J. S. Newton, 6½-h.p. Vulcan, 2 min. 12 1-5 sec. Final.—1, J. W. Stocks, 1 min. 34 3-5; 2, J. A. Bennett, 1 min. 55 sec.; 3, H. C. Tryon (Pick) (1 min. 58 4-5 sec.)

CLASS F (four-seated cars costing up to £400).—1, G. F. Baker, 10-h.p. Duryea (1 min. 71 5 sec., a speed of 33 miles an hour); 2, A. H. Walker, 12-h.p. Darracq (1 min. 22 1-5 sec.).

CLASS G (£400 to £550).—1, Miss Dorothy Levitt, 12-h.p. Gladiator (1 min. 4 4-5 sec.), the speed being equal to 34½ miles an hour; 2, A. Govan, 16-h.p. Argyll (1 min. 31 3-5 sec.).

CLASS H (£550 to £750).—1, L. Williamson, 16 h.p. Lanchester (59 1-5 sec.), 39 miles an hour; 2, J. T. Overton, 24-h.p. Georges Richard (1 min. 8 sec.).

CLASS J (£750 to £1,000).—1, Victor Miller, 24-h.p. Fiat, (51 4-5 sec.), speed 43 miles per hour; 2, Charles Jarrott, 24-h.p. De Dietrich (58 3-5 sec.).

CLASS K (over £1,000).—1, A. E. Macdonald, 20-h.p. Napier, (53 3-5 sec.), 41 miles per hour; 2, T. Thornycroft Vernon, 18-h.p. Mercedes (60 2-5 sec.).

CLASS M. (Lancashire Inter-Club Handicap for Cup presented by Liverpool Self-propelled Traffic Association).—1, L. Williamson, 16-h.p. Lanchester (57 3-5 sec.), 38½ miles an hour; 2, J. Whittaker, 15-h.p. C. G. V. (1 min. 5 3-5 sec.); 3, J. Bibby, junr., 24-h.p. Wolseley (1 min. 6 sec.).

CLASS N (cars under 650 kilos, 12 cwt. 3 qr. 5 lb.).—1, A. Rawlinson light Darracq (37 4-5 sec.), 59 miles an hour.

CLASS O (cars under 1,000 kilos, 19 cwt. 3 qr. 20 lbs.).—1, S. F. Edge, 45-h.p. Napier (33 1-5 sec.), 67½ miles an hour; 2, J. E. Hutton, 70-h.p. Panhard (35 sec.), 65 miles an hour.

CLASS P (for the fastest car of any type or power under 1,000 kilos. —1, J. E. Hutton, 70-h.p. Panhard (37 sec.), 60·43 miles an hour; 2, S. F. Edge, 45-h.p. Napier (38 2-5 sec.), 59 miles an hour.

CLASS Q (for the Mayor's Cup, open to cars without limit of power, weight, or type).—1, A. Fletcher, 60-h.p. Mercedes (42 1-5 sec.), 53 miles an hour; 2, J. E. Hutton, 70-h.p. Panhard (45 3-5 sec.), 48½ miles an hour.

With the conclusion of this, the official part of the programme, the course was reversed, and some matches and speed tests were run with the wind. A group of motor-cyclists made the first attempt with the following results:—

Humber Cycle	...	J. F. Crundall	...	39 3-5 sec.	...	56·43m.p.h.
Bat	...	T. Tessier	...	35 3-5 sec.	...	62·79 "
Excelsior	...	S. Wright	...	36 4-5 sec.	...	60·74 "
Humber	...	B. Yates	...	41 sec.	...	54·52 "

The matches between the cars showed some curious running, the results being as follows:—

S. F. Edge, 45-h.p. Napier, v. A. Fletcher, 60-h.p. Mercedes: Fletcher, 32 1-5 sec, 69·43 miles per hour; Edge, 34 2-5 sec., 64·98 miles per hour.

G. Higginbotham, 60-h.p. Mercedes, v. H. Austin, 36-h.p. Wolseley; Higginbotham, 32 3-5 sec., 68·57 miles per hour; Austin, 39 2-5 sec., 56·74 miles per hour.

Hon. C. S. Rolls, 70-h.p. Mors, v. A. Fletcher, 60-h.p. Mercedes: Fletcher, 32 4-5 sec., 68·15 miles per hour; Rolls, 35 4-5 sec., 62·44 miles per hour.

A. Rawlinson, light Darracq, v. J. Lisle, Star racer: Rawlinson, 36 2-5 sec., 61·41 miles per hour; Lisle, 37 2-5 sec., 59·77 miles per hour.

G. Higginbotham, 60-h.p. Mercedes, v. H. Austin, 36-h.p. Wolseley: Higginbotham, 32 4-5 sec., 68·15 miles per hour; Austin, 45 2-5 sec., 49·24 miles per hour.

Finally A. E. MacDonald drove the 45-h.p. Napier car over the course in 34 1-5 sec., or 65·36 miles per hour, and Mr. Fletcher a 40-h.p. Mors in 38 1-5 sec., or 58·52 miles per hour.

THE General Accident Assurance Corporation, Limited, has just issued a new motor proposal form which seems to be calculated on a very liberal scale. Policies are issued insuring against accidents to owners of cars, to the public, to the cars themselves, or in cases of burglary, theft, or larceny, as well as fire and explosion. Mr. A. Nixon is the manager of the motor department of the company's operations.

A MOTOR-CAR accident has occurred, near Clonmel, to Lady Oranmore and Miss Morley, of Portlaw. They were on their way from Bestborough to Limerick, Miss Morley driving, and had passed through Clonmel, when the car skidded on the wet road, ran into a ditch, and turned right over. Lady Oranmore was thrown out and Miss Morley was caught under the vehicle. Both ladies suffered considerable shock.

ON Tuesday of last week the French motor-cyclist, Fossier, went record hunting on a Werner machine on the Parc des Princes track, in Paris. The first attempt was spoiled by a broken plug, a second one by belt troubles, but in a third trial he set up new figures for 10 kilometres with flying start, covering the distance in 6 min. 25 4-5 sec. The fastest kilometre was made in 37 sec., equal to about 60 miles per hour.

MR. A. H. HUNT, the English representative of Messrs. Geoffroy and Delore, of Clichy-la-Garenne, France, has sent us a sample card of "Automobile Flexibles" or ignition wires for petrol motor-cars, of which he is making a speciality. The card includes several wires for the primary and no less than seven different sizes of high-tension or secondary wire. The latter are insulated by rubber, the conductors being of ample capacity.

AT Clerkenwell Sessions, a Frenchman, who gave the name of Charles J. Francois, aged 43, and described as a consulting engineer, was charged, upon indictment, with having obtained, by means of false pretences, a motor-car, valued at £180, from Mr. O. C. Selbach, motor-car dealer, of 66 and 66a, Great Russell Street, Bloomsbury. After hearing evidence, Mr. W. R. McConnell, K.C., sentenced the accused to eighteen months' imprisonment.

A MOTOR-VEHICLE supplied by Messrs. T. Coulthard and Company, Ltd., to the Mersey Dock and Harbour Board, recently took with a trailing vehicle along the Mersey Docks a weight of 14 tons 4 cwt., this being 50 per cent. more than the makers recommend customers to put upon the vehicles even with trailers. The weight was investigated by Mr. Lyster's assistant, and there was no doubt about this being the correct weight taken by the motor and trailer.

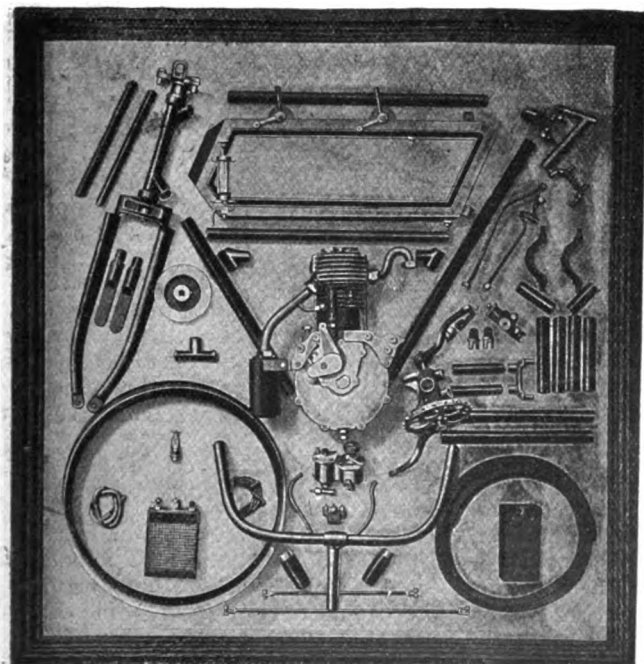
MOTOR-CYCLING NEWS.

"THE Motor-Bicycle: How to get the most out of it," is the title of a well-got-up pamphlet which has just been issued by the Ariel Cycle Company, Limited. Besides describing Ariel motor-bicycles, the booklet contains useful hints, in addition to which the various parts of a motor-bicycle, such as the engine, carburettor, etc., are not only described but are illustrated by clearly-drawn sectional views.

THE Manchester Motor Cycle Club has just been organised, with Mr. J. H. Baynes as first president. The annual subscription has been fixed at 10s. 6d.; this including a badge for each member. The Trafford Arms Hotel, Old Trafford, on the main road leading into Cheshire, has been appointed headquarters of the club.

At a Sub-Committee meeting of the Auto-Cycle Club to discuss the question of racing standards for 1904, it was considered desirable to obtain the views of the manufacturers before making any definite standards. The following proposals have been made for engines for track racing only, and the Committee consider that high powered engines should be excluded on the ground of safety, as it is found that existing tracks are not safe enough for the very high powered engines that have been in use during the past season. The Committee have agreed generally to abandon classification by weight limit, and propose:—1. That there shall be but one class—engines to have a maximum cylinder capacity of say 76 by 76; or, 2. That there be two classes, one for engines not exceeding 70 by 70, and the other for engines not exceeding 80 by 80. Observations on these points will be welcomed by Mr. F. Straight, the secretary of the Club.

To meet the demands of small cycle makers who wish to build up their own motor-cycles, Messrs. Brown Bros., Limited, have just brought out a set of fittings for a 2½-h.p. belt-driven motor-bicycle. The parts supplied are depicted in the accompanying illustration, and comprise all the necessary tubes and components for the bicycle parts of the machine, a 2½-h.p. vertical motor (74 mm. bore, 76 mm. stroke) with "make and break" contact breaker, exhaust valve lifter, silencer, Longuemare carburettor with throttle, belt rim,

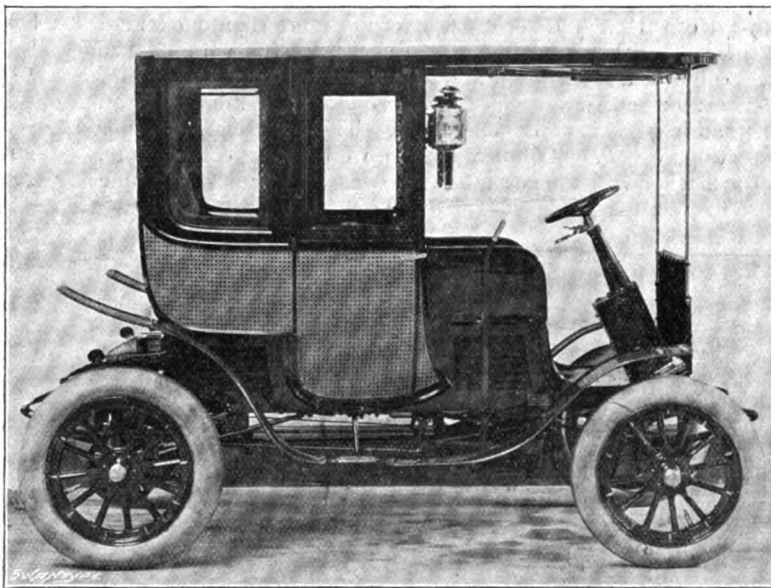


7ft. 6in. "Duco" V-shaped three ply leather belting, tank, coil, 18 ampere-hour accumulator, switch handles, ignition wires,

interrupter, sparking plug, etc. In fact, the set is complete even to every tube, clip, and other small parts so awkward to make, leaving only the wheels to be built by the cycle maker.

THE CITY AND SUBURBAN DOCTOR'S ELECTRICAL BROUGHAM.

ONE of the latest productions of the City and Suburban Electric Carriage Company is the electrical brougham for the use of medical men illustrated herewith. The vehicle has inside accommodation for two persons and for one beside the driver, whose seat is on a level with that of the inside



The City and Suburban Miniature Electric Brougham.

passengers. The mechanical arrangement differs from the City and Suburban carriages in several points. In the first place, it is propelled by a single motor of 5-h.p. instead of by a pair, the rear axle being driven direct from the motor spindle through single reduction spur gearing. The battery consists of 42 cells of 100 ampere-hour capacity, divided into two groups, one being placed beneath the driver's seat in front and the other under the passengers' seats behind the body of the carriage. On level good-surface roads the carriage will run upwards of thirty-five miles on a single charge at top speed. The dense shadow seen in the illustration beneath the body of the carriage is not due to the employment of an underslung battery or straight chassis, but is merely an effect of light and shade which might have been removed by the engraver. As will be seen, steering is effected by means of a wheel mounted on an inclined pillar, on which is mounted the controller. The latter is arranged to give four forward and two reverse speeds, the maximum speed ahead being approximately sixteen miles an hour. Another feature of the miniature brougham—the name given to the new vehicle—is the roof extension, the driver being protected in great measure from rain by a glass panel, hinged at the top, which can be let down in front. In the illustration the panel is shown raised and secured to the under side of the canopy. The road wheels are fitted with Collier pneumatic tyres, and as the car has a long wheel base, and extra long and flexible springs are employed, the riding is particularly easy.

THE other day the Pioneer Company's motor-car was conveying a party from Beccles to Lowestoft, when on passing North Cove a cottage was seen to be on fire. Mr. H. Bateman, sen., the driver, promptly turned his car round, and ran back 3½ miles to Beccles, to give the alarm. This was the first intimation that had been received of the outbreak.

CONTINENTAL NOTES.

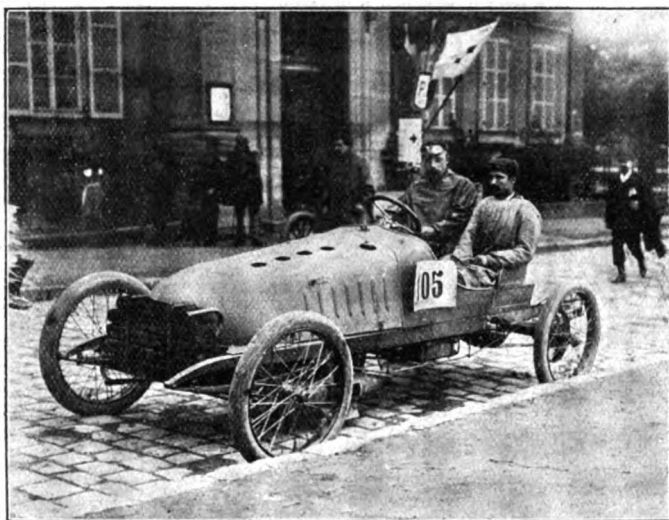
THE hill-climbing trial at Chateau-Thierry began on Sunday at two o'clock. The weather all the morning had been most threatening, and indeed the night before it left the road drenched and muddy; but the dry, strong wind soon dried up the mud, and brought the road into fair condition, so that the competition could begin promptly. The weighing-in had taken place the afternoon before at the sugar refinery of MM. Benedic and Thorailier, under the control of Messrs. Longuemare and Lepretre, and upwards of fifty cars had presented themselves for this formality. The competition was for the best time for a kilometre uphill with a standing start.

THE races for tourists took place first, and began with motor-cycles with a cylinder capacity of not more than one-fourth of a litre. In this class Peugeot was successful, winning the first, second, and third places, and doing the distance in 1 min. 11 2-5 sec., or an average speed of more than fifty kilometres an hour, that is to say, thirty-one miles. The next class was for cars costing less than 4,000 fr. There were three competitors, and Davaux on a Prosper Lambert car was the winner, the time

1 4-5 sec. There were altogether twelve competitors in this class, but two of the riders had to be pushed at the start and therefore lost their right to classification. The voiturettes of less than 400 kilos were next, and the first and second places fell to Darracq, Wagner doing the distance in 50 4-5 sec., and Villemain in 52 3-5 sec.

AFTER the voiturette competition had been completed, it began to rain and presently came down in torrents, so heavily that it was found necessary to suspend the meeting, and the spectators and organisers waited vainly for the rain to pass off and the road to become practicable. At last it was decided to give up the competition for the day and to run it off early on the following morning. The Sunday's meeting passed off without the slightest accident or hitch, and the road was kept quite clear of spectators, who, although they came in their thousands to witness the race, seemed quite content to keep inside the wire barrier which protected the edge of the pavement.

THE Chateau-Thierry meeting was concluded in fine weather on Monday morning. Danjean, on a Georges Richard, won the light-car class in 50 1-5 sec., Brazier, on a similar vehicle,



Rasson on the "X" Racer.



The Georges Richard Light Racer.

THE CHATEAU-THIERRY HILL CLIMB.

being 3 min. 6 1-5 sec. In the next class for cars of a price of 4,000 fr. to 8,000 fr., Renault was the winner on a 10-h.p. Peugeot in 2 min. 25 2-5 sec. In the class for cars between 8,000 fr. to 12,000 fr., Pelzer on a Gardner-Serpollet beat the other two competitors, and did the distance in 1 min. 15 2-5 sec. In the class for cars between 12,000 fr. to 18,000 fr. there were seven competitors, and Beconnais on a Darracq was the winner in 56 2-5 sec., whilst the second place was taken by De Maigret on a Gobron-Brillié in 1 min. 20 4-5 sec. There were two cars between the prices of 18,000 fr. to 25,000 fr., and Caillois on a new car, which for the time being is designated by the letter X, was the winner in 1 min. 32 1-5 sec. The class for cars of a value of more than 25,000 fr. was a battle between Gabriel on a Paris-Madrid Mors, and Heath on the Panhard that was steered by René de Knyff in the Gordon Bennett race. Gabriel was the winner in 56 2-5 sec., Heath's time being 1 min. 3 2-5 sec. Some trials to break the record were made, but were not successful. This ended the tourists' class.

IN the competition for racing vehicles, motor-cycles had the first innings, and Lamberjack on a Griffon took the first place in 55 3-5 sec. He also took the second place on another Griffon in 1 min. 1 1-5 sec., Berger being third on a Moto-Cardan in 1 min.

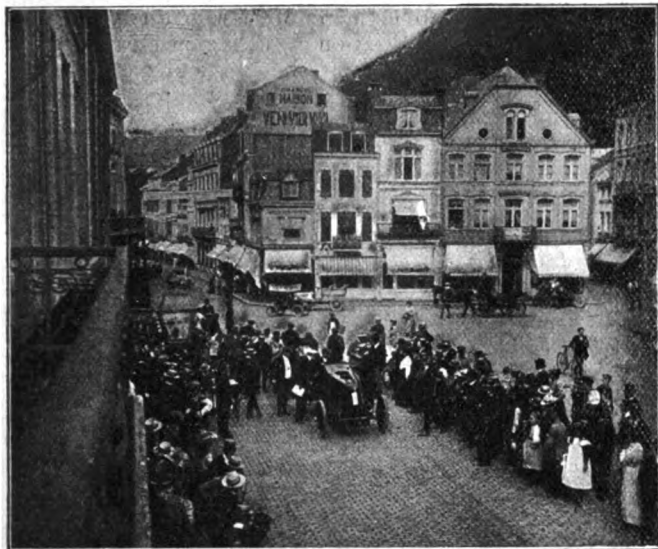
being second in 52 4-5 sec. The racing-car class proved a victory for Rigolly on the Gobron-Brillié (time, 45 1-5 sec.). Duray, on a similar car, was only 3-5 sec. slower. In the general classification Gabriel heads the touring section with 56 2-5 sec., and Rigolly the racing category with 45 1-5 sec.

"Le Monde Sportif," which is taking an active part in the organisation of automobile competitions, now proposes to hold a Criterium de Régularité, on the lines of the Reliability Trials just held in England. It is proposed that it shall be held from November 30th to December 5th, under the direction of M. Forestier, the Chairman of the Technical Committee of the A.C.F.

THE Paris Motor Car Exhibition is in serious difficulties. The organisers are overwhelmed with entries. I ran across M. Rives, the chief organiser, the other day, and learned from him that it had been found necessary to further reduce the spaces to be allotted to the manufacturers in the central nave. Not only had it been found necessary to make this reduction, which will bring down the largest stand to an area of 65 square metres, but even then the great nave will not hold all the manufacturers, and many will have to be content with stands elsewhere. M. Rives is a most popular

man, and everybody likes him, but this time his task is impossible. He cannot please everybody, and he feels it very much; for, whatever decision he comes to, somebody will be sure to be dissatisfied.

THE tonneau and limousine bodies have lived their day. They are decidedly going out of fashion. On every side I hear



The Recent Race Meeting at Spa. Baron de Crawhez starting on his Mors.

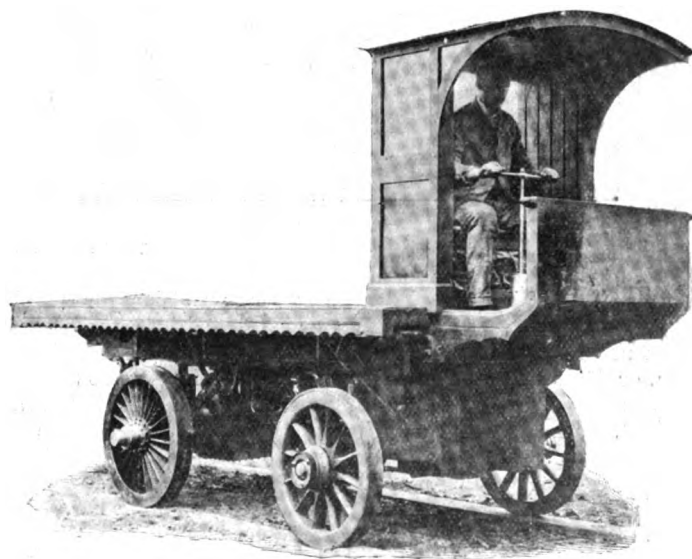
of longer chassis, and longer wheel base, in order to permit the entrance to the back part of the car to be put at the side. The tonneau was made for ladies and is nearly always occupied by ladies, and naturally they object to have to get out in the mud at the back of the car, as they have at present.

THE bonnet competition, to which I referred last week, has brought upwards of 200 designs, the greater part of which are too fantastic to bring them within the range of possibility. It has been found by the jury very difficult to make a choice amongst the practicable designs. They have therefore decided to build examples of some of the best, and exhibit them at the Paris Salon, and make their choice after having seen them executed.

THE GERMAN AUTOMOBILE CLUB have decided to call an international conference of all the automobile clubs of the world on the subject of speed; whether it should be limited, and, if so, what limit should be given to it. The origin of this conference is to be found in Dr. Max Levin-Stoelting, who is an assistant judge in Berlin, and president of the racing committee of the German Club, and who seems to become terrified by the speed which automobiles have attained. Of the six great international clubs, that is to say, English, French, German, Belgian, American, and Austrian, the German Club is without any doubt the least capable of giving judgment about speed, for the simple reason that there are less touring automobiles in Germany, perhaps, than in any of the other countries mentioned, and certainly less competitions for speed either on the level or uphill. It is therefore in the eternal fitness of things that the German Club should identify itself with calling a halt, and it is to be hoped that the other clubs will have the good sense to stifle such an attempt to stop progress; for, whatever may be the speed limit which is safe and which should not be exceeded for touring, it cannot be denied that the speed competitions of the past have gradually built up the best automobile touring car of to-day. To take one instance out of a hundred which I could mention: Had it not been for the great road races, the pneumatic tyre of to-day would not have been so perfect, for it was in making efforts to win the races that the great manufacturers of tyres found the improvements which they now add to every touring tyre.

THE "SCOTT" STEAM WAGON.

THE accompanying illustration shows a new steam wagon designed and built by Mr. G. D. Scott, of the Castle Works, Duffield, near Derby. It is designed to carry a load of about two tons at speeds varying from eight to ten miles per hour, the weight of the vehicle being about two tons. There are a number of special features in the design of the vehicle with which we hope to deal in a later issue. In the meantime we may mention that the boiler (a wet one) is of simple construction, being merely a plain cylinder with a removable cover, and fitted with concentric rings of Field tubes with a common petroleum lamp in the middle. These tubes are covered with radiators, which greatly increase their efficiency. The boiler cover can be quickly removed for examination and cleaning, when every part is visible and accessible. Heavy petroleum is the fuel used, the burner being regulated automatically. The engines, valve gear, and equalising gear are all enclosed in an oil-tight casing, and lubricated from one oil bath. This casing forms the driving axle of the vehicle and is termed a motor axle. The latter is provided with extended sleeves or hollow spindles carrying the driving wheels, which are mounted loose thereon, and lubricated from the oil bath above referred to. By this means a large wearing surface is secured, and all dust is excluded. The wheels are driven by a square shaft, which fits loosely into a square hole in the dust cap, so that the wear which takes place on the under side of this sleeve does not affect the alignment of the gearing, and both crank and counter-shaft are entirely relieved from pressure. The crank shaft and the reducing gear are concentric with the driving wheels. The equalising gear is an entirely new design on a totally different principle to that which is in general use, and is so arranged that the power is not transmitted through it, but direct from the engines to the driving wheels. The equalising gear itself does not move at all on a straight road, and only very slightly when turning a corner. The motor axle is entirely independent of the frame of the vehicle, and can be readily detached by disconnecting the springs and pipes, or the engines and gearing can be removed from the axle without detaching the latter from the car. This independence opens out the way for the introduction of an entirely new system of heavy traction, whereby either one or both axles of a



trailer can be fitted with motor axles, and supplied with steam from the boiler in the leading vehicle, thus virtually making the leader and trailer into a locomotive with four or six coupled wheels. Mr. Scott is also building three and five-ton vehicles on his system, and has granted a manufacturing licence to an engineering firm in Derby, so that more of them is likely to be heard in the near future.

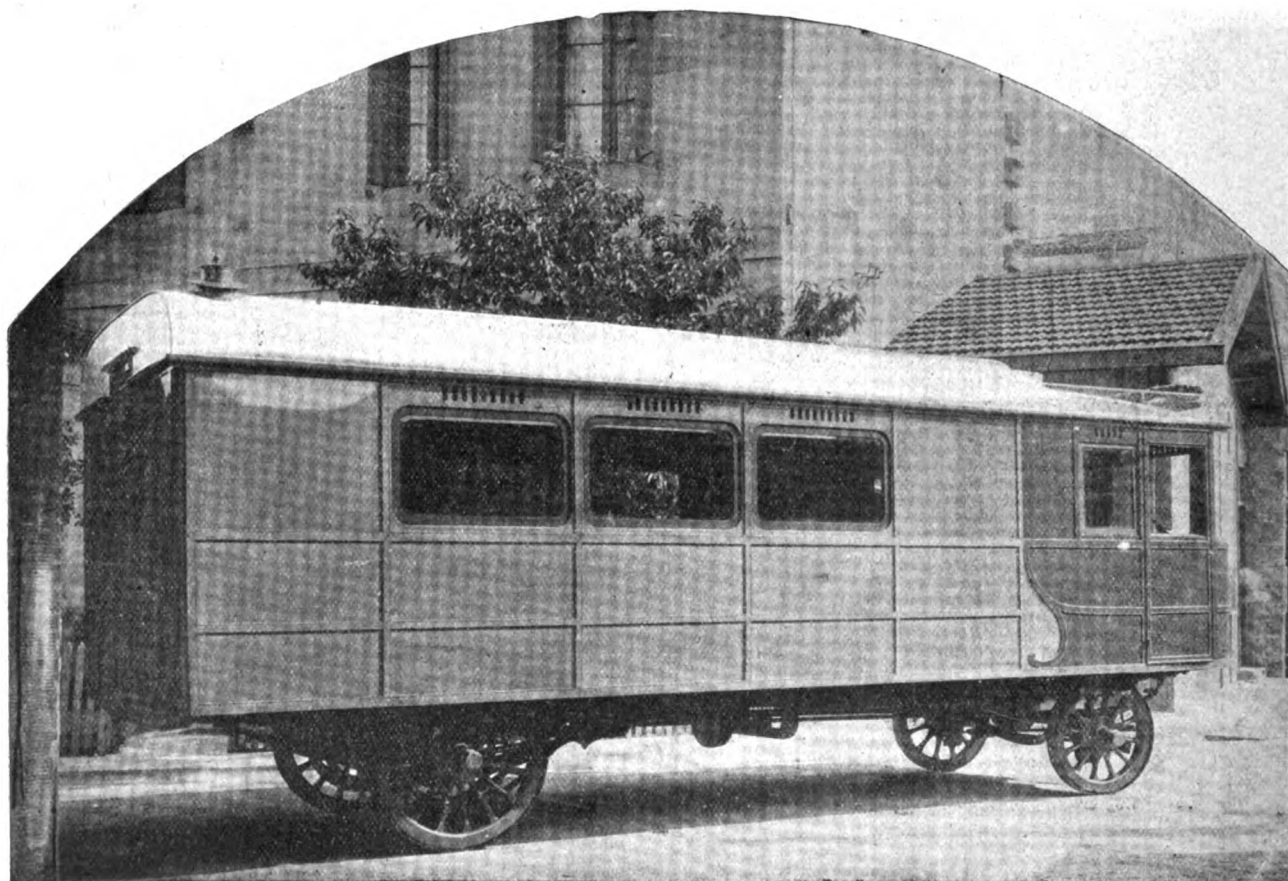
A MOTOR CARAVAN.

THERE have been many proposals to construct a motor caravan, but it has remained for M. Jules Secrestat, a member of the Bordeaux Automobile Club, to carry the idea into practice, this gentleman having recently had the novel vehicle illustrated herewith constructed to his order with the view of touring at leisure in the valley of the Loire. The car, which has been named "La Bourlinguette," in appearance is somewhat on the lines of a self-propelled railway coach, the interior being furnished in the most luxurious and unique style as a travelling caravan. The vehicle is fitted with a 20-h.p. Panhard motor, and with a change gear capable of giving speeds of 6, 12, 22, and 30 kiloms. per hour. The dimensions of the caravan are: length, 23ft., width 8½ft., and height 6½ft. The total weight,

STANDARDISATION OF RACING CARS.

WRITING to an American contemporary, Mr. J. A. Kingman remarks that automobile racing has done much to develop and improve the automobile. "As a protagonist of racing I want to see racing continued, but firmly believe that if racing cars continue to be built with no restriction beyond that of weight no good can result. It is my opinion, and the opinion of many with whom I have talked, that a reasonable standardisation of racing machines will give the designer a fine opportunity to show his skill; that racing as a sport will be greatly benefited; and, most important of all, the motor-car will be developed along rational lines."

Mr. Kingman is desirous of starting a discussion on the matter, and proposes the following tentative set of rules:—1. This



The Motor Caravan "La Bourlinguette."

[Le Routier.]

including five passengers and all necessary provisions for travelling, is about 3½ tons. The interior is divided into three compartments, the centre one serving as the drawing room, dining room, or bedroom. Great ingenuity has been employed in the way of economising space. Four beds can be made up in the car at night, and during the day-time the seats and tables are so arranged that if necessary dinner for eight can be served without the smallest inconvenience. The tables are really lavatories in disguise, and are almost instantly convertible from one use to the other. They can be used as separate tables or be quickly joined up to make one long one. The kitchen arrangements are at the end of the car, the "cab" in front for the driver being entirely closed off from the other part of the vehicle. Owing to the weight, pneumatic tyres have been dispensed with, but a special system of suspension has, states "La France Automobile," in a large measure compensated for the necessity of having to use iron tyres.

weight of the racing vehicle complete shall not exceed 1,000 kilos. 2. If it be desired to divide racing vehicles into classes, the classification shall be solely by weight. In all classes, however, there shall be a certain fixed ratio between the total volume of cylinder capacity and the weight of the complete car, assuming, of course, that the cylinders are single acting. 3. There shall be a certain ratio between the weight of the chassis and the weight of the complete racing vehicle. As racing machines are built at present the chassis and the vehicle ready for the road are practically one and the same thing.

We shall be glad to have the opinions of our readers on Mr. Kingman's proposals.

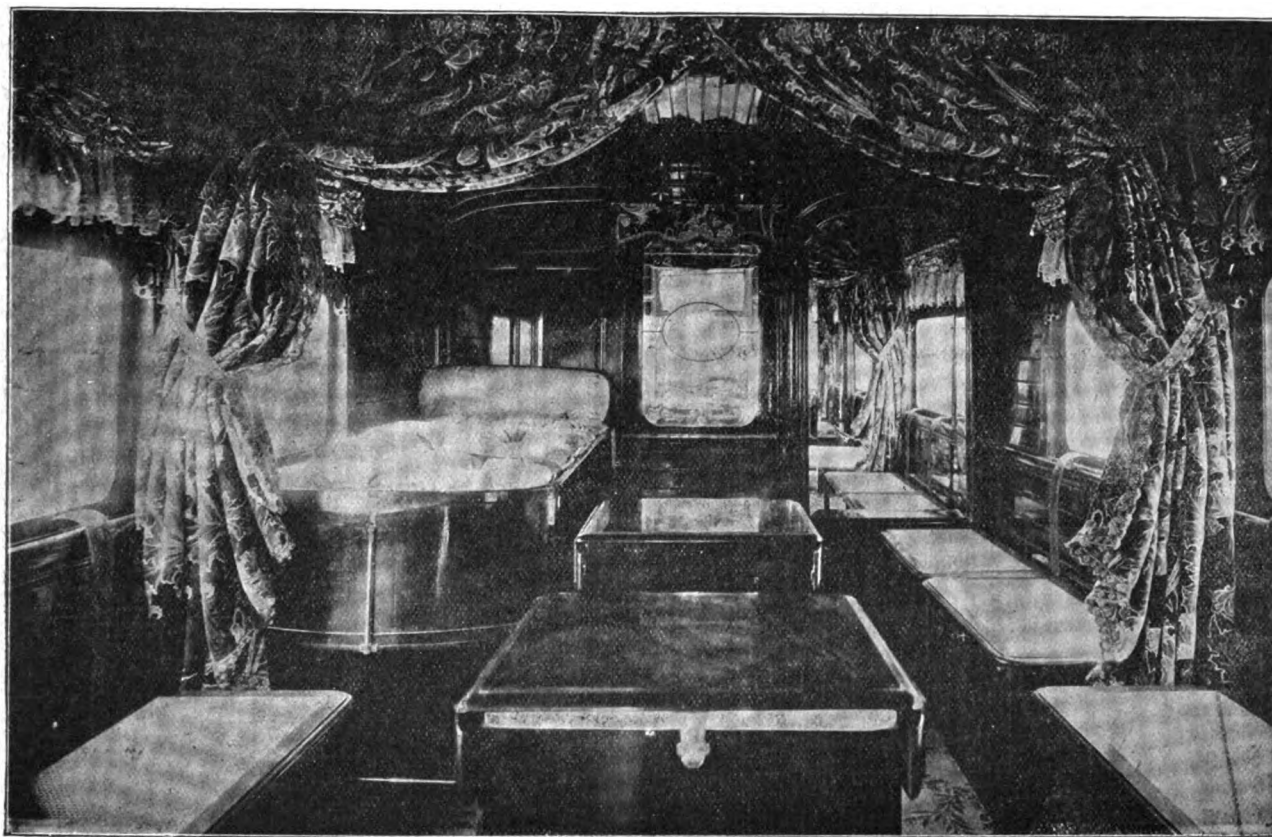
THE Coventry road through Barnet is in a deplorable condition; owing to the trams that are being laid down *via* Finchley, quite a mile of the road is "up."

SOME USEFUL NOTES.

THERE are unfortunately many motorists who think that their car is all right till it breaks down or stops, and then they sit down and wonder how it came to happen so suddenly and without warning. The efficient driver, however, endeavours to prevent troubles, rather than wait till they overtake him, as likely as not out in the country miles from any place where he can procure the tools or assistance necessary for a remedy. Do not make the mistake of thinking that it is necessary, with a good machine, to be always worrying about accidents that may never happen; but the prudent motorist will keep a vehicle in correct adjustment all the time, to do which he realizes that a thorough knowledge of all parts of the machine is necessary in order that he may give it the required attention, with a minimum expenditure of time and energy. One of the things about a petrol motor which causes considerable trouble to the novice and the experienced automobilist alike is the compression. Compression

where only one alone would have had no material effect. In any event, the feeding of too much lubricating oil, or too much gas, results in a deposit of carbon in the cylinder. If too much fuel is fed, this deposit is due to the imperfect combustion which takes place, producing among other things a smoky exhaust. If over-lubrication is the cause, the excess oil gradually works into the combustion chamber, and is burned by the intense heat of explosion. A poor grade of lubricating oil cannot stand the excessive heat and burns. Not only does this carbon deposit on the sparking points, but it mixes with the lubricating oil, forming a sticky, gummy oil, which collects in the piston grooves. When the motor cools this becomes all the more gummy, and it binds the piston rings in their grooves, preventing them from springing out and making a tight connection with the cylinder.

THE remedy for such a condition of affairs is, of course, to throttle the mixture to the proper point, reduce the quantity of lubricating oil fed, or to secure a proper quality of lubricat-



Interior of Motor Caravan. (See page 620)

is, in some respects, so elusive and intangible that it slips away, here and there, and the automobilist may have a hard time restraining it. But if compression is intangible, the parts of the motor which are expected to produce it are not, and these, remarks the "Automobile Magazine," may be examined, tested and adjusted with comparatively little difficulty, unless the motor is badly worn.

A PRIME essential for good compression is a set of piston rings, which expand nicely in the cylinder, and form a good, airtight joint between the piston and cylinder. When considerable wear occurs in the cylinder, on the piston or the rings, the compression is not good and new parts may be required. In some cases, however, the difficulty may be due to a very simple error on the part of the motorist—that of furnishing too much lubricating oil, or a poor grade of oil, to the cylinder. In case the carburettor is not throttled properly and gives the motor too much mixture the same result may be produced, or the three causes may exist together and thereby increase the difficulty or cause it

ing oil, depending, naturally, on which cause is responsible for the difficulty. In any event the piston should be taken out of the cylinder as soon as possible, and the rings loosened by an application of petrol or kerosene. After cleaning the rings, grooves, piston and cylinder of all deposits, the motor may be put together again, and the compression will be found to be all right, providing the difficulty was not due to some other cause than the piston rings being gummed and stuck in their grooves.

IN making repairs to parts of the motor always examine carefully to see that the exact sizes are duplicated, and the cams, etc., are set at exactly the same point as when the engine came from the makers. It is a good plan to mark the gear teeth before disconnecting the parts; you can then readily replace them in the correct position.

MR. C. W. S. CRAWLEY will read a paper on "Limitation of Cylinder Capacity" at the Automobile Club on Nov. 12th.

THE USE OF OIL IN ROAD IMPROVEMENT.*

BY JAMES W. ABBOTT.

PUBLIC attention was first called to the utility of crude petroleum oil in road improvement through experiments made by the county of Los Angeles, in California, in 1898, where six miles of road were oiled in that year under the direction of the supervisors. The sole purpose of this work was to lay the dust, which, churned beneath the wheels of yearly increasing travel during the long dry seasons in that region, had become a most serious nuisance. The following year this mileage was a little more than doubled in that county, and other counties in California also began experiments along the same line.

From the very first the results obtained were so astonishingly successful that the practice rapidly increased. It spread through every county in Southern California, and then began to work north. Now, after five seasons, it has extended from near the Mexican line, on the south, to Durham, in Butte County, on the north, a stretch covering sections of quite widely differing climatic conditions, with an aggregate of about 750 miles of county roads and city streets oiled for one or more years. The practice has now passed the experimental stage. More than twenty-five counties in California have already adopted it, and others are preparing to do so.

As already stated, the original motive for the use of crude oil on roads was to lay the dust. Wherever oil has been tried this purpose has invariably been accomplished, regardless of methods adopted or variety of oil used. On all kinds of roads where it has been applied the dust has ceased absolutely for at least an entire season after its application, and, if renewed a second year, has been abated for that year also and the following, whether then treated or not. In Southern California all unite in saying that the great bane of life—dust—passed away wherever the first application of oil was made. The dust raised by passing travel no longer comes in at windows or destroys the products of field and orchard for considerable widths on each side of the road, as it formerly did. The report of its effectiveness as a dust layer is equally positive and enthusiastic from all sections which have made the experiments.

In California it was soon learned that, incalculably valuable as it was, the laying of dust was not the only or even the most extraordinary result obtained. It was found that when the oil was applied it immediately began to bind together all the loose particles constituting the road surface, whether clay, sandy loam, loose sand, gravel, or the fine material on the top of macadam. A tough stratum formed, resembling an asphalt pavement. Roads built on drifting sand or clayey dust, no matter how deep, where trotting with a horse and trap was impossible and for a pair of strong horses to pull a ton was a very laborious process, became indurated, resilient, and firm, so that driving teams could trot with ease and the same pair of horses pull two and one-half tons more comfortably than they formerly did the one ton. Of course, these results were not fully obtained immediately, but they never failed to follow persistent treatment with oil. At first, while this oiled surface stratum was thin, it was often broken through, especially in wet weather, but proper repairs and subsequent applications of oil thickened and strengthened it until it would at all times effectually withstand the heaviest and most continuous travel.

When they first began to use oil on roads in California there was much speculation as to whether it would not be found objectionable; but when properly applied, and suitable precautions were taken not to use the road before it was ready, the theoretical objections vanished. When oil was placed upon the surface of the road, if vehicles were allowed to run over it before it had sunk in and become thoroughly incorporated with the road material, the wheels picked up the oil and threw it in all directions, injuring clothing and everything else of a delicate nature

upon which it fell. After experience had taught how to avoid this, no further serious difficulties manifested themselves.

There does not appear to be such a thing as dust from an oiled road. Of course, dust from outside may blow on to an oiled road, but this soon adheres to the oiled surfaces and ceases to rise.

The mud from oil-treated roads, after the oil has become thoroughly diffused through the material, does not appear to be more objectionable than ordinary mud.

Diligent inquiries about the effect of oiled roads on rubber tyres failed to disclose any complaints, except in cases where the tire had come in direct contact with the oil. So far from being injurious, the claim is made by some that the resiliency of an oiled road surface and the protection against the sharp edges of sand and gravel increase the life of rubber tires very materially. It has not been uncommon for asphalt pavements in cities to become softened by the heat of the sun to such a degree as to be injured by the wheels of heavily-loaded wagons. No difficulty of this character is ever experienced with the surface of an oiled road. For a short time after oil is applied there is a very perceptible odour, which soon disappears almost entirely. While it lasts it is not essentially disagreeable, and many people rather like it. An incidental advantage of oil on roads is the help to the eyes. The reflection of the sun from white road surfaces and the dust blown into the eyes are both very trying. Oiling gives the road a seal brown colour.

The growth of oil in popular favour in Southern California has been steady and rapid. Many of those who have had experience with it have come to regard its use in a dry region as the most important discovery ever made in road making. Quite a considerable number of people have said to the writer, "We could not go back to the old conditions; if we had to give up our oiled roads we would move away."

All petroleum will lay dust, but asphalt is required to bind together the loose particles of a road surface. As soon as petroleum is put on a road all the lighter hydro-carbons which it contains begin to evaporate whenever the temperature is reached at which they vapourize. After a time nothing but the heavier ones remain.

From the very beginning of the use of crude oil for roads in California it seems to have been understood that it was the asphalt in the oil which acted as the binder, and consequently they have always sought very heavy oils for that purpose.

Instead of crude oil, asphalt residuums, from which the lighter products have been distilled, have been much used on roads in California, but no observations have been made to determine whether the results have been more satisfactory in proportion to the amounts used. In the few experiments made with oils on roads in the United States outside of California and Texas a residuum from paraffin crude oils has generally been used of about 26° B. While these experiments have always been successful in laying dust, they have not been followed up with sufficient persistency to demonstrate any efficacy of this material as a road maker. It is known that many of the hydrocarbons will under certain conditions form a chemical union with oxygen and nitrogen, producing a small percentage of asphalt. It is possible that if roads were repeatedly sprinkled with any crude oil it might be found in time that the oxygen and nitrogen of the atmosphere had united with them and produced some asphalt of enduring value to the road.

Without precedent anywhere for a guide, naturally the first experiments were tentative and differed in method according to the theories and ingenuity of those entrusted with their execution. For a time it was quite strenuously argued by many that it was the better practice to apply the oil to a road surface while it was moist like an orchard soil when it works well. It was contended that the water and the lighter oils evaporating together would effect a more desirable result than could be secured without water. This view is now unanimously rejected by all experts in road oiling. While all agree in advocating liberal sprinkling in preparing the road surface, the aim is to let the water all evaporate before the oil is applied.

(To be continued.)

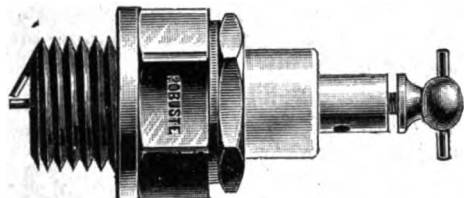
* Extracts from the Year Book of the United States Department of Agriculture for 1902.

HERE AND THERE.

DIVIDEND warrants have been issued by the Motor Manufacturing Co., Limited.

THE Herefordshire Automobile Club is holding a motor-cycle hill-climbing contest on Callow Hill to-day (Friday).

HEREWITH we illustrate the new "Begbie-Oleo" sparking plug which has lately been put on the market by the Begbie Manufacturing Company, Limited. The plug, which is now being fitted on all Aster engines and adopted by several of the leading French motor-car builders, is claimed to possess a number



of advantages. As will be seen, the plug is very short, measuring $2\frac{3}{4}$ in. over all; the porcelain is very thick, and, being of the best quality, is stated to be practically unbreakable. Furthermore, the shape of the interior of the porcelain prevents the plug from fouling.

THE Sheffield and District Automobile Club will hold a run to Sickleholme to-day (Saturday).

JENATZY is expected to take part in the track races which are to be held in Berlin by the German Automobile Club on the 18th inst.

It is reported that Messrs. Panhard and Levassor are about to establish works in the United States for the repair of Panhard cars, of which a large number are used by American motorists.

THE Dundee Harbour Trust has been considering a proposal that they should give ground for the erection of a petrol store. It was decided to recommend that a site should be given at the east end of the harbour.

THE Brighton papers have lately been full of cases of untended horses indulging in sprinting matches at their own sweet will, smashing the vehicles to which they were attached, scattering pedestrians, and alarming shopkeepers.

MESSRS. H. JOHNSON AND CO., LIMITED, has been registered with a capital of £5,000 to adopt an agreement with Messrs. H. Johnson and Co. for the acquisition of the business carried on by them at Harrogate, and to carry on the trade of automobile engineers.

At the Eastern Ainsty Petty Sessions at York Castle, the Chairman, Mr. W. B. Richardson, referring to the impending removal on promotion of Superintendent Knight from Tadcaster to Leeds, expressed satisfaction with the way in which he had discharged his duties. Drivers of motor-cars, he added, would rejoice at the departure of Superintendent Knight.

At a meeting of the Council of the Lancashire Farmers Association at Preston, the following resolution was adopted:—"That the injury to the roads caused by heavy pleasure traffic and motor-wagons is creating a serious additional charge on the local roads, and it is desirable that measures be taken by the proper authorities to deal with this matter." It was decided to send this resolution to the Main Roads and Bridges Committee of Lancashire and various district councils.

MESSRS. DE DION-BOUTON, LIMITED, have just issued an interesting catalogue showing some industrial applications of the De Dion petrol motor, among these being a small house electric lighting plant, a portable electric lighting set, a belt-pulley motor combination for machine-tool driving purposes, and a combined engine and pump. In France an increasing use is being made of petrol motors where a small amount of power is required in a portable and convenient form, and we recommend the new combinations to motor-car repairers.

THE Leon Bollée Motor Syndicate, Limited, has been registered with a capital of £10,000.

SIR JOHN DICKSON POYNTER, M.P., has sold his Wolseley car through the Motor Mart, Limited.

OWING to his leaving Vienna, Count Carl Schonborn is resigning the presidency of the Austrian Automobile Club.

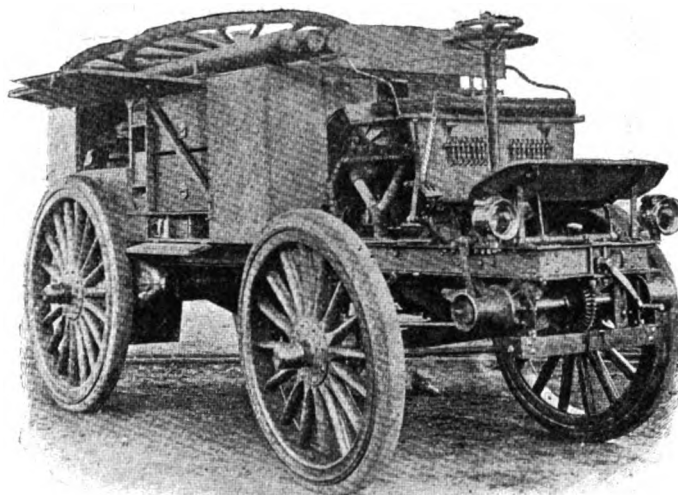
MOTORISTS in the Cardiff district will be interested in learning that the electric light department of the borough is prepared to undertake accumulator charging.

It has been held by Judge Emden in the Lambeth County Court that the possession of a motor-car is not evidence of a debtor's means, though it might be of his extravagance.

THE Rev. A. C. Oliver, of Barlaston, Stoke-on-Trent, an ardent motorist, has recently completed a tour on his 6-h.p. De Dion over Shap Fells, and to the borders of Scotland, returning via Lake District and Blackpool.

FROM Boston to New York in an electric automobile is a feat soon to be undertaken by Mr. F. A. Babcock, of Buffalo, who is building a special car for the purpose. The distance is 235 miles and the through trip has never been made by an electric vehicle, but Mr. Babcock is confident that it can be done.

AN interesting motor-vehicle has just been completed by the United States Long Distance Automobile Co., of Jersey City, for the U.S. War Department. The vehicle, which is intended to be used as an automobile repair shop to accompany light artillery, cavalry, and infantry in field service, is elaborately equipped with machinery and tools and stocked with materials for repairing on the spot breakages and injuries to field guns and army wagons, to re-shoe the horses and mend the harness and saddles, and to do emergency carpentry work. The box-like body has doors on both sides and at the rear which rise on hinges, giving access to the interior. In one side there is a small lathe for turning metal. This is driven by a small single-cylinder petrol motor carried by the side member of the steel angle-iron main frame of the vehicle below the lathe. In the



opposite side of the body are a series of drawers and compartments for the storage of tools and materials of all sorts, and in the rear there is a small blacksmith's forge and anvil. The auxiliary motor which drives the lathe also turns a grindstone and a dynamo. At the front of the vehicle, suspended below the steel frame, is a double windlass, which is turned by the motor, and by which the wagon can, if necessary, pull itself out of a hole. A pair of extra artillery wheels and a number of heavy poles are carried on the "roof." The vehicle itself is $12\frac{1}{2}$ feet long, and, stripped of its equipment, weighs $3\frac{1}{2}$ tons. Motive power is furnished by a 24-h.p. four-cylinder vertical petrol engine mounted just below and to the rear of the driver's seat. The maximum speed of the vehicle on good roads is ten miles an hour.

THE Car and General Insurance Corporation, Limited, has been registered with a capital of £100,000.

DIVIDEND warrants on the 6 per cent. preference shares in Brown Bros., Limited, have been posted.

ONE of our readers, Mr. W. Simons, has been kind enough to send us the photo reproduced herewith, and which was taken on the Southsea run of the 1,000 miles Reliability Trials. The driver of the 10-h.p. Hallamshire car, No. 43, not wishing to



wait to give warning of the police trap to the next vehicle, which was some considerable distance behind, a happy thought struck one of the party to write the warning across the road, which was done in French chalk. The spot was about two miles the other side of Liphook.

A LEADING Durham firm of flour millers, who have adopted the motor-vehicle in connection with their business, inform us that the comparison in cost between that system and horse-drawn vehicles shows a gain of 25 per cent.

CONSTERNATION reigns in motoring circles in Lubeck, Germany, where the municipal authorities have issued a regulation that the speed of motor-cars in the town must not exceed five kilometres (about three miles) per hour.

THE following French makers have made application for space at the St. Louis Exhibition:—Darracq, Jeantaud, Mors, Gardner-Serpollet, Renault, Panhard-Levassor, de Dietrich, Clement, Fouillaron, Michelin, Turgan-Foy, Pozzy-Potron, Georges Richard, Aster, and Cottereau.

MR. W. HARDMAN, of Langley Park, Sutton, has recently returned from an enjoyable and successful tour on his 15-h.p. Mors, having covered a distance of 1,059 miles through the Midlands and North and South Wales, practically without a hitch of any kind. He reports that he was not once in difficulty with the car, or had occasion to stop to make any kind of adjustment *en route*.

DATES have been provisionally selected for next winter's tournament of the Florida East Coast Automobile Association. It will continue two weeks, opening on January 25 and closing on February 6. The Ormond-Daytona Beach is the most unique speed course in the world. At low tide the beach is a hundred yards wide, and as hard as cement. The racers can go at top speed for twenty miles without meeting with any obstacle.

THE Motorist's Diary, compiled by Mr. Charles Heidsieck, of Rheims, has been published in England by Mr. C. C. Lewis at 110, Fenchurch Street, E.C., and contains a hundred ruled pages in which space is left for the tabulation of particulars regarding automobile runs, including consumption of petrol, etc., stoppages, mileage, etc. Lists of hotels, a directory of petrol sellers, lists of members of some of the leading automobile clubs, synopsis of legislation with regard to the subject, and "hints on champagne" make up a useful little book.

MESSRS. BEARD BROTHERS, of High Street, Cricklewood, have laid down special plant for the repair of cars.

MR. A. WATSON has established a garage at Bishopton Lane, Stockton-on-Tees, where he has accommodation for twenty-five cars.

MR. F. BODEN, of Cheetham Hill Road, Manchester, having secured a licence, is now in a position to supply petrol at any hour of the day or night.

MR. TUFF, the new M.P. for Rochester, has promised that he "will not assist in any further restrictions of the most important automobile industry."

ON Saturday next, the 17th inst., the Western Section of the Scottish Automobile Club will hold its anniversary run to Troon, meeting in Glasgow at 12.30 p.m.

THE Brotherhood-Crocker Motors, Limited, has been registered with a capital of £20,000 in £10 shares, to manufacture, store, repair, and deal in motors, etc.

THE American Motor League has devised a series of nine road signs similar to the warning signs that are in use in France and is erecting them through its local consuls.

AFTER the return to its home in Essex of the Chelmsford steam car that went through the recent trials it proceeded at once to Cambridge for the use of a shooting party.

PHOENIX MOTORS, LIMITED, are now able to charge electrical cars, the necessary plant for the purpose having lately been installed at their works in Blundell Street, King's Cross, N.

SOME important changes are, we understand, taking place with regard to the manufacture of the Clement cars in France, and in the agencies for the same in this country. La Société Clement-Gladator is about to open a depot at 3, Leicester Street, Leicester Square, W.C., for the sale of Clement cars, under the management of Mr. E. H. Lancaster, who until recently acted as engineer to the Automobile Club.



The Reliability Trials.—Mr. W. C. White on the White Steam Car, No. 116.
(Photo by Mr. F. Coleman.)

FROM the Dunlop Pneumatic Tyre Company, Limited, comes a copy of their 1904 list of motor tyres. They are made in two varieties—beaded and wired edges. Of beaded-edge tyres two classes are made—heavy and light—the former in sizes from 2½ in. up to 5 in. or 120 mm., and in diameters from 26 to 40 in. The light beaded tyres range in size from 2½ to 3½ in. and in diameter from 26 to 34 in. The wired tyres are made in three sizes—2½ in., 3 in., and 3½ in.—and from 26 to 30 in. in diameter. The list also gives particulars of the Dunlop tyre-repair outfits, valves, gaiters, and motoring capes and coats.

THE LATEST ABOUT THE EDISON BATTERY.

IN its last issue, the "Automobile Magazine" publishes an interesting account of a visit to the works of Mr. T. Alva Edison at West Orange, U.S.A., by Mr. W. M. J. Morgan, in quest of the latest information with regard to the Edison battery. In view of the great interest shown in the latter, the following extracts from the article in question are not without their attractive side.

The world of mechanical traction has received further evidence that the Edison press agent is still alive and doing business at the old stand. He began his career months and months ago by announcing that Mr. Edison would invent a battery that would go speeding down the ages and hills faster than the winner of the Gordon Bennett race ever dreamed of going. Pleased by the rumpus he kicked up, the press agent then played his trump card by announcing that the battery would be cheaper by far than anything of the kind ever placed on the market, and that as a result the day labourer would henceforth proceed to his work in an Edison-batteried vehicle. At once a great void was filled and many labourers selected lots out in the country on which to build themselves houses, to and from which they would rapidly, safely and cheaply travel in a going-to-be Edison automobile. The play of the jocular press agent caused many people to keep a tight grip on their pocket books while declaring with emphasis that no electric vehicle manufacturer would get any £150 to £300 of theirs or anyone else's money when they could buy an Edison automobile for one-fourth of those figures. In the meanwhile they would wait for Edison. They waited; they are waiting yet, and were still waiting when the cruel press agent once more waved his red flag; but this time he short-circuited his promissory battery and came out with an absolute statement that the great Edison battery was now ready and would be greater and better and last longer and look pleasanter than any other battery that ever boiled; but he added something (which acted like an electric shock on those who had been so patiently waiting) when he concluded with the further statement that the battery would not be a cheap one. Then he gave the figures per horse power, which at once proved the Edison battery would be dearer than any other.

Making a storage battery is not quite as easy as Mr. Edison's press agent would have us believe, since it is now three years since that precious Edison battery was promised and yet where is it to-day? Less than two years ago I interviewed Mr. Edison and was told that the battery would certainly be ready in about two months. Having recovered from the Gordon Bennett races, I went over recently to West Orange, taking with me a long newspaper article which purported to give an account of the Edison "invention." The article was headed "Auto-Battery cannot break. Edison says his invention now perfected will stand all rough usage. Commercial success sure." That looked so much like real business I sailed up to the Edison laboratory and was soon anchored in the outside office. After a little delay I was piloted in to the great inventor, who was as genial and as entertaining as ever.

The newspaper article I had brought along said, among other things, that the Edison battery would be a commercial success and practicable for automobiles from every standpoint, and went on to quote Mr. Edison as having said:

"We brought our battery to perfection, and now it's up to the automobile manufacturers to build a strong machine—that won't break down. They're lots of fun to ride in, but when you go out in the country and get stranded six or seven times the fun all goes out of it. Now we have a battery here that will stand all the tests you can pile on it. And to show we did a set of batteries up in the case we pack them in when they are fitted to an automobile and then I got some of my boys to throw 'em out of the second-story window half a dozen times; and then we unpacked them and it never touched 'em."

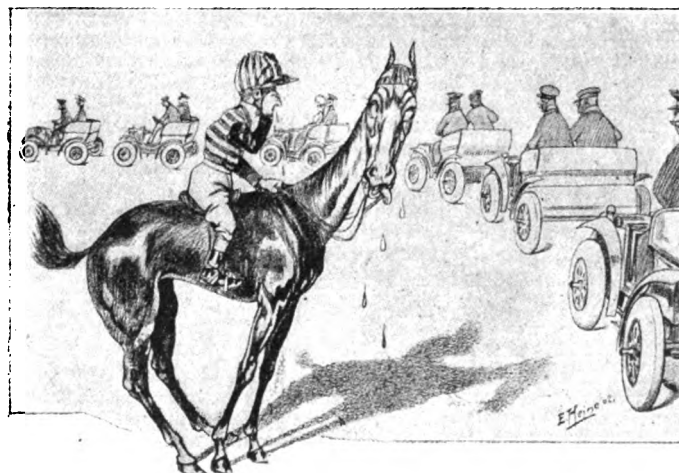
Mr. Edison acknowledged the paternity of the above, and was enthusiastic over the construction of the Mors and Panhard

machines, and talked for a long time very entertainingly of construction in general. I tried several times to get Mr. Edison back to batteries, but I was not entirely successful, though he finally admitted that he believed he could make better time with an electric vehicle (fitted with his battery, of course), than could be made with a petrol machine in a run from New York to Chicago, particularly if the vehicle was fitted with a wonderful gear multiplier which he is getting out. Mr. Edison said this gear multiplier will make the running of an automobile through sand and mud an easy matter; in fact, he said he has great hopes that this gear will be as successful as his battery. I looked closely at the great inventor when he said this, but could detect no evidence that he intended this remark ironically.

Finally, Mr. Edison spoke of the radius of his battery and said that an ordinary 10-h.p. Edison battery would probably drive a vehicle an average of 80 miles with one charge, whilst it would be practically indestructible and would last longer than any other now in use. A 10-h.p. Edison battery would for the present cost £120. Four cells are required per horse power and 21 cells are installed in the ordinary runabout, while 38 cells will, Mr. Edison says, drive a vehicle weighing one ton 60 miles, or a delivery vehicle weighing two tons will be driven 36 miles from one charge of a battery of 36 cells.

After getting all this information and I was preparing to leave, I saw a small runabout entering the Edison yard. The runabout was towing an electric vehicle fitted with Edison batteries which had gone dead on the road. Turning to Mr. Edison I asked him what was the matter. After some testing of the cells Mr. Edison informed me that he thought the battery was short circuited. As near as I could judge no one seemed to know, at least not for publication, just what the matter was, so I had to leave possessed with serious misgivings as to the Edison battery being all that the daily papers had cracked it up to be. In fact, if my opinion is of any value, I am free to say that I have very grave doubts if the Edison battery is going to be anything like the revolutionizer of the present form of batteries Edison's admirers have predicted it would be. It is to be hoped in the meantime that no one will hesitate about buying an electric vehicle through any idea that the Edison battery is going to be the wonder worker the uninformed press prophets have told us it would be. Mr. Edison may yet get that much heralded battery of his all right. I sincerely hope he will, but just now it is quite evident that the battery is far from right.

IN Holland there has been a reliability trial which lasted four days, and entailed covering a distance of 416 miles. The weather was fine, and great interest was shown in the competition by the public along the lines of route. The competition ended by a banquet.



The Racehorse does not like the outlook.
(Das Schnauferl, Munich.)

CORRESPONDENCE.

WHIPPING MOTORISTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the report in your issue of the 26th ult. headed "Whipping a Motorist," we may say that a somewhat similar occurrence has come to our knowledge in Essex, but it is perhaps more remarkable in that the assailant was a lady. The facts, shortly, are that a silent running car was being driven by our client at a reasonable rate in broad daylight upon a wide and straight road approaching a dogcart, in which two ladies were seated, one of whom was driving; no difficulty was experienced with the horse, and no intimation of any desire that the car should be stopped was made; whilst passing the car, which was well over on the near side, the driver of the dogcart raised her whip and slashed the driver of the car and his face across the face. Steps are now being taken to identify the offender, with a view to proceedings being instituted.

We might perhaps express the opinion that it is to be regretted that there is no central body representative of motorists, who would investigate and take action in such cases.

With reference to the query raised on page 564, as to a heavier fine being inflicted by reason of a defendant assisting other motorists to escape a trap, we might point out that it is no offence, but rather a

yards beyond him, and that I travelled the distance at the rate of 22 miles per hour. There was no corroborative evidence of any sort offered by the police as to the pace I was going. The sergeant admitted in cross-examination that I at once stated he had made a mistake, and that I offered to take him over the distance without altering a lever on the car, to prove my statement. This he refused to do, saying it was not his duty. I then went over the distance myself, going at exactly the same speed as previously, and stopped in front of the sergeant, who said he wished I had gone six yards further, as then he could have timed me, but that, as far as he could make out, I had taken about twice as long as on the previous occasion. I then went back to endeavour to obtain witnesses who saw me going over the measured distance, and found a man, but he, although stating I was going very slowly, and making some remarks about the police, refused to give his name and address, as it would damage him in his employment. I then went back to the police sergeant and informed him that the man refused to give his name and address, and asked him to go with me to obtain it, but he refused (as he admitted in Court) because his tea was getting cold! I also described the man to him, whom he said he knew very well, and he promised to send his name and address if a summons was served upon me; this he did not do. My solicitor, Mr. Douglass, endeavoured to prove that the police evidence could not be relied upon, but the magistrate stopped him, saying that had nothing whatever to do with this identical case, and practically stating that no evidence would be any good other than that of a man with a stop watch, as against the policeman's unsupported



Mr. Gardnes Williams, General Manager of De Beers Mines, Kimberley, at the helm of a Panhard Car, with Mr. Brigham, Chief Mine Surveyor (wearing soft felt hat) in the tonneau.

meritorious action, to dissuade another from continuing to commit, if already committing, or to advise him not to commit, if so contemplating, an unlawful action, and whilst doing so, there is undoubtedly no right to utilise it by way of additional penalty.

If any fine were admittedly increased by reason of such conduct, the best course would probably be to move the High Court for a mandamus to the justices, or by *certiorari* to quash the conviction, preferably the former, but in such an instance also the lack of a central body is unfortunate, as the proceedings are somewhat expensive, and many motorists nowadays are of only moderate means.—Yours truly,

TETLEY, TREE, AND TETLEY.

MOTOR CAR "JUSTICE."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The following facts will, no doubt, be of interest to your readers as showing how absolutely impossible it is, under existing circumstances, to successfully defend an action for exceeding the speed limit. I was summoned at Kingston-on-Thames for driving on the main Portsmouth road at Cobham at a speed in excess of the legal limit. The evidence produced was a police sergeant, who stated that he had timed me over a measured 440 yards, that he started his stop watch as I passed a post 434 yards away from him and stopped it as I passed a post six

evidence and his stop watch. I may state that whilst covering the preceding mile I was warned of this identical police trap by no less than four motor-drivers and one cyclist. Consequently I took extra precaution that I was not in any way exceeding the speed limit, and both myself and my driver went into the witness box and swore we were not going at more than eight miles per hour. In spite of this, the magistrate fined me the sum of £1, stating I had exceeded the speed limit of twelve miles per hour.

In face of these facts, and seeing that the police sergeant refused to give me the least assistance in any way, shape, or form, I ask what is a motorist to do when a policeman says he exceeded the speed limit?—Yours truly,

ALFRED DUNHILL.

PREVENTING SIDE SLIP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Thinking it may be of interest to your readers, I send the following description of an invention I have protected, which has for its object a device for counteracting side slip in motor or other vehicles and preventing puncture of the tyres thereof. The idea is to provide a brush or brushes or other suitable device attached to the vehicle and so arranged as to sweep the surface of the road and remove mud, etc.

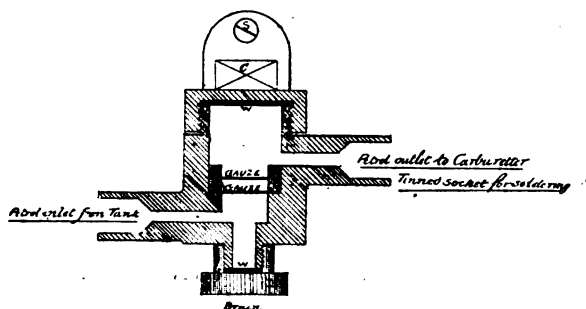
out of the path of the wheels. They are adjustable and may be raised or lowered at will and may be driven by motor or other power (they are by preference placed somewhat diagonally), suitable guards to be provided. The brushes could, if desired, be fixed ones, instead of being made to revolve. Turning corners, in traffic and night travelling, would be its principal service.—Yours truly,

E. S. WOOLF.

A PERFECT PROTECTION FROM DIRTY PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Seeing that so many motorists are worried by dirt in the petrol and consequent stoppages—a most annoying one you chronicle on page 596 which occurred to the 20-h.p. M.M.C. during the trials—may I be permitted to say that this can very easily be avoided? My trouble under this head occurred last year and culminated on the run home from the Bexhill speed contest. Although my Longuemare carburettor contains a strainer, it is in such an inaccessible position that one has to practically dismantle everything to get at it. Consequently I cut my petrol supply pipe and made and fitted therein the device shown herewith in half-size. It is fitted to the side of the body close to the step by one screw, the pipe ends being soldered to the sockets shown. It is impossible for sufficient dirt to accumulate in the chamber below the gauze, and as



G. Screw cap for inserting gauze rings
S. Attachment to car body
W. Leather washers
The gauze rings are kept in place by a spring not shown.

I always draw off from the drain whatever petrol I may require for odd purposes, it is bound to keep clean. For long runs, such as the recent trials, one could easily fit a cock in place of the bottom cap, to be opened from the dash for a momentary "blow through," if ever required. My device has been invaluable to me, and I have never experienced any further trouble, and it is very handy for drawing off petrol.—Yours truly,

FRED. H. HADFIELD.

THE MOTOR VOLUNTEERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your comment of last week aptly voices some of the discontent that is felt in connection with the much-vaunted Volunteer Corps. The proportion of officers to men is absurdly high; in fact, why there should be required officers at all is a puzzle. The duties have mainly consisted in playing the part of drivers to officers who have generally regarded them as such.

Cold comfort in barns, while men who are only one's equals are enjoying the luxury of War Office hospitality, is no compensation for the loss of time and the wear and tear of the cars that are loaned to a country which appears more inclined to smile at our efforts than appreciate our performances.—Yours truly,

PRIVATE X. Y. Z.

POLICE TRAPS AND THE RELIABILITY TRIALS.

THERE was a batch of motorists at the Horsham Petty Sessions on Saturday, the cases mostly arising in connection with the Worthing run during the Reliability Trials. The magistrates present were Mr. R. Hoper (in the chair), Sir Henry Harben, Lieutenant-Colonel Lyon, Mr. H. Padwick, and Mr. John Warren. The first defendant called was Frank Shorland, and after the police evidence had been given Colonel Lyon said, "I do not see why there should not be a mistake made. I was standing there, and I saw that motor coming up. Not only was I there, but Mrs. Lyon was there, too, and several other ladies. We could not imagine why the motor-car was stopped. I went to inquire, and found it was alleged to have been going at twenty-two miles an hour. This was impossible. I do not believe it was going more than twelve. I do know something about pace, and I saw the car coming all along North-parade." He said there was no danger to anybody, and that it was a case for dismissal. Ultimately, however, the Bench decided to convict, a fine of 10s. and costs being imposed.

MOTOR-CAR ACCIDENTS.

MR. MASSER has held an inquest at Tamworth concerning the death of James Ross, a boy aged four years. Arthur Bowden, motor-driver to Captain Allfrey, Williamstrop Park, Fairford, said he had had six months' service as a driver. On Wednesday he was driving alone in the car from Birmingham to Shenton Hall, Nuneaton, where his master was visiting. He was travelling at ten or twelve miles an hour when the accident occurred. As the car was coming down the hill he noticed a number of children by the roadside. Two crossed over before him, and the road was then quite clear for him. As he got nearer the deceased suddenly crossed the road, and was knocked down. Deceased practically ran into the car. Witness at once "threw out" the engine and applied two brakes, and the car was quickly brought to a standstill. The Coroner said there was no suggestion of any lack of care against the driver, and he thought the jury would have no difficulty in finding that it was an unpreventable accident. The jury returned a verdict to the effect that the affair was the result of a pure accident, and they exonerated the driver from blame.

A SAD accident has occurred on the main London and Brighton road, near Albourne, resulting in the death of a girl named Florence Boniface, aged eleven years, and serious injuries to another young girl. The girls were playing in the road when two motor-cars approached, one coming from the direction of Brighton and the other from London. The two children, when running across the road to avoid one car, were knocked down by the other—that which was coming from Brighton, and driven by Mr. R. L. Dawson, of the Coldstream Guards. Florence Boniface sustained very serious injuries, and expired about half-an-hour after the accident occurred. The other girl was also seriously injured. At the inquest Lieut. Dawson, of the Coldstream Guards, Aldershot, who was cautioned before giving evidence, said at the time of the accident he was driving from Brighton. It was when the car entered on the straight piece of road near Arden Grange that he saw three children playing in the road or on the grass at the side. They appeared to look in his direction, then to run backwards and forwards across the road. He put on the foot-brake, disconnected the engine, and sounded the horn. The children again ran across the road to get into the grass. Thinking the danger was over he took off the foot-brake, but one girl darted off the grass into the road, followed by two others. He at once turned the car into the grass. Then the girls also turned back, and one was struck by the front of the car, which travelled a few yards further and stopped on a heap of flint. He saw two children lying close to the car. He and his companions at once did all they possibly could for them. The jury returned a verdict of "Accidental death," adding that no blame was attached to Lieut. Dawson.

CARRYING MOTOR SPIRIT.

AT Penge police court, on Tuesday, Robert Fowler, of Poplar, was fined for driving a horse and van without a light.—The defence was that Fowler was carrying motor spirit for the motors in the Crystal Palace trials, and when the light went out it was dangerous to relight it.—The Chairman: I think it is a very dangerous commodity to take about the streets.

FURIOUS DRIVING.

POLICE SERGEANT BINSTED secured eight convictions at Chertsey, the other day, against motorists caught at B. shot. After the cases had been heard Mr. T. Neame, one of the defendants, summoned P.C. Gould for assaulting him. Mr. Chaldecott prosecuted, and the constable entered a plea of not guilty. For the prosecution it was contended that the constable, when he stopped defendant, took hold of his motor-bicycle and pushed him off; then he fell with the machine on top of him. After hearing the police evidence the Bench dismissed the case.

AT Stratford-on-Avon, several charges have been gone into with respect to motorists exceeding twelve miles an hour. On September 12th, the police laid a trap on the Banbury road, with the result that proceedings were instituted against several drivers. In the charge against Mr. Thomas C. Aveling, of Meridan Street, Birmingham, the police said the car was going at 24 or 25 miles an hour, the 440 yards being completed in 37 seconds. But another car was also on the road a very few yards behind the defendant's. The police said this one was also going faster than Mr. Aveling's, and overtook it just after it had completed the quarter of a mile. The defence, however, put it that the second car overtook theirs on the measured track, so that the police took the wrong time. Mr. Johnson, for the defence, also asked to see the watches with which the timing was done, but these were not in court, and the case was adjourned for their production.

AT Dundalk, Major Fortescue, Deputy Lieutenant, magistrate and High Sheriff for County Louth, of Stephenstown House, Dundalk, was fined £5 and costs for driving his motor-car through the town of Dundalk at a speed of about fourteen miles an hour. Captain the Hon. Harry de Vere Pery, the presiding magistrate, said, in imposing the fine, that the public must be protected from excessive driving of motor-cars and bicycles.

AT the Christchurch Petty Sessions, before the Mayor and ex-Mayor, the Hon. E. W. Douglas, General Sir Charles Shute, and Major-General

Galloway, a number of motorists have been summoned for having travelled at various speeds in excess of the twelve miles an hour legal limit. In the case of A. Ralph, the chairman said the Bench were divided in opinion, and the case must therefore fall to the ground. Wm. Nash pleaded guilty to a charge of furious motor driving, but urged as an excuse that he was driving Dr. B. Scott to see Captain Hunter, who was seriously ill, and who had since died. This did not prevent his being fined.

COURT.	DEFENDANT.	ALLEGED SPEED M. P. H.	RESULT.
Horsham	W. Marshall, Long Acre, W. C.	25	£2, etc.
"	W. Woodham (driver to Mr. Ivan Caryl)	22	40s.
"	F. Shorland, London, E.C.	22	10s., etc.
"	A. Pellant, London, E.C.	25	£5, etc.
"	E. Iliffe, Coventry	22	£5, etc.
"	T. S. Bennett, London, E.C.	28	£4, etc.
"	*C. G. Prewitt	25	£3, etc.
York	O. Denneler, Haddingley	—	Dismissed
"	A. Fletcher	—	£10, etc.
Steyning	R. Batson, Beekenhams	23	£10, etc.
"	G. A. Wallage, Willesden	25	£5.
"	H. Philpot, London	19½	£3.
"	T. Weatherhead	18½	£2.
Llangollen	J. H. Moore, Stourbridge	21	£1, etc.
"	W. Stokes, Worcester	—	10s., etc.
Chertsey	*Lieut. Teacher, Aldershot	22	£2, etc.
"	S. Moss, Brixton	—	20s., etc.
"	*H. B. Neame, Twickenham	19	10s., etc.
"	*G. T. Neame, Twickenham	—	10s., etc.
"	G. Wright (driver to Lady St. Lawrence)	23	£2, etc.
"	*A. Tyler, Uxbridge	22	20s., etc.
"	T. G. Weatherhead, Maidenhead	26	£2, etc.
"	F. Collard, Staines	20	£2, etc.
"	*G. Smyth, Tooting	—	£2, etc.
Arundel	W. Jordan	22	£5, etc.
"	G. Green	25	£5, etc.
Haywards Heath	R. Batson, Beckenham	25	£1.
"	*E. Jackson, London	—	£1, etc.
"	C. Smith, Epsom	28	£1, etc.
"	"	30	£2, etc.
"	R. W. Rogers, Crawley	25	£1.
"	J. Whitton, Crawley	23	£1.
"	H. Pearson, Worth	23	£1, etc.
Wareham	W. H. Burnell, Boscombe	20	£2, etc.
Knaresboro'	G. Marske, Ashton-under-Lyne	18	£2, etc.
"	H. W. Morley, Bradford	24	£5.
Leeds	R. Bell, Leeds	16	£5, etc.
Guildford	C. F. Hitchens, London, W.	21	£3, etc.
"	F. Fellows, Holmbury St. Mary	—	£5.
"	Lieut. Willis, Pirbright	19	£3.
"	*W. W. Hodben, Mortlake	16	£1.
"	A. Fordyce, Oxford Street, W.	28	£3.
Birkenhead	W. H. Thompson, Liverpool	25	40s., etc.
"	*R. Harrison, Liverpool	23	40s., etc.
Stratford-on-Avon	F. W. Bayliss, Wolverhampton	34	£3, etc.
"	T. C. Aveling, Birmingham	25	Adjourned
"	W. Hill, Birmingham	33	£2, etc.
"	A. E. Crowdy, Birmingham	—	Adjourned
Kineton	A. Lillywhite (driver to Mr. Freake)	30	£5.
Welwyn	W. D. Tucker, Enfield	33	£2, etc.
Christchurch	J. Woods, London	—	£5.
"	A. Ralph (driver to Mr. C. J. Haydon)	18	Dismissed
"	*F. Jannaway, Earls Court	17	£2.
"	*O. G. Carr	15	£2.
"	W. Nash	—	£2.
"	*W. P. Pond, Blandford	23	£2.
"	P. Felce	—	£2.
"	A. C. Brewerton, Caversham	22	£5.
"	D. T. Jenkins	25	£5.
Ringwood	S. H. Austin, London	20	£2, etc.
Richmond	R. Hadden, St. Margaret's	25	£2, etc.
Slough	L. Barwell, Ascot	—	£5.
"	A. C. Herts, London	—	£5.
Dundalk	Major Fortescue, Dundalk	14	£5, etc.
Brighton	B. Watson, Stockwell, S.E.	20	40s., etc.
Kingston	A. E. Payne, Clapham	34	20s.
"	A. Dunhill	—	20s.

* Indicates Motor-Cycle Cases.

THE POSSESSION OF A MOTOR-CYCLE.

At the Stratford Police Court, on Saturday, the Commissioner of the Metropolitan Police was summoned for refusing to deliver up a motor-cycle, valued at £55. There were two claimants to the machine—Mr. Robert Hatcher, Bank Buildings, Barking Road, E., and Mr. Joseph Barker, 71, Church Road, Bethnal Green, E. A month or so ago Barker was arrested on a warrant, charged with stealing the motor-cycle the subject of these proceedings, and it was then stated by Hatcher that there had been negotiations between him and Barker for the building of a new motor-cycle for £58. On that arrangement £8 was paid on account, and it was agreed between them that £25 should be paid on the 1st of the month following delivery, and £25 on the 1st of the next month. Barker several times hired an old motor, and one Saturday went away with it and did not return, his arrest following. Barker's defence was that the machine he was charged with stealing was the one he had engaged to buy; that he had paid £8 deposit, and was to pay the balance (£25) in September, and £25 next month. The Bench dismissed the charge of theft against Barker, expressing their opinion that it was quite possible the parties had misunderstood each other. The machine at that time was in the possession of Detective-inspector Nicholls, and in the absence of any order to give it up he had retained it. A number of witnesses were called and long arguments followed. In the result the Bench made an order on the police to deliver up the motor to Barker, but advised him not to deal with it till (1) six months had passed, (2) pending the decision of the suit for malicious prosecution which he had instituted, and (3) till the balance of the £58 was paid.

POLICE TRAP.

At Little Wolford, on the road from Oxford to Stratford-on-Avon, is a trap worked by policemen in plain clothes.

RESTIVE HORSE v MOTOR-CAR.

At Bristol County Court, before Judge Austin, Edwin Baker, of Nailsea, and Mrs. Baker brought an action against Frederick Butt, of Victoria Street, Bristol, to recover £21 damages by reason of the alleged negligence of defendant in driving a motor-cycle at Nailsea on July 9th last.

Mr. W. A. Roberts, on behalf of the plaintiffs, stated that on the day named plaintiff, with his wife and two children, were driving in a cart at a moderate pace, through Silver Street, Nailsea, and met the defendant upon a motor-cycle. When about twenty-five yards divided the parties the horse was startled, became restive, and turned round. Instead of pulling up the motor, the defendant tried to pass, and in doing so a wheel of the motor locked with a wheel of the vehicle of the plaintiffs. The cart was upset and the occupants were thrown out. Mrs. Baker was injured somewhat considerably, Mr. Baker was also hurt, but happily the children escaped. The horse was cut about the knees and hocks, and the cart and harness were damaged. The contention on the part of the plaintiffs was that when defendant saw that the horse became restive he should have pulled up, and not have tried to rush past the horse. After hearing evidence, the judge said that the motors were entitled to the same rights on roads as other vehicles. The mere fact that the thing made a noise and frightened a horse was not evidence of negligence. When Mr. Butt saw the horse was restive, he shut off power and went quietly on. In his opinion, there was not sufficient evidence to show that Mr. Butt did not do what a reasonably careful man would do, and he gave judgment for the defendant, with costs.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, OCTOBER 17, 1903.

[No. 241.

Published Weekly by CURDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

THE imports of foreign automobiles into this country show a slight tapering off. The number of cars and cycles imported last month was 461, the value of the same being returned at £141,335. The value of the "parts thereof" is given as £18,944, so that we get a combined total for September of £160,279 as compared with £196,364 in August last, and £297,881 (representing 294 cars)

in September, 1902. Some of the imports were of only a temporary character, being re-shipped to foreign destinations. Thus last month the re-shipments comprised 36 vehicles, amounting in value to £11,531, bringing down the net imports in September to £148,748. For the first nine months of the year, the net import of motor-cars, cycles, and parts stands at no less than £1,551,074 (representing roundly 5,110 vehicles), practically double those during the same period of 1902. As regards the exports of automobiles of home manufacture, the shipments during the past month were the largest so far recorded, amounting to 121 vehicles, of a value of £39,158. Of parts the exports attained a value of £4,708, making a combined total for September of £33,866, as compared with £12,782 (representing 31 vehicles) in September, 1902. To the end of September 623 vehicles of British manufacture had been exported this year, these, together with the "parts," representing a sum of £234,968.

Motorists as Loafers.

THE Rev. W. D. H. Armstrong has a queer idea of the loafer, who, according to the dictionary, is a person who lounges or loafs about. This reverend gentleman is a member of the Yeovil Rural District Council, which has already made itself conspicuous in the anti-motoring crusade, and at its last meeting he described motorists as "rich loafers," while a colleague improved upon the compliment by describing those who drove cars as "asses" and "lunatics." Fortunately motorists are not the only people who bray, and the Yeovil District Council is not the arbiter of the destinies of the automobile world.

The Hozier Works.

THE extension of the new works of the Hozier Engineering Co. at Bridgeton, Glasgow, was opened on Friday last. Lord Provost Sir John Ure Primrose proposed the prosperity of the company at the inaugural lunch, pointing out that our commercial supremacy depended on the enterprise and readiness with which we assimilated every idea which tended to the perfection of our industrial methods. Mr. W. A. Smith, the chairman of the concern, responded, and Mr. C. Scott Dickson, K.C., M.P., proposed the health of the Lord Provost.

For Municipal Work.

THE Midland Municipal Officers' Association held their first monthly meeting of the winter session at the Great Western Hotel, Birmingham, this week, under the presidency of Mr. A. D. Greatorex (West Bromwich). A paper was read by Mr. Joseph E. Parr (assistant surveyor to the Handsworth Urban District Council) on "Motor Vehicles for Municipal Work." The paper was mainly devoted to a comparison between horse and motor haulage. Experiments are being made by a number of local authorities in the way of street watering, dust collection, and in fire brigade work. In Kensington the steam water-cart was able to do work equal to three one-horse vehicles. Mr. Parr also sees great possibilities for the municipal motor-vehicle, which may at short notice be readily fitted with a plough and used for snow removal. Motor-vehicles, Mr. Parr considers, are more economical, where they are kept continually at work with the minimum of time devoted to collecting and loading, while they cause much less wear and tear of roads than the hoofs of horses.

Motor-Cars and the Police.

ON several occasions we have given instances of the value of the automobile in connection with police work, and we now learn that Mr. Garner, a Nantwich motor agent, has just been of some assistance to the police of his district, in tracking a horse stealer. He took the local police superintendent and two police officers on his Rex car, and the thief was fortunately caught about six miles out from the town on the same day. Perhaps the police authorities will in the near future regard the automobile as an essential part of their station equipment. Meanwhile, we are glad to see they are not above receiving the assistance of motorists when engaged in their duties.

A Scottish Run.

THIS year the Scottish Automobile Club, of which the Marquis of Ailsa has just accepted the vice-presidency, will hold an anniversary run in commemoration of the passing of the Light Locomotives on the Highways Act. This is to be held to-day (Saturday), the destination being the town of Ayr. The cars will meet in Blytheswood Square, Glasgow, at 10.30 in the morning, and the Club Committee is inviting all Scottish automobilists, whether members of the Club or not, to participate in the run, which, if fairly decent weather prevails, will be a great success. Motorists intending to take part in the event should communicate as early as possible with the honorary secretary, Mr. R. J. Smith, 59, St. Vincent Street, Glasgow.

Maidenhead Bridge.

MR. JOSEPH TAYLOR journeyed to Maidenhead Town Hall, last week, accompanied by a party of friends, including Mr. J. Fulbrook, of Slough, whose motor-car cushion was seized three and a half years ago, when he refused to pay the toll, eightpence (admitted at the Charity Commissioners' Inquiry).

this year to be illegal). It was sold for three shillings, and he received threepence change by registered letter post. Therefore, he occupied the position of chairman at the meeting as the primary cause which led Mr. Taylor to take up the Battle of the Bridge. The meeting was conspicuous by the absence of any member of the Maidenhead Corporation, who might have been supposed to be interested in a subject of such importance to the ratepayers. Mr. Taylor said there was no Act of Parliament to be got with regard to Maidenhead Bridge; the Corporation had one, and took care not to let him see it, but he discovered the Act in the British Museum. Then, after writing letters to the Corporation, he went to Messrs. Witt, K.C., and Danckwerts, K.C., through whose ability he freed Windsor Bridge in the final appeal to the House of Lords, and obtained their opinion, which was favourable to him. Next the Maidenhead Corporation had to submit their books to the Charity Commissioners, and it was discovered that they had spent nothing on the bridge, but £30, in ten years; they had put the receipts to borough purposes. The public would be satisfied by the ceasing of the tolls on the 31st October, and he (the speaker) could then retire and meet the costs and expense he had been put to the last three years.

A Pioneer Motorist.

MR. H. HEWETSON, who has been connected with automobilism since its inauguration in this country, is resigning his position as managing director of Hewetsons, Limited. He was a prominent figure at all the early motor runs, his Benz car carrying him to Brighton on several historic occasions. In the accompanying photograph he is seen on the first motor-car



Mr. H. Hewetson on the first Benz Car imported into England.

introduced into England in 1894. Later he achieved distinction by making fifty journeys of 100 miles day by day until an aggregate of 5,000 had been reached, and in his retirement from the position he has held so long will carry the good wishes of his many friends.

Motor-car Post.

THE automobile is becoming recognised by local postal officials, and a great boon has been conferred on Swaledale (Yorkshire) by the postal authorities. Hitherto mail carts have worked the district. Now a service of motor-cars will shortly be established for the conveyance of mails and passengers to Reeth and the upper reaches of Swaledale. Experimental journeys have been made by Mr. Morton, the Richmond postmaster, with most satisfactory results.

The First Scottish Motorist.

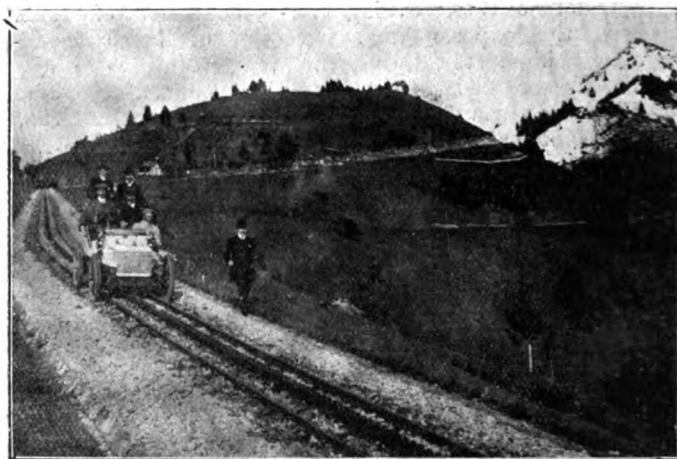
IN connection with to-day's run of the S.A.C., it may be of interest to recall that Mr. T. R. B. Elliot was the first user of a motor-car north of the Tweed. It was on December 27th, 1895, that he commenced running a 3½-h.p. iron-tyred Panhard car when he lived with his father at Clifton Park, Kelso. He ran 1,200 miles before the passing of the Act in November, 1896 and had the distinction of being fined 6d. at Berwick-on-Tweed for not being preceded on his way by a man with a red flag.

Breezes and Bonnets.

THE sudden striking one in the face by a large sheet of metal when going at seventy miles an hour is a possibility not to be anticipated with any degree of serenity, and the accident to Mr. Du Cros, jun., from this cause might have had an unpleasant result. In fact, more serious consequences were avoided by the coolness of the *mecanicien* catching hold of the steering wheel and so guiding the car, for Mr. Du Cros was stunned by the blow. Such a chance of mishap is not unknown to racing men, and a simple preventive is to fasten a leather strap right round the bonnet and underneath the frame. All owners of four-cylinder cars might adopt this simple device, and thus guard against similar contretemps.

A Civic Excursion.

SEVERAL of the Town Councillors of Southampton had a motor-car excursion the other day for the purpose of determining the speed limit of cars within the borough, which will be enforced under the new Motor-Car Act, which comes into force on January 1st next. All the different approaches to the town were traversed, and subsequently the "City Fathers" were the guests of several prominent motorists at tea.



Capt. Deasy descending the Rochers de Naye along the Cog Railway to Caux on his Martini Car. (See page 631).

Where Limitations of Speed are Asked For.

NOT only in Hampshire — which county was the first to move in the matter — but throughout the country local authorities are moving in anticipation of the Act. Some parish councils have already decided on recommending that all the roads within their areas should be scheduled for inclusion in the 10-mile-per-hour limit. Other enterprising village councils have discussed the matter as though the maximum should be reduced to six miles. Next week we shall publish the names of some places where decisions to ask the Local Government Board to schedule the roads within the area of the local bodies have already been come to. Readers are

invited to acquaint us of similar decisions being come to in their localities, so that we may be able to show exactly where the feeling against motorists is showing itself most strongly.

Motor Mountaineering.

THE adventure of Captain Deasy at Caux, referred to last week, arose out of a sporting bet recently made between the Captain and the vice-president of the Automobile Club of Switzerland. Since then he has made another ascent from the Palace Hotel at Caux to the terminus of the mountain railway line of the Rochers de Naye, 3,200 feet higher and 6,640 feet above sea level.

A Specimen "Accident."

How motor-cars are credited with wickedness of which they are not guilty was illustrated the other day in the columns of a leading Liverpool contemporary, which published a circumstantial account of how a motor-car had struck a trap, flinging the occupant to the ground with such force that medical assistance had to be obtained. Fortunately for automobilism, Mr. A. H. Dudley was cycling in the locality where the alleged motor-car accident happened, and has sent to

Motor-Car Wedding.

THE time has come when people no longer marvel at the temerity of the bride who goes to church on a motor-car. The automobile is also playing an important part in honeymoon tours, and it is evident that the matrimonial motor-car has come to stay— or rather to go. The accompanying photograph was taken at Hunstanton, on Thursday of last week, the occasion being the marriage of Miss Johnson, daughter of the head of the firm of W. H. Johnson and Sons, motor engineers, of King's Lynn and Hunstanton. In the group are to be seen five of the eight automobiles which were employed in conveying guests to and from the church.

Roads in Kent.

MR. D. JOSCELYNE, late chief engineer to the Public Works Department of Bengal, after an inquiry extending over a period of eleven months, has, in pursuance of instructions given him by the Kent County Council, made a report upon the system of repairing and maintaining the main roads in that county. Kent stands alone amongst all the counties of England in adopting the contract system, and Mr. Joscelyne condemns it as expensive and inefficient. He points to the depot



A Motor-Car Wedding Party at Hunstanton.

the Press a less ornate but more accurate account of the incident as follows:—

The True Account.

"My brother and myself were returning from Mollington on cycles, and near where the road branches off for Saughall we met a runaway horse, all alone. This afterwards proved to be the animal belonging to Mr. Walley's conveyance, which we found a short distance on this side of the gibbet windmill, lying on the grass at the road-side, completely overturned, and with Mr. Walley lying unconscious underneath. We managed to ease the weight somewhat, but this proved a rather difficult matter. A few minutes later a motor-car containing three gentlemen (strangers to us) came along from the direction of Neston, and together we released the injured man. The owner of the car then very generously offered to turn back and take Mr. Walley to Neston for medical assistance, and this was the course adopted. I think it extremely improbable that any motor-car caused the accident, as not one passed us whilst we were on the Old Chester Road. It certainly could not have been the one whose occupants so willingly rendered the valuable assistance they did. Apparently it was owing to the left-hand wheel crossing the ditch and mounting the hedge bank that the vehicle was so completely overturned."

system of collecting materials for the repair of the highways. This involves handling and hauling (frequently for unnecessary distances) twice over. Traction engines are largely employed in the haulage, and are responsible for the excessive wear and tear of the roads. Often the haulage of stone by traction engines goes far to destroy as much material in the road surface as is being hauled for repairs. Mr. Joscelyne is of opinion that road-rolling should be carried out all the year round, and not during the winter season alone; while the rollers should belong to the authority, and not be hired from contractors. Counties which work departmentally own and use only from four to eight rollers each, but in Kent, the number of rollers simultaneously and daily used varies from forty-two to fifty-eight.

Road Comparisons.

SUMMING up his case against the contract system of road maintenance, Mr. Joscelyne states that the average net cost of roads in the county of Kent is £17.6 per mile more than the net cost of Glamorganshire, £24.6 per mile more than that of Essex, £41.1 per mile more than that of Surrey, and £61.0 per mile more than that of Cheshire. In gross cost per mile, in net cost per mile, and in cost of material per mile, Kent stands higher than any other county from which returns have been obtained. Kent uses more stone per mile than any of the other

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counties, and more than twice as much as ten out of fifteen of the counties. Mr. Joscelyne considers that at a moderate estimate the loss to the county by the contract system, with its accompaniments of defective management and feeble and inefficient control, has amounted to £200,000 or £300,000 in the course of twelve or thirteen years. Mr. Joscelyne's recommendations entail a complete revolution of the present methods of road maintenance and repair and business management. He strongly advises the council to abolish the contract system altogether, to adopt the departmental system of road management, and declares that it is absolutely necessary that the council should have an engineer-surveyor who can devote his whole time to the duties of his office.

The Speed of Tram Cars.

AT Brentford, Sidney Blackler, James Dowse, and Ernest Downham, drivers in the employment of the London United Electric Tramways Company, have been summoned for driving their cars at speeds exceeding 10 miles an hour—18, 15 and 16 miles an hour respectively—the first two at Uxbridge-road, Southall, and the other at Richmond-road, Twickenham. The police measured off lengths of the road and timed the cars with stop-watches. In the case of Downham evidence was called, and one passenger put the pace at "three to six miles an hour," and another at "certainly not above 10 miles an hour." The defendant deposed that his topmost speed position at the time was seven miles an hour. Mr. Montagu Sharpe asked what the maximum speed of the cars was. Mr. Oswald Hanson (for the company), said they ran up to 10 miles an hour limit. The reply evoked a burst of laughter from Mr. Sharpe and his nine brother magistrates, and Mr. Sharpe, having questioned the defendant, said the car weighed ten tons, was on the down grade, and was overtaking a trotting van. He imposed a fine of 20s., including costs, in each case. Mr. Hanson said the men had to pay their own fines. The case of Mr. Moffat Ford against drivers in the service of the London United Electric Tramway Company has been further adjourned to the 31st inst.

Scottish Traders.

AT a meeting of the Scottish Motor Manufacturers and Traders' Association in the North British Station Hotel, Edinburgh, on the 8th inst., the following gentlemen were elected members: Messrs. R. Douglas Croall (John Croall and Sons, Ltd.), W. E. Townsend (Middleton and Townsend) and William Flint. Great satisfaction was expressed with the membership, which now includes nearly every motor manufacturer and trader in Scotland. The question of a form of guarantee which would be acceptable to the trade generally was considered, and it was remitted to the Chairman and Secretary to draft a form and submit it to the next meeting.

The Vagaries of the Bench.

THE vagaries of the judicial mind are frequently illustrated in our list of furious driving cases, as reported week by week. Often motorists are fined £5 or £10 for driving their cars at a speed only a mile or so per hour faster than will be permissible when the new Act comes into force. Offences of greater degree, which, in this matter, means greater speed, incur less penalties at other courts. This week's list presents another instance of the inconsistency that prevails throughout the country. At Liverpool a motorist was summoned for driving a car to the danger of the public and knocking a man down. With grave mien and in solemn tones the chairman of the Bench declared "it was a very serious thing to knock down a man with a motor-car, and the bench must mark their sense of the defendant's error of judgment by imposing a fine of 5s. and 4s. 6d. costs." On the same day, at Doncaster, a motor-car driver, who was alleged to have driven at thirty miles per hour, although he only confessed to fifteen, was, in consideration of the fact that he "had not been previously convicted, fined a mitigated penalty of £7." Verily it would appear to be cheaper to knock a man

down in Liverpool, than to travel speedily on the roads of Doncaster. Possibly the good people of the latter town fancy they see in the motor-car a rival to the horse—an important factor in the prosperity of the place.

Rules of the Road.

THERE is no doubt the prevailing idea in the minds of the public is that motorists are a selfish lot of individuals, and so long as they can progress they care not what becomes of other users of the road. They seem to think the one idea of drivers of automobiles is to proceed as expeditiously as possible, and to pass other vehicles at all hazards. This idea is strengthened by a letter from a motoring correspondent, who complains that small cars will not give way to faster cars. He maintains the former will hold the centre of the road, and thus prevent all passing except by taking risks. He thinks all forms of slower traffic should make way to the faster, and this opinion, in the main, we agree with. We are afraid human nature is the same among all classes, and we can further endorse the continuation of the same correspondent's remarks as to the unreasonableness of some competitors in the 1,000 miles Trial, whom he maintains proceeded daily in lines and singles, nearly always hugging the wrong side of the road, and steadfastly obstructing the efforts of other motorists in their attempts to pass. *Argumentum ad hominem.*

Tiller Steering.—A Point for Study.

AN American medico-motorist, Dr. B. Franklin Stahl, has written to a contemporary on the subject of tiller steering, pointing out the possibility of the development of a permanent injury resulting from a form of lameness in the third finger of the left hand. The doctor writes as a result of a personal experience, and attributes the lameness to the tiller steering mechanism of his car. The condition developed soon after the beginning of the use of this form of steering device, and has, he states, proved quite resistant to remedial measures. The doctor continues:—"It seems reasonable to regard it as due to injury inflicted by the end of the tiller engaging in the palm of the hand incident to certain movements in guiding the machine. The condition induced could easily be mistaken for a rheumatic affection of the second joint of the ring finger. There are doubtless many others who have had the same trouble, and, judging from my own experience, are likely to have it for an indefinite time. It is very desirable that the subject should be carefully studied, and, if the facts warrant a conclusion against this form of steering device, that the matter should be brought to the notice of the manufacturers."

Mr. Dugald Clerk.

MR. DUGALD CLERK, who is to read a paper at the Automobile Club on "The Governing of Gas and Petrol Engines" on Thursday next, is a well-known authority on the gas engine. In 1878 he designed some improvements in these engines, and in the following year they were exhibited at the Kilburn Show of the Royal Agricultural Society. Later he invented the "Clerk" two-cycle gas engine, and has since attained reputation in connection with papers read before many learned societies.

THERE will be no anniversary run from London this year organised by the Automobile Club of Great Britain and Ireland.

The Local Government Board is reported to have decided that for the purpose of specifying the 16ft. highway referred to in Clause 8 of the Motor-Car Bill, the measurement will be made over the entire space between the fences or hedgerows forming the boundaries on the two sides.

THE new Toledo long-distance steam touring car has now arrived in London, and the agents (Messrs. Shippey Bros) will be pleased to drive intending purchasers over any of the roads which were included in the itinerary of the recent Reliability Trials.

ECHOES OF SOUTHPORT.

A PART from the natural irritation caused by the excessive charges of the local innkeepers, the meeting at Southport was of a most enjoyable character and perhaps the most successful race meeting yet held. Competitors and officials worked most harmoniously together. There was one defect, however, and that was that occasionally there was considerable doubt as to which events were being proceeded with, but this is a detail which can easily be rectified in subsequent gatherings of the kind. The track was a good one, with one rather sharp corner, which was usually taken by the inside man in a way that caused spectators sometimes to hold their breath.

The earlier process of weighing the cars was necessarily a slow one, but somewhat exciting, notwithstanding the pouring rain. The amusement was found in watching the faces of the competitors as they saw their cars going on the scales, in more than one instance having to take them off again for further stripping. In one case especially this seemed impossible, but finally, after jumping heavily on the scales and removing the screwdriver, Mr. Roll's Mors was shown to weigh exactly two thousand kilos. The Star car weighed 19 cwt. 2 qrs. 14 lbs.; Mr. Lloyd's Napier, driven by Pugh, 18 cwt. 3 qrs. 7 lbs.; and Mr. Edge's Napier, 19 cwt. 2 qrs. 10 lbs. The Daracq had to remove its accumulators to get under the weight

Mr. Williamson came along almost immediately after on his new 16-h.p. Lanchester, a car with which he is exceedingly pleased. A short run on this vehicle round the town convinced us that it is worthy of the high reputation of the firm, and we may say its speed surprised us. As in all Lanchester cars, it is air cooled, quiet in action and free from vibration. The garage consists of a range of buildings with fully equipped workshops, electrically installed, and a large engine room with a 30-h.p. gas engine and one of smaller power for reserve, dynamos, etc., large switchboards, and the other usual paraphernalia. The whole of this engine room is looked after by the neat Phyllis who opened the door to us, and who, while working, is able to keep herself as tidy as any housemaid. Truly these Southport people are wonderful, and when our friend suggested a run round his private motor-car track attached to the house, this was accepted as a matter of course, and the ride much enjoyed. An up-to-date sight was to see the many stalled stables occupied, not by horses, but by petrol cans, outer covers, inner tubes, etc.

Hospitality and Southport seemed synonymous terms, and the invitation to visit Mr. Thornycroft Vernon's garage and house was equally welcome. Here we found an 18-h.p. Mercedes, a 24-h.p. Georges Richard, a 20-h.p. M.M.C., and several other cars. A number of local friends, as well as others from Liverpool and elsewhere, were also assembled. This garage is on a similarly elaborate scale to that already mentioned, with the



Mr. Andrew Fletcher, of Saltoun, on his 60-h.p. Mercedes.

[Photos by]



Mr. J. E. Hutton on his 70-h.p. Panhard and Mr. J. Lisle on the Star Racer.

[Mr. V. A. Simon.

THE SOUTHPORT TRIALS.

allowed, while the Wolseley, with rather an elaborate body, had to come off the scales for further "fining." The C.G.V. proved to be within the limits, while the car ridden by Mr. Henri Farman in the Gordon Bennett Race, and now driven by Mr. Harvey du Cros, jun., was 28 lbs. under the permitted weight.

To we Southerners, cramped in London, and having to pay twenty shillings a week for a cage on a top floor to keep our car in, the sight of some of our friends' garages filled our hearts with envy. Mr. Baxter, of the Leyland Rubber Company—makers of the Collier tyres—lives at Leyland in a district with plenty of available land; therefore we were not surprised at his elaborate electric installation and convenient garage, where he and his son keep their cars. *En passant*, we might mention that in place of the sixteen horses previously kept, only two specimens of the equine race remain, these being favourite pensioners.

Even outside the town of Southport itself the fame of Mr. Williamson's garage is well known, and an invitation to visit our old acquaintance of the first thousand miles trial days was eagerly accepted. Driving past the hall we made straight for the garage, the door of the engine room being opened by a neat girl in apron, who bade us enter. Mr. Higginbotham and his friends were at work on the former's 60-h.p. Mercedes, while Mr. Williamson's 20-h.p. Mercedes was being overhauled, and our 40-h.p. Mercedes seemed pleased to be in such good company. We noticed in addition a 20-h.p. Daimler, an old steamer and a 10-h.p. Lanchester.

additional luxury of carpet. The establishment leads straight from the billiard room, and Mr. Vernon, not content with the spacious accommodation already provided, has works in progress to provide rooms, etc., for the men, and to cover the courtyard, so there will be no fear of friends' cars being left in the wet. As at Mr. Williamson's, the electric light is used wherever possible, and the whole arrangements are on a very comfortable and pleasant scale. Viewing these garages, as we have already stated, has set our hearts longing, and shortly there may be seen in our pages an advertisement for a modern garage in the country, with a cottage attached, wherein to sleep. For it seems the custom for ladies and gentlemen to spend their spare time overhauling and examining motor-cars.

Southport, from a motoring point of view, is evidently a very go-ahead place, with a popular mayor, Mr. T. Scarisbrick, whose first words on introduction to Mr. Roger Wallace were not in praise of the Motor Car Act, and who is famous outside his town for his penchant for motor-cars. His wife also drives an electric vehicle, occasionally carrying two other lady passengers, one of whom sits *a la mecanicien*. Whether, however, the recent trials will be made an annual event or not appears somewhat an open matter. A powerful committee of local, Liverpool and London men has been formed as a preliminary, but we understand the elaborate and perfect arrangements made will cause an increase in the rates of one penny in the pound, and notwithstanding the

enormous sum of money brought into the town, it is reported that there is already some grumbling at the expenses.

While returning to town, what might have been a nasty accident happened. Mr. Williamson, on his 16-h.p. Lanchester, escorted Mr. Higginbotham on his 60-h.p. Mercedes, and Mr. Cordingley on his 40-h.p. Mercedes, as far as Ormskirk. About three miles further on, in turning a corner, the "sixty" suddenly swerved, smashed the gate and one of the posts to pieces, and by some means turned with its nose straight into a ditch. The back passenger, Mr. Ward, went over the driver's head; the second passenger, Mr. Crewe, fell sideways into the same ditch, and Mr. Higginbotham, somehow, fell on to the gear box. The back of the seat was splintered. Our car, close behind, had, fortunately, just room to clear, and pulling up quickly, we hastened back, where we found everybody up, and apparently not much hurt. The ditch, unfortunately, was wet, and those who had been in were damp, but no bones apparently were broken. On examination it was seen that the frame of the car had deeply embedded itself into the earth, all amongst a lot of roots, and well under a hedge. Espying a colliery some distance away, our car was sent to obtain boards, tackle, etc. These were soon obtained, and quickly in use. Two hours' strenuous exertions were necessary, however, to get the car on to the road. It was then seen that beyond the steering no vital damage had been done. A piece of copper wire was utilised to fasten this up, and cautious progress made to St. Helens, where leather bands were purchased, enabling all to reach Macclesfield just before ten o'clock.

LICENSING CERTIFICATES.

SINCE the new automobile law came into operation in the State of Massachusetts no motorist ventures therein, unless provided with the certificates of which we give reproductions herewith. One refers to the vehicle itself, the



Commonwealth of Massachusetts

Massachusetts Highway Commission

20 FEMBERTON SQUARE, BOSTON

MASSACHUSETTS AUTOMOBILE REGISTER No. 394

This certifies that an automobile owned by or under the control of Henry G. Fack, residing at No. 367 Union Street, Springfield, Mass., has this day been registered in accordance with the provisions of chapter 473 of the Acts of 1903.

DESCRIPTION OF MACHINE.

Type of machine, Runabout, Name of maker, J. Stevens Arms & Tool Co.; Maker's number, 110, Character of motor power, Gasoline; Horse power, 8 1/2; Predominating color, Black. The register number, which will be furnished by the Massachusetts Highway Commission, shall be displayed at the front and back of the vehicle in conspicuous places so as to be always plainly visible. The automobile shall carry two lamps showing white lights visible at least two hundred feet in the direction toward which the vehicle is proceeding. The register number shall be displayed on the sides or fronts of said lamps, in such a manner as to be plainly visible when the lamps are lighted. The figures are to be in Arabic numerals not less than one (1) inch in height.

Date August 4, 1903. W. E. T. Clough, Jr. Massachusetts Highway Commission. Countersigned: Arthur Secretary. Not valid unless countersigned.



Commonwealth of Massachusetts

Massachusetts Highway Commission

20 FEMBERTON SQUARE, BOSTON

MASSACHUSETTS AUTOMOBILE REGISTER. OPERATOR'S LICENSE No. 238

This Certifies that Harry G. Fack, residing at No. 367 Union Street, Springfield, Mass., has this day been licensed to operate an automobile of motor cycle in accordance with the provisions of chapter 473 of the Acts of 1903.

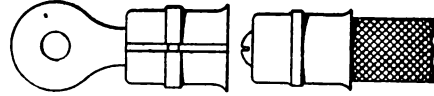
Description of Person Licensed.

Date of birth, May 5, 1873; Sex, Male; Height, 5 ft. 9 1/2 inches; Weight, 150 lbs.; Color of hair, Brown; Color of eyes, Brown. Date July 29, 1903. W. E. T. Clough, Jr. Massachusetts Highway Commission. Countersigned: Arthur Secretary. Not valid unless countersigned.

other to the driver, and neither leave any doubt as to the identity of the car or its driver. If this is the class of licence to be introduced into this country motorists are scarcely to be congratulated.

SOME USEFUL NOTES.

AN improved terminal for ignition connections has been brought out by Messrs. Herz and Co., of New York. The terminal consists of two parts, one telescoping in the other. The inner one of these two parts is fastened to the cable end by means of a screw. The insulation of the cable is first cut away for about three-quarters of an inch, and the strands of the bare end are bent back over the insulation. The copper shell or inner part of the terminal is then slipped over the end of the cable



and is secured by means of the screw. The cap will be seen to be provided with a circumferential ridge or corrugation about the middle of its length. The outer part of the terminal is made to exactly fit over the inner part, and is slotted and provided with a perforated lug for connection with the sparking plug. The outer part of the connector remains constantly fixed to the plug, it being only necessary to pull the cable end out of this connector when it is desired to disconnect the plug.

IN one of their weekly letters on tyres and the proper treatment of the same, which appear in nearly all the French automobile papers, Messrs. Michelin refer to the effect of moisture on tyres, and admit that it weakens the fabric in all cases when it makes iron rust. Where bolts, that penetrate the fabric, rust, deterioration of the latter is sure to spread, and for this reason it is common that tyre casings burst the first time they are used after a winter's rest, the effects of rust and moisture having become localised and aggravated during the storage period. The question as to whether muddy tyres should be washed or not is thus answered:—"By all means wash them after each trip; there is less danger of damage from the water, which soon dries off, than from the mud, which retains the moisture; besides, the mud may conceal a cut which ought to be attended to."

WE frequently receive enquiries as to the cause of explosions in the silencer or exhaust box. Their origin is very simple. Whenever a charge in the cylinder fails to be ignited owing to "missing" or other causes, the unburnt charge passes out of the exhaust valve upon its being opened by the cam and enters the silencer. If only one or two charges are missed the proportion of fresh gas in the silencer may be small in comparison with the burned gas which it contains from previous explosions, especially if the silencer be a large one. If, on the other hand, a large number of explosions are successively missed, the burnt gas may be entirely "scoured" out and its place taken by a perfect mixture of full explosive qualities. Everyone has noticed the blue flame which passes the exhaust port when the exhaust pipe is disconnected, and upon an explosion in the cylinder with the silencer attached, this flame rushes into the exhaust pipe and silencer. When, therefore, after missing a large number of explosions, the engine finally succeeds in securing an ignition, the exhaust flame reaches the silencer full of perfectly explosive gas, which promptly fires. Fortunately the silencer contents are only at atmospheric pressure and so the pressure of explosion cannot much exceed 100 pounds per square inch, but this is, remarks Mr. A. L. Clough, an American expert, sufficient to wreck a weakly constructed shell. Every silencer ought to be designed to withstand 100 pounds per square inch internal pressure and a due factor of safety then allowed.

THE Eastbourne Town Council has informed the British Electric Traction Company that as a system of motor omnibuses has been inaugurated, there is no necessity for electric trams, and that if they should be required the Corporation would provide its own system.

CONTINENTAL NOTES.

THE question of the course for the 1904 Gordon Bennett race has not yet been settled. In addition to the one in the Homburg district, a course between Lippstadt and Paderborn has been suggested, and the other day General Becker and Freiherr von Brandenstein, of the German Automobile Club, went over it by motor-car. Still another route, and one which is said to have many points in its favour, is in Mecklenburg. A good deal of talk is at present going on in motoring circles in Paris as to the French team, and at the meeting of the Committee of the A.C.F. last week it was definitely decided to send a challenge to the German Club. It is reported that several French firms have notified their intention of building special racers for the event, among these being Renault, Darracq, and Gobron-Brillie. The Sporting Committee of the A.C.F. had the matter under consideration last week, and decided that, as an acknowledgment of the success of the Panhard-Leva-sor Company in securing and holding the Cup for two years, one of the places in the team of three shall be allotted to a Panhard. For the other two places an eliminatory trial is to be held.

It looks as if the 1904 Gordon Bennett race will be the most important of the series, for, judging from present appear-



At Butgenbach, Germany.



At Bastogne, Belgium.

BY ROAD FROM PARIS TO ST. PETERSBURG.

ances, there will be no less than eighteen cars on the road. Challenges have been received by the German Club from France, Great Britain, and Austria. America will doubtless send in a challenge, while it is not improbable that Belgium will enter the field, for it is now announced that the Compagnie Metallurgique, of Marchienne, is building two special 100-h.p. racers for the event, that the Pipe Co. are building a racer, and that the Nagant Co., of Liege, which is about to turn out cars on the Rochet-Schneider system under licence intends to follow the example.

THE Automobile Club de Namur and Luxembourg is interesting itself in the question of tarred roads, with the view of obviating dust, and has decided to experimentally tar a kilometre of the Namur-Dinant road near Wepion.

"LA FRANCE AUTOMOBILE" has issued the rules and regulations under which the touring competition from Paris to Rome will be run off in March next. There will be four classes, all touring vehicles, based on the cylinder capacity of the engine—Class 1, 0-2 litres; Class 2, 2-4½ litres; Class 3, 4½-7 litres; and Class 4, more than 7 litres. Full particulars of the competition may be obtained by anyone interested from M. Paul Meyan, 68, Avenue de la Grande Armee, Paris. Entries will be received up to March 1st, the fee being 100 fr. for Class 1, and 200 fr. for Classes 2, 3 and 4.

THE kilometre trials on the Dourdan road are to be held on Thursday next, and promise to afford an interesting meeting. They are being organised by "Le Monde Sportif," and already over fifty entries have been received, among these being Mr. S. F. Edge, with his Napier car.

OWNERS of 22-h.p. English Daimler cars likely to undertake a tour in France will learn with satisfaction that a car of this type has been formally passed by the Service des Mines as fulfilling all the requirements laid down by the French Government. Owners of cars of this type will consequently be relieved of all trouble when taking their vehicles into France, the Daimler Company being able to furnish the necessary *permis de circulation*, to allow the car to be taken into France without difficulty on this score, the motorist consequently having only to secure a *permis de conduire*.

FOR some time automobilists in Brussels have rebelled against the decree issued in July last by the burgomaster, M. de Mot, limiting the speed of motor-cars through the streets of the city to five kilometres an hour. Some test cases came before the courts last week, and resulted in a victory for the motorists, the judge declaring the decree of the burgomaster to be illegal, because the municipal council could not delegate to the burgomaster the right to draw up a regulation which that body alone

could make. Consequently the motorists were acquitted. The judgment has caused great rejoicing in automobile circles in the Belgian capital.

THE track race meeting which is to be held on Sunday next at Westend, Berlin, by the German Automobile Club promises to be an exciting event. The entries so far received include M. Jenatzy, who will drive a 60-h.p. Mercedes; Herr Robl; with a 40-h.p. Durkopp; Herr W. Poge, 60-h.p. Mercedes; Herr J. Beut'er, 45-h.p. De Dietrich; Count Schonborn, 28-h.p. Mercedes; Dr. Ludwig Kohnstamm, 28-h.p. Mercedes; Count Felix Chamare, 24-h.p. Nesselldorf; Herr Martin Hewald, 24-h.p. De Dietrich; Dr. Alfred Sternberg, 20-h.p. Protos; Count Talleyrand-Perigord, 16-h.p. Cudell; Dr. James Bleichröder, 24-h.p. Panhard; Freiherr von Nutzenbecher, 12-h.p. Benz; and Freiherr von Brandenstein, 12-h.p. Cudell.

AT a meeting of the Technical Committee of the A.C.F. last week a discussion took place as to the possible utilisation of steam in the cylinders of internal-combustion engines, and it was announced that some experiments in this direction were being carried out at the Club's laboratory.

THE latest news to hand of Madame Lockert, who it will be remembered is making the journey by road from Paris to St.

Petersburg on a 14-h.p. Tony-Huber car, is from Wilkowichky, in Poland. The intrepid chauffeur was delayed at the frontier for some time by the officials, who would not allow the car on Russian territory, on the ground that her passport only permitted entry by rail and not by road.

M. SANTOS-DUMONT returned to Paris on Sunday last from the visit to his native country. He proposes to ascend in one of his airships as soon as the weather is fine enough, and he also talks of trying to cross the Channel. The aeronaut will next year return to Brazil for the purpose of competing for the prize of £20,000. This prize is offered to aeronauts of all nations, the competitors having to steer their airships round the Bay of Rio de Janeiro.

TOURING IN WALES.

HAVING just completed over 1,000 miles on my new 10 h.p. Wo'seley car, which was specially built with extra long tonneau, and filled with luggage, only leaving room for the two passengers behind, I send you a photo of same, taken whilst climbing Great Orme's Head. We started from Long Acre, London, ran into Lincolnshire, and across to North Wales, where we paid a visit to most of the interesting places,



Mr. G. Linnell climbing Great Orme's Head on his Wo'seley Car.

afterwards returning via Birmingham to London. With the exception of one puncture caused by a large nail when near Llangollen, which delayed us ten minutes, we had no trouble whatever. Furthermore, we have so far only used about two pints of water, the engine keeping remarkably cool. We were eight days on the tour, on one of which we gave the car a rest, owing to heavy rain. The stop, however, afforded us time to look round the old city of Chester.

GEORGE LINNELL.

A MONTH WITH A MOTOR-BICYCLE,

BY THE REV. R. OAKLEY.

STARTING from High Wycombe on August 25th, I commenced my long ride, steering to Oxford, climbing Dashwood Hill *en route* with my motor-cycle loaded. Thence I travelled to Gloucester and on to the precipitous town of Chepstow, the main street of which is a very stiff gradient, being 1 in 6 in places, my trusty Quadrant, however, climbing this in style. From there I continued on over the many miles of country tram lines, through Newport, Cardiff, Cowbridge, Bridgend, Neath, and Swansea, to Carmarthen, making this last mentioned place in twenty-four hours from the start, the distance being 205 miles—not a bad first day's travelling. I was delayed by rain at Carmarthen, but arrived at Tenby just at dark, 236 miles, without breaking the journey.

On the next day I went to Llandilo, thence to Malvern *via* Llandovery, Brecon, climbing the Hertfordshire Beacon at 25 m.p.h.; on to Worcester, Kidderminster, Much Wenlock and Shrewsbury to Chester; making a non-stop run from Kelsal *via* Warrington, Wigan, and Preston to Lancaster. Then there was a glorious run through the Lake District to Grasmere, whence I left at 12.30 for Keswick and Carlisle, and arrived at Selkirk at 7.45 p.m., the best non-stop run so far of the tour. From Selkirk I went to Edinburgh, to officiate at a wedding. Then I started southwards to baptize a child at Twickenham.

The route this time was *via* Moffat and the Beattock Valley, the machine going well in spite of my having ridden full tilt into a ford in the dark. Luckily, neither myself nor the machine sustained any damage. I came over the top of the Kirkstone Pass, where I stopped at the highest hotel in the United Kingdom, viz., 2,854 feet above sea level, the landlord informing me that mine was the first motor-bicycle he had seen there.

Swirled by hurricanes and dodging the showers, I fought south to Cheshire again. A fine sunset enticed me to ride all night, and as I was due at Twickenham next day, I decided to start, having turned over my first thousand miles that day.

I reached Twickenham safely, but had set myself too long a run, and, when tired, charged a wall in the dark, carrying away the left pedal and lamp on port side; this was refitted locally, and I was off again to Tintagel, Cornwall, next day, *via* Reading, Andover and Salisbury.

I appreciated the advance of the 1903 "Quadrant" engine when I faced the awful hills between Andover and Salisbury. Got to Wincanton, where I picked up a horse-shoe nail, mended tyre and proceeded to Exeter, continuing *via* Oakhampton and Launceston to Tintagel; making this place my headquarters for a few days and taking local runs to Boscastle, Truro, Stratton, etc., and during the last 250 miles I did not touch a nut or screw.

I returned *via* Crediton, Tiverton and Wellington to Taunton, then moved south to Dorchester and Southampton. Here I found the inner tube of back tyre about done for, having carried me over 3,000 miles, and (considering the load) this was not a matter of surprise or complaint. My last day's run home on 26th September was 206 miles, *i.e.*, Southampton to Chichester, reaching there at 11.30 a.m., then to Brighton and London, reaching High Wycombe once again at 10.15 p.m., the machine climbing the Amersham Hill to my very door. During the tour I made four separate days' runs of over 200 miles each, the longest being from Grasmere to Watford, a distance of 264 miles. The total length of the trip was 2,172 miles. Weight of machine, 133 lbs.; weight of luggage, accessories, etc., 94 lbs.; weight of rider 13 st. 10 lbs.—192 lbs.; making in all a total weight of 419 lbs.

DR. GORDON STABLES cannot lay claim to originality in the determination he expresses in his weekly letter to the press, to fire at the tyres of motorists rushing at full speed past his caravan. Should he, however, carry his threat into execution, the victim will probably know how to deal with anyone guilty of such conduct.

THE USE OF OIL IN ROAD IMPROVEMENT.

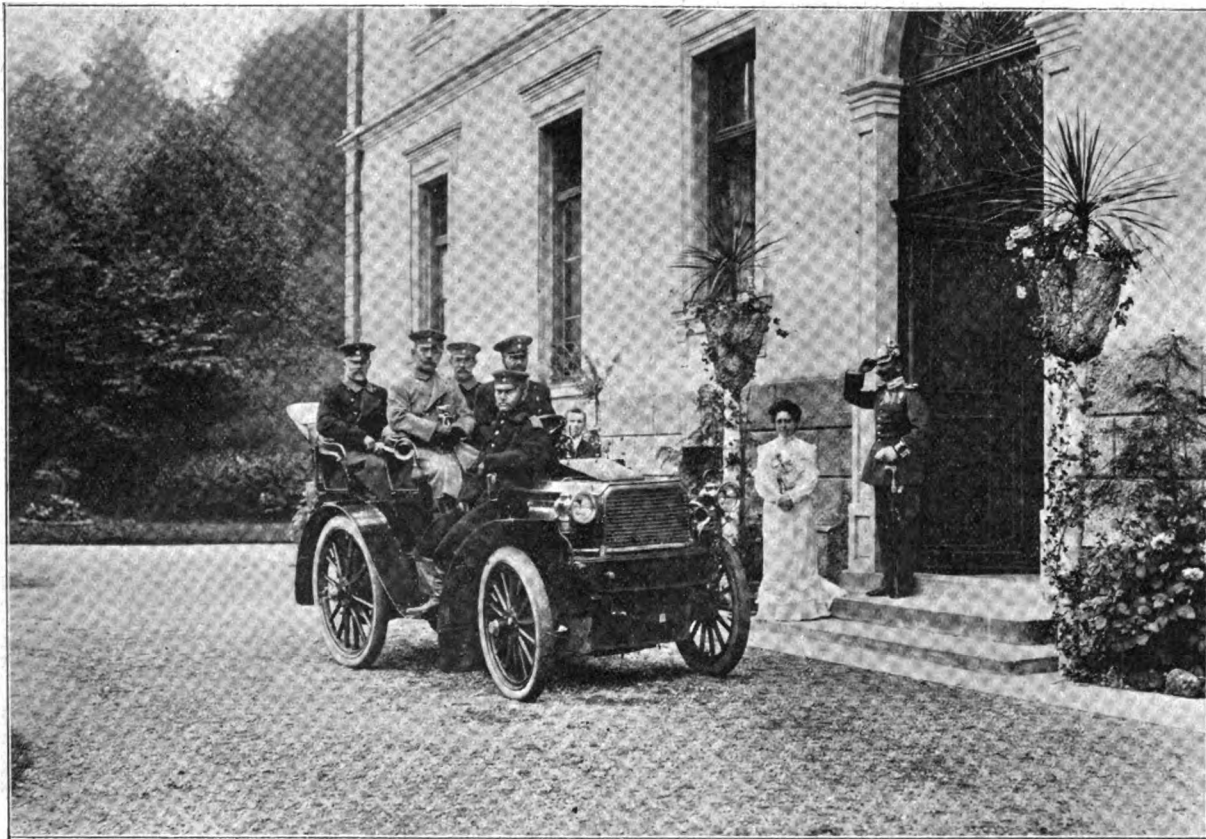
(Continued from page 622.)

BY JAMES W. ABBOTT.

THERE has been a very spirited controversy over the question, "Must oil be artificially heated to produce the best results?" Until within the past year the majority of the practical oiled road makers insisted that it must; but experience with oil at normal temperature (always spoken of as "cold oil") has resulted in increasing the number of those who advocate doing away with heating devices. It is universally conceded that the hotter the oil can be applied the more quickly it becomes absorbed and incorporated with the road material. Heat thins the oil and in-

rolled with a light roller. The purpose of this is to insure uniform consistency and a firm foundation. It should then be left undisturbed, if possible, until the water dries out. Many roads have been oiled and excellent results obtained without any wetting or rolling, but the practice described is the best where the facilities are obtainable.

A soil which after being wet tends under travel to pack firmly, but is still sufficiently porous to let water drain through, is ideal for treatment with oil. A clay that bakes and then pulverises into fine dust under the wheels will only give good results when some material is added, as explained later. After the road surface has become dry it is well, if feasible, to run a sharp-toothed harrow over it, so as to loosen it to a depth of three inches. The aim is to secure an oil crust three inches thick. If the road surface can be made to absorb oil to that depth, that is the simplest way to get the crust. If this surface



A MILITARY MOTOR-CAR IN BAVARIA.

In the recent military manoeuvres in Bavaria a number of motor-cars were used for the first time. The illustration shows a party of officers, including Prince Arnulf of Bavaria (seated to the right of the tonneau) leaving the Steingaden Castle of Count Durckheim for the scene of operations.

(Allgemeine Automobil Zeitung.)

creases its tendency to penetrate a firm road covering. The principal argument against heating is its cost. It requires special apparatus, and the process involves some expense. If the heating apparatus is stationary, the oil must go to it to be heated and hauled from it on to the road treated, no matter how far away. The tendency in oiled-road practice is, however, towards relying for heat upon the sun only.

When a road is to be treated it must first be prepared to receive the oil. It should receive a crown of about a half inch to the foot; on a sixteen-foot roadway this would leave each side four inches lower than the centre. Careful attention should be given to the drainage, so that water can quickly run off and not soak into the foundation of the road from the sides. The oil covering when finally made will be impervious to water, but if the foundation is water soaked it loses its firmness and ability to support the road surface under travel, and causes it to break through in spots. After the road has been properly shaped it should be given a thorough soaking with a road sprinkler and

is hard and will not readily yield to the harrow for a depth of three inches, the practice is to build it up by adding material after the oil is applied.

The next process is the putting on of the oil. If travel can be kept entirely off the road, then the full width should be finished before vehicles are allowed on it. If that is impossible, then a strip at a time must be treated, and travel meanwhile confined to the other strip.

The oil is put on by means of a longitudinal tank mounted on wheels like an ordinary sprinkling wagon. Four horses can readily pull one holding from 800 to 1,000 gallons. To the rear of this tank is attached the device which lets the oil out on to the road. Attempts have been made to use an ordinary sprinkling wagon, but with very poor success, as it has been found impossible to get any regulation in the discharge. When the tank was full it would discharge much faster than when it was partly full. There was a tendency also for the centre of the strip treated to get too much oil and the edges not enough. If

hot oil was used, the spray tended to cool it before it reached the ground.

In what is known as the De Camp machine the distributor proper is mounted on separate wheels and coupled to the rear of the tank wagon, the slip tongue being removed. The oil runs from the tank through a flexible hose. It has an oil reservoir and three sets of fingers. The first set makes furrows just ahead of the oil-discharging pipes. The second set of fingers (or curved teeth) covers up the oil, and the third set stirs up the combination of oil and dirt. There is also a drag to crush any globules or chunks which may tend to form. When the oil is being distributed, the second and third sets of fingers and the drag are raised from the ground by hooks. After the oil is distributed, this machine is detached from the tank, the slip tongue put in, and the machine dragged backwards and forwards over the oiled road until the oil has been thoroughly incorporated with the road material.

In other distributors, the oil is conducted from the tank by a forked tube into a large bore pipe about six feet long, so attached to the framework of the wagon that it hangs cross-wise of it and about six inches above the ground, just behind the rear wheels. The pipe has a number of openings on its under side through which oil can run out. These openings are uniform distances apart, in sets, and all controlled by valves which can be opened either by the driver or by a man who has a seat for the purpose on the rear of the tank. The various levers, cranks, connections, and fittings in all the machines are such as experience has suggested, and the machines have been evolved by degrees. By having the openings in sets, any width strip can be oiled which is a multiple of eighteen inches. Whatever form of distributor is used, the driver starts his team on a walk, the valves are opened, and the oil, running through openings so close together, reaches the ground in a sheet practically unbroken for the width treated. The aim is to regulate the flow so as to spread all the oil the ground will absorb.

The next process is to stir up the newly-oiled surface, and work the oil and road material together. How this is done with the De Camp machine has already been described. Other ways are as follows:—A sharp-toothed harrow, preferably the ordinary steel-lever kind, with the teeth slanted back, is dragged along and then across the road until further stirring is unnecessary. In Golden Gate Park men follow the distributor with rakes and stir the matter entirely by hand. Special machines called "stirrers," to be drawn by horses, are made, in which the teeth have an oscillating or cross motion when the machine is being pulled forward. Another machine, which is said to be especially valuable when the ground is cold or wet, is the Fitzgerald roller, provided with alternating rows of inch-square steel prongs six inches long.

If after the stirring process some spots appear sticky and others dusty, it shows too much or not enough oil has been used. Over the sticky places should be thrown some of the unoled road material and this stirred in with a hand rake. The dusty spots must be treated with more oil and stirred. The whole work should show uniform results. After twenty-four or forty-eight hours the road can be travelled over.

The practice above described is that followed when the material is sufficiently porous for oil to readily mix with it. If it is hard, like baked clay or macadam, and cannot be readily stirred, the practice is very different. For such conditions the oil must be put on when the road surface has been heated as much as possible by the sun. If the oil itself can be first heated, so much the better. In fact, the more heat there is in the oil, the ground, and the atmosphere when oil is applied, the quicker the results obtained, whatever process is used. Some of the oil will sink into the hard covering; the rest will remain upon the surface and must receive a coating of sand or fine gravel. The oiled crust which results from such treatment will be partially the top surface of the original road and partially the new envelope. This can still be further built up by another oiling and another layer of sand. This sand (or fine gravel or quite sandy loam) can be applied with a shovel by a man who rides on a load of sand

driven beside the oiled strip. Practice will bring considerable dexterity in throwing out sand in thin strips with a shovel.

(To be concluded.)

THE "SANDRINGHAM" COMBINED OMNIBUS AND WAGONETTE.

THE accompanying illustration depicts a 10-h.p. combined omnibus and wagonette which has lately been completed by Mr. Frank Morriss, of King's Lynn. The chassis is of the standard design, fitted with 10-h.p. balanced double-cylinder "Sandringham" motor. The lubrication of the latter is effected on a special system, whereby the oil is forced from a reservoir to a distributor on the dash by means of a mechanically-operated pump. Attention has also been devoted to the question of silence of the motor and vibration whilst standing. The engine is fitted with Mr. Morriss' system of governing, whereby the motor can be cut down whilst passing horses, or whilst the car is standing, to almost absolute silence. The governor is adapted to act on the exhaust valves of the engine. Instead of the usual fixed cams, the camshafts in the "Sandringham" motor are fitted with loose longitudinal sliding eccentric cams, which, when actuated by the governor, control the motor by varying the lift of the exhaust valves, and regulating the speed and power of the motor to exactly what is required by the user at any particular moment. The gearing is of the usual Panhard sliding-sleeve design.



giving four forward speeds and reverse. All journals in the gear-box are fitted with large wearing surfaces, and in every instance provided with self-lubricating boxes. Further, all end thrusts (including that of the clutch) are taken by ball bearings of suitable dimensions. The car has a neat external appearance, the body being painted a dark chocolate with yellow lines, and the wheels and under part yellow with black lines. Fixed on the car is an omnibus top, with railway carriage windows; this can readily be detached, converting it immediately into a wagonette. In front of the bus top is fixed a seat for three persons, and lower down there is a spare seat by the side of the driver, while another six persons may be comfortably quartered inside the car. Between the driver's seat and the body of the car is a specially-designed basket for carrying guns, etc. The car, which Mr. Morriss claims to be not only highly efficient but absolutely fool-proof, has been built for Mr. J. H. Richards, of the Castle Hotel, Downham, Norfolk, who is using it for ordinary hotel work and for conveying shooting parties. In the trials to which the vehicle was submitted three days after delivery, the efficiency of the transmission was well illustrated by the carrying of a load of thirteen passengers, in addition to the heavy omnibus top, a distance of 100 miles at an average speed of over sixteen miles per hour.

THE HAGEN PETROL MOTOR WAGON.

THE Hagen system of motor traction, which is being introduced into this country by Messrs. Alf. Dougill and Company, Limited, of Leeds, comprises an entirely novel arrangement of transmission gear, for which the makers not only claim great efficiency but that it combines most of the advantages

strongly to withstand heavy shocks. The fore springs are double elliptic and the axle works in horn plates. The hind axle has the usual single long elliptic springs. The artillery wood wheels are of 3 ft. 3 in. diameter at the front and 4 ft. at the rear, thus giving easy running over rough roads. The steering is controlled by a horizontal hand wheel, acting through a pinion and spur quadrant on to an Ackerman axle.

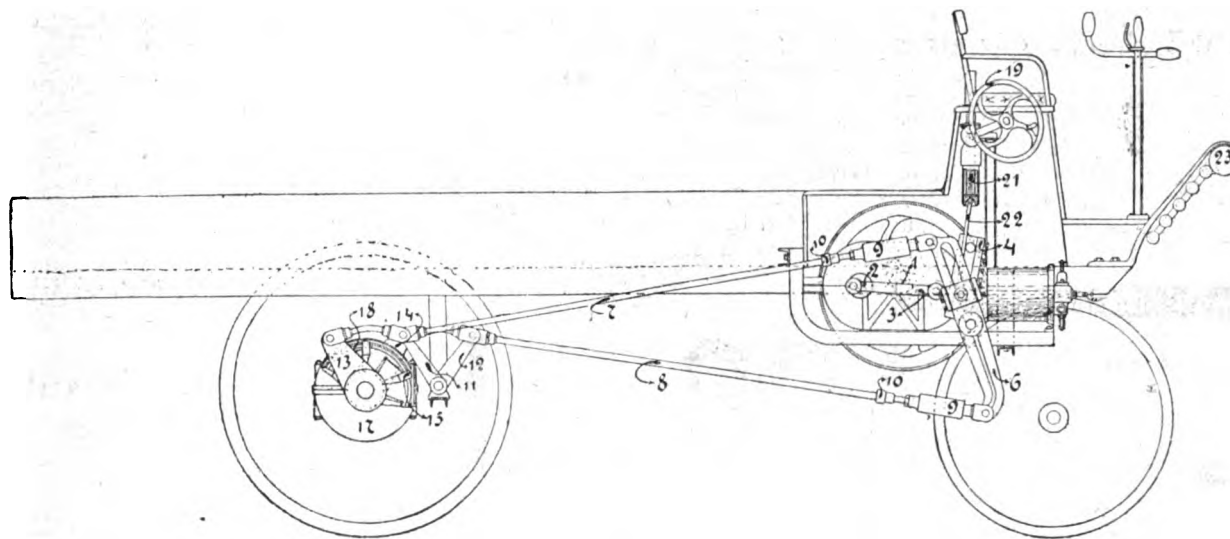


Fig. 1.—Sectional Elevation of Hagen Petrol Motor Wagon.

of steam traction with those that can be claimed for the petrol and paraffin motor. At present lorries and vans are being made in 2, 3, 5, and 7-ton capacity sizes, and, as soon as new works are completed, vehicles suitable for public service work will be constructed.

The lorry illustrated herewith in Figs. 1 and 2 is capable of carrying two to three tons and hauling a trailer. Its chief characteristics are strength, ease of running, flexibility of speed

The engine is of the horizontal type, and develops 7-b.h.p. at the slow speed of 450 revolutions per minute; it is easily accessible for examination and adjustments. The cylinder is 5½ in. diameter by 5½ in. stroke. The main frame is a steel casting, carrying the crank bearings and valve gear; to this bed is fitted a loose sheet iron cover with inspection hole. The cylinder, which is cast in one with the water jacket, is attached to the frame by four

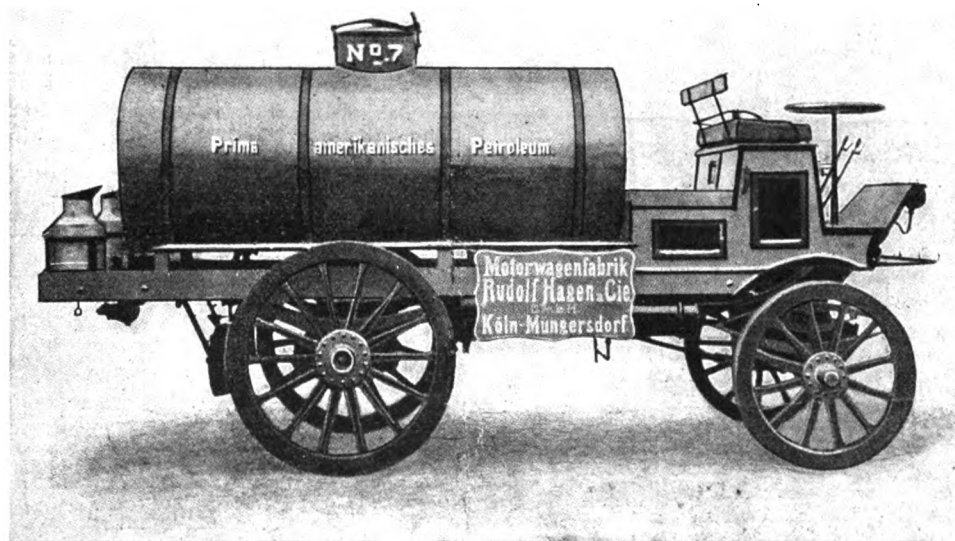


Fig. 2.—General View of the Hagen Petrol Motor Tank Wagon.

at constant power of engine, and the absence of vibration from the motor.

The main frame is constructed of channel steel stiffened with wood and steel plates. The single cylinder motor is bolted to the fore part of the framing, and, as the whole space occupied by the machinery is also used for seating room and tanks, the maximum amount of platform space is available for goods, the 2-3 ton lorry having an area of 58½ sq. ft. The axles are built

studs which are placed outside the jacket and also hold the cylinder cover and valves. The inlet valve is located directly over the exhaust valve and is worked automatically by the suction of the piston. No ports are formed by this method, the two valves being directly inside the combustion chamber. The exhaust valve is opened by a horizontal rocking lever actuated by a cranked lever and tension rod. The ignition is magneto electric; the magneto spindle works

directly on the ignition plug and is timed from the driving seat. The inlet valve is enclosed in a dome, the pipe to which conveys the mixture from the carburettor. The latter is of an extremely simple type. The spirit is fed by gravity from the tank, which is situated under the seat. The water circulation is maintained by a centrifugal pump driven by a belt from the crank shaft, the water passing from the cylinder to a radiator under the foot board. The water cooling is said to be so efficient that although only six gallons of water are carried, under half a gallon is consumed in ten hours' working. The fly wheel is massively built to reduce any vibration and give steady running, and in it is built the governor. The throttle is kept open by means of a taper "runner" which works against the flywheel. According to the position of this runner the throttle valve is closed or opened, the opening varying at the intermediate positions. The silencing of the exhaust is effected by a very large exhaust box consisting of concentric mufflers and a small egress for the escaping gases.

The transmission gear is entirely different from any present system, and is described briefly as follows:—The valve gear of the engine, which runs inside an oil bath, is built sufficiently strong to transmit the whole of the engine power. At the end of the valve shaft is a crank disc (2) to which is fitted a connecting rod (1), actuating a swinging lever (4) with a fixed stroke. This swinging lever is placed parallel to and alongside another swinging lever (6), pivoted in the centre and having rods (7 and 8) connected to the top and bottom of it. The motion is imparted to this second double-ended lever by a connecting block capable of sliding up and down, and according to its position the stroke of this second lever, and consequently the speed of the car, is varied between zero and maximum. This motion of the lever is transmitted to the hind axle by the two connecting rods (7 and 8) and the reciprocating motion is here converted to a rotary one by means of two ratchet clutches. The latter are strongly built, there being seven teeth in each, and as the ratchet tongues work in slides, radiating from the centre, the whole is free from wear or liability to jam. Along with this gear box (17) on the hind axle is a reversing motion, giving also a free position to the transmission. By this it will be seen that the actual transmission is free from gear wheels, chains, or belts, and at all times the engine is working at maximum power. All wearing parts are fitted with lubricators, and when travelling there is only one point to watch, i.e., the hand wheel controlling the speed. The wheel is at the driver's left hand, and when turned as far forward as possible in one direction the car is at rest, although the engine is running and all in gear; by turning the wheel gently backwards, the lorry starts slowly and easily, and the more the wheel is turned the faster the vehicle will travel until the maximum, twelve miles an hour, is reached.

Another special point to which attention may be drawn is that if, when going up hill, it is desired to stop, no brakes need be applied; by simply putting the transmission to zero the hind wheels are locked and no backward movement can take place.

A powerful brake acting on a band 6 in. wide, outside the differential, is operated by a pedal, while a hand lever operates tyre brakes on the hind wheels.

The whole vehicle is so designed that it can be handled by one man, and the motor, being easily started, can be stopped when necessary, to save fuel. If only a short stop is required, the engine can be left running at as slow a speed as 100 revolutions per minute. All the working parts are protected from wet, and the transmission gear is entirely out of the way, so that the vehicle can cross fords and muddy places without trouble.

With the immense fulcrum power that is obtained through the medium of the lever transmission, the makers claim that the vehicle will carry a load of three tons, on a give and take road, on a consumption of half a pint of petrol per h.p. per hour.

LORD WOLVERTON has been convicted at Perth of having driven a motor-car past a young horse when requested to stop. A fine of £5 was imposed.

LOCATION OF TROUBLES.

IT is an old maxim among petrol engine men that when the motor stops or refuses to work, the first thing to look after is the spark, or the ignition mechanism. A majority of all explosion engine failures are due to faults in the ignition, and of the rest most are due to defects in the gas-making apparatus, the carburettor. In nearly every case when an engine stops, it either does not get "mixture" or there is not a sufficiently hot spark in the combustion chamber, or no spark at all.

At present owners frequently find great trouble in locating a fault when their engine stops for an unknown reason, chiefly because there are no means of directly and absolutely verifying whether the motor is getting "gas" and whether a spark is produced in the cylinder. The occurrence of a spark can, of course, be ascertained with reasonable certainty by holding the sparking plug connection at some distance from the spark plug and turning the engine over by hand. But whether the engine is getting mixture cannot be made absolutely sure without removing connections.

In a case which came under our notice recently, remarks the "Horseless Age," the driver first tested the spark, but found it all right; then he opened a valve on the carburettor, from which some petrol flowed, which satisfied him that there was nothing at fault with the petrol supply, and he once more turned his attention to the sparking system. After about half an hour's fruitless effort to locate the trouble he sent for an expert, who discovered in a few minutes that the petrol tank was empty! Of course, there was still a little spirit in the bottom of the carburettor, but, being considerably below the normal level, there was not sufficient to form a charge of explosive mixture, and the engine stopped.

In experimental engines mica windows are sometimes placed directly over the sparking plug points, through which the spark in the cylinder can be directly observed. There appears to be no reason why such windows could not be regularly fitted to engines over the sparking plug, and also on the inlet pipe just outside the inlet valve. If spark and mixture could be directly observed many a tedious search for a fault might be saved.

WHILE at Southport we had the pleasure of a run on the new Siddeley light car, and found it to travel quietly and smoothly. Its finish and style is quite elegant.

MR. F. J. GLYNN has been elected secretary of the Motor Cycle Union of Ireland in succession to Mr. J. C. Percy, who has resigned owing to pressure of business.

FOLLOWING the example of the German Automobile Club, the Frankfurt Club held a 150 kilometre reliability run in the Lorschach Valley on Sunday last.

THE racer driven by M. Louis Renault in the Paris-Madrid race, and which secured the first place in the run to Bordeaux, has been acquired by M. Dannat, the well-known painter.

WHILE the King was journeying to Kempton Park on Saturday, his motor-car stopped on Stamford Bridge, Fulham. A delay of quite a quarter of an hour was caused ere the car was got going again.

THE Wolseley Tool and Motor Car Company, Limited, have just finished a 12-h.p. convertible wagonette and omnibus for the Czar of Russia. The wheels have, we understand, been shod with 3 in. Buffer tyres by the Sirdar Rubber Company, Limited.

A NEW system of lubrication for the bearings of axles has been introduced by the Lubricating Company. In the cap a small hole is provided into which fits a smaller cap which can be pressed down on a spring, thus allowing the lubricant to reach the desired parts. In this way the lubrication can be quickly and thoroughly effected, all danger of dust and dirt reaching the parts being entirely obviated.

HERE AND THERE.

THE Archbishop of Canterbury has been motoring with the Marquis of Londonderry.

MR. A. H. LEE, M.P., the new Civil Lord of the Admiralty, is a captain in the Motor Volunteer Corps.

FOLLOWING on the achievements of the 10-h.p. Duryea car in the Phoenix Park races in July last, the Duryea Company are naturally very proud of the success of their vehicle in the Southport trials. We give herewith an illustration of



the 10-h.p. car which succeeded in carrying off the cup in the class for touring cars costing between £200 and £400. The car covered the kilometre in 1 min. 7 1-5 sec., equal to a speed of over 33 miles per hour.

AT Portsmouth, last week, a motor-cyclist was fined 25s. 6d. for being drunk whilst in charge of a motor-bicycle.

MESSRS. HORSFALL AND BICKHAM, of Pendleton, Manchester, are now appointing agents for their Horbick car for next season's sales.

GOOD accommodation for motor-cars has been provided by Messrs. V. Andrews and Company, at the Red Lion Hotel, High Street, Dorking.

MESSRS. J. E. WHITTLE AND COMPANY, 41, Kingston Road, Portsmouth, are keeping a stock of petrol, oils and grease for motor-cycles and cars.

THE Glossop Town Council is making application to the Local Government Board for regulations prohibiting a speed exceeding ten miles an hour in the borough.

THE A.C.F., at the request of several manufacturers, has postponed the start of the Motor-cab and Delivery Van Competition from the 12th inst. to the 19th inst.

THERE is some talk of building a direct road for motor-cars between Ostend and Blankenberghe. At present the journey between the two places has to be made *via* Bruges.

PRINCE and PRINCESS ANDREW OF GREECE, after their marriage at Darmstadt last week, drove to Heiligenberg Castle, in the Grand Duchy of Hesse, by motor-car. The Prince drove, and the Princess Alice sat beside him. A mechanic accompanied the Royal couple.

M. FORESTIER, chairman of the Technical Committee of the French Automobile Club, has promised to read a paper at the A.C.G.B.I. on December 3rd, on the subject of "The Liquid Combustibles employed in Automobile Motors, their Mixture with Air and their Explosion."

THE American Daimler Motor Company has lately completed a 30-h.p. public service vehicle for use in Ecuador. The vehicle, which has seating capacity for eleven persons, is on Mercedes lines. A noticeable feature of the car is the wheel base, which is no less than twelve feet in length.

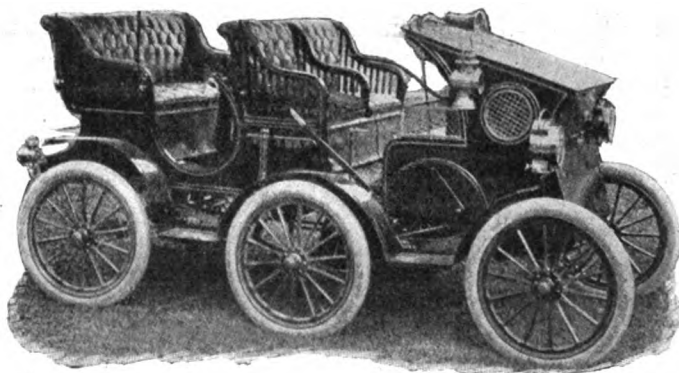
MESSRS. MANN AND OVERTONS inform us that their 12-h.p. Georges Richard car, No. 57 in the Reliability Trials held last month, has now been adjudged by the judges to have made seven non-stop runs instead of six, as first announced, and one stop of less than five minutes.

THE Aston Motor Accessories Co. has been registered with a capital of £2,000 to adopt an agreement with Messrs. B. G. Hodgson and H. C. Barlow for the acquisition of the business of manufacturers and dealers in motor-cars, motor-cycles, and accessories, now carried on by them at Aston Lower Grounds, Birmingham, as the A. V. Motor Accessories Co.

WHILE an employee at Messrs. Smith's motor-car and cycle works, Soho Road, Handsworth, was testing a new motor-bicycle an electric spark ignited some petrol which was escaping from the tank of the machine. The workpeople managed to keep the upper hand of the flames till the arrival of the Handsworth Fire Brigade, when the fire was speedily extinguished.

THE fact that Mr. Howard Swan's "Travellers' Colloquial French; a Handbook for English Speaking Travellers and Students" has run into seven editions is sufficient proof of its utility. The new edition has been enlarged and thoroughly revised, and, in addition to idiomatic French phrases, contains much general information of use to English and American visitors to France and Belgium. The feature of Mr. Swan's work is that against each phrase is given the phonetic pronunciation, so enabling those unacquainted with the French language to make themselves understood. To render the book of service to motorists, and to bring it thoroughly up-to-date, four pages of "phrases for automobilists" have been added, these dealing with matters likely to crop up at a garage. We may add that the book is published by Mr. David Nutt, of Long Acre, W.C.

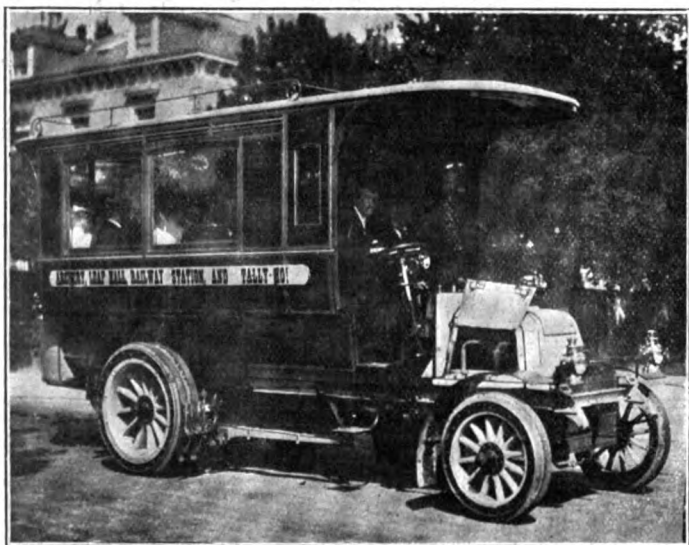
WITH the object of reducing the liability of side-slip or of eliminating it altogether, and at the same time increasing the comfort of riding, Mr. A. P. Broomell, of the firm of Messrs. Broomell, Schmidt, and Steacy, of York, Pa., U.S.A., has recently designed the novel vehicle shown in the accompanying illustration. As will be seen, the car is fitted with six wheels, the front and rear pairs of which are connected and move together in steering, while the middle wheels are the drivers. The central or driving axle forms a support for two sets of long semi-elliptic



A Six-wheel Motor-car.

springs, the outer ends of which are held by the front and rear axles. In other words, these springs, which support the body on equalising lugs, form the frame of the car, assuring, states the "Automobile," great flexibility and consequent easy riding. The wheelbase is 96 inches, the tread 62 inches, and the over-all length of the car 10 feet 8 inches. The car is driven by a 20-h.p. double opposed-cylinder motor, mounted in front within the vehicle body, and readily accessible after lifting the protecting hinged door forward. The transmission is of the planetary type, on the lines of that in the Oldsmobile, a central chain driving on to the differential mounted on the middle or driving axle.

THE members of the Farnham Urban District Council and the Haslemere Parish Council, having considered the proposal to petition the London and South-Western Railway Company to provide a motor-omnibus service between the two towns similar to that recently inaugurated by the Great Western Railway between Helston and the Lizard, have decided that the matter should be left to the discretion of the railway authorities. The route between Haslemere and Farnham would serve Shotter Mill, Hindhead, Grayshott, Churt, and Frensham.



The Eastbourne Municipal Motor Omnibus. (See last issue.)

Photo by)

(G. and R. Davis.

THE habit of the average boy of hanging on to the backs of vehicles of every description is a very common one. The other day William Thom, an Edinburgh lad, was hanging on to the back of a motor-car which was going along London Road. He stepped off in front of a cable car, and before the driver could even notice that he was knocked down. His right foot became jammed in the guard, and the car dragged him along several yards. Thom was taken to the Royal Infirmary, where it was found that the ankle was very severely injured.

ONE motor-car and one motor-cycle were imported into Grangemouth from Christiania during August.

DURING the coming session the Engineering Society, in connection with the Birmingham University, will pay a visit to the works of the Lanchester Engine Company, Limited.

FROM the Whitney Manufacturing Company, of Hartford, Conn, U.S.A., comes a bundle of literature relating to the Whitney motor-car chains, which are largely used in America. The Whitney Company is endeavouring to institute a series of chain standards for the trade, and for the 1904 season proposes the following four sizes of roller chains :—

Pitch.	Dia. of roller.	Width of roller.
1 in.	$\frac{5}{8}$ in.	$\frac{1}{2}$ in.
$1\frac{1}{4}$ in.	$\frac{3}{4}$ in.	$\frac{3}{4}$ in.
$1\frac{1}{2}$ in.	$\frac{7}{8}$ in.	$\frac{7}{8}$ in.
2 in.	1 in.	1 in.

MR. D. M. WEIGEL was stopped on Sunday by Sergeant Jarrett on the Guildford road. The sergeant told the motorist he was going too fast, which Mr. Weigel at once admitted. On the sergeant enquiring why, he replied that it was ridiculous to ask anybody to do twelve miles per hour, and if the sergeant were a motorist he would comprehend it. Sergeant Jarrett replied he had noticed that Mr. Weigel was always a very careful driver through towns and villages, wished him a pleasant good evening and told him he would not hear any more about it. Naturally, Mr. Weigel is of the opinion that Sergeant Jarrett is a much-abused person.

ROADS in the Windsor and Egham districts are to be treated with Westrumite.

ON Thursday next, the 22nd inst., the Leicester Automobile Club will hold a run to Market Bosworth, Hinckley and Earl Shilton.

ELSEWHERE we give the new regulations of the Marine Department of the Board of Trade with regard to the coastwise carriage of petrol.

MR. J. D. HILL has retired from Messrs. John D. Hill and Company, and in future the business will be known as The Consolidated Automobile Company. It will be carried on under the management of Mr. Allan C. Instone.

STRANGE as it may seem, Gabriel, who drove the Mors racer in the Gordon Bennett race, has only just received his *permis de conduire* for a motor car. For over four years he has been driving high-powered cars with only a *permis* for a motor-tricycle, but has never been stopped by the police.

THE performance of the Hon. C. S. Rolls in covering the flying kilometre on a 110-h.p. Mors motor-car at Welbeck on Monday in 26 2-5 secs., or 84.68 miles an hour, is stated to be a world's record. The record speed of eighty-six miles an hour attributed to Baron de Forest over the kilometre during the Irish motor-car fortnight was incorrect, the Baron's actual time being 26 3-5 secs., or only 84.04 miles an hour.

FOLLOWING the example of the Winton Company, the White Steam Car Company have started the publication of a monthly bulletin, a copy of the first number of which has been sent us. Naturally it is devoted to the doings of the White steam car, and in addition to details of the factory, gives brief accounts of tours that have been successfully carried out on these vehicles by private motorists during the past summer, and also of the various races in which the White has figured. The bulletin is neatly got up, and contains a number of interesting illustrations.

WE have all experienced difficulty in keeping out rain when we are meeting it at a considerable pace, say a trifle over the legal limit, and it has been found by experience that waterproof garments must have no opening forward admitting wet. Mr. T. H. Holding, who has invented many garments of an effective kind for motoring purposes, has now brought out the "Car-Poncho" illustrated in the accompanying sketch. Whilst there is an opening admitting the head, it is so skilfully devised that it will not admit rain, no matter how hard



it drives. But there is a more important provision in the garment, viz., an elastically constructed neat fitting collar rising well above the ordinary white collar, which has an interior of soft absorbent felt of very thin texture, so that it is difficult for wet to run down the neck. The collar can thus be kept clean. He has also invented for the same garment a plan of preventing the pressure on the wrist while closing it in. It is ingenious and effective, and will last. The "Car-Poncho" is being manufactured in many materials.

MOTOR-CYCLING NEWS.

A VERY interesting reliability trial was carried out by the Motor Cycle Union of Ireland on Saturday last. The trial was in the nature of an inter-team contest between the Ulster and Dublin centres of the Union, and took place between Belfast and Dublin, the distance being about two miles short of one hundred. The entry was unrestricted, but the best three performers of each of the teams counted, and the team having the best aggregate score won. As the contest started from Belfast, the Northern centre had the strongest numerical representation, starting twelve men to Dublin's five. The performances on the whole were excellent, eleven of the seventeen starters getting through. The regulations laid down a minimum speed of fifteen miles per hour and a maximum speed of twenty miles, and those who kept within these limits were awarded full marks, provided they made no involuntary stoppages on the journey. All of the finishers were within the speed limit and the marks lost were for stoppages, five marks being deducted for each stop. Two men made non-stop runs, six only one stop each and of the remainder only one stopped more than twice. The placings, times, and marks lost were as follows:—

	Hrs.	mins.	secs.	
R. W. Ireton (Riley)	...	4	59	50 ... lost no marks.
C. B. Franklin (F.N.)	...	4	59	50 ... " five marks.
T. Ireland (Humber)	...	5	3	30 ... " "
A. Summers (Triumph)	...	5	10	50 ... " "
J. Stewart (Centaur)	...	5	16	20 ... " "
T. E. Denby (Excelsior)	...	5	17	30 ... " "
P. S. Brady (Centaur)	...	5	18	50 ... " "
T. Mallon (Quadrant)	...	5	18	50 ... " three marks.
H. A. Evans & T. W. Murphy (Singer Tandem Tri.)	...	5	28	10 ... " ten marks.
J. Holden (Meteor Rover)	...	5	30	15 ... " "
F. McKee (Werner)	...	5	18	50 ... " fifteen marks.

Also competed, C. G. Grey, H. S. Huel, W. J. Forsythe, H. Strain, A. J. Thompson, and Bell.

The placings in the team contest were as under:—

Ulster centre, lost eight marks, first; Ireton, none; Mallon, lost three; Ireland, lost five.

Dublin Centre, lost fifteen marks, second; Franklin, none; Summers, lost five marks; Evans and Murphy, lost ten marks.

Mr. A. Williamson and Mr. H. J. Shinn acted as time-keepers at Belfast, and Mr. F. J. J. Glynn at Dublin.

WE regret to hear that owing to so few members being willing to participate it has been found necessary to abandon the Motor Cycle Tour from Land's End to John o' Groat's which was proposed by the Cyclists' Touring Club.

ON Saturday last, on the Palmer Park cycle track, Reading, under the auspices of the local automobile club, Messrs. Starley and Co., Coventry, gave a demonstration of their motor-bicycle fitted with worm drive and two-speed gear. There was a large assembly of interested spectators, including the following, who also tried their machines on the track:—Messrs. E. P. Collier, J.P. (2½-h.p. "Bat"), J. V. Moinet (2½-h.p. "Bradbury"), Dr. Foster (2-h.p. "F. N."), A. E. Newton, Hon. Sec. (2½-h.p. "De Dion" tricycle) A. Phillips (1½-h.p. "Royal Enfield"), Dr. C. Truman (2-h.p. "Clement Garrard"), F. Gale (2½-h.p. "Gaelic"), Pennell (2½-h.p. "Excelsior"), Pennell, jun. (2½-h.p. "Riley").

AT the Handsworth Police Court, Dr. George Adamson, of 150, Birchfield Road, Handsworth, was fined for keeping a carriage without a license. David Newlands, Inland Revenue officer, stated that on July 23 he saw defendant and a lady on a motor-tricycle. When spoken to about not having taken out a license, defendant admitted that he had had the machine three months. Defendant added that he was testing the tricycle for the Rex Motor Manufacturing Co., Coventry, to whom it belonged. Defendant told the magistrates the machine was his own invention, and he had no intention of evading the license.

A HILL-CLIMBING contest under sealed handicap was held on Friday, the 9th inst., in connection with the Herefordshire Automobile Club, on the Hereford side of Dinmore Hill, which is 1½

miles long, with an average gradient of 1 in 12. It was open only to the motor-cycling members of the club. The time was taken from a flying start and the timing was done by Messrs. Margrett (start) and Townsend (finish). No pedalling was allowed, and observers were posted to take the number of any competitor who broke this rule. Owing to the unsettled weather only ten competitors attempted the climb. All managed to do it without pedalling, though it was thought doubtful if all would negotiate the nasty corner half-way up without slackening, especially as the road was greasy. The following were the results:—

Competitor.	Machine.	Engine and h.p.	Time.
Hall...	Quadrant	Quadrant 3	2 46
Marriott	Marriott	De Dion 2½	2 52
Ekins	Minton	Minerva 2	2 57
Groom	Excelsior	M.M.C. 2½	2 58
Simpson	Triumph	Minerva 2	3 6
Godwin	Coventry Eagle	— 3½	3 19
Langford	Rex	Rex 3	3 28
Passey	Victor	Minerva 2	3 41
Weale	Ariel	Minerva 2	3 53
Chave	Excelsior	M.M.C. 2½	3 59

MR. A. B. LITTLEWOOD, of Nottingham, records how, when on his holidays—in Norfolk—this summer, he had the honour of driving for a considerable distance on his motor fore-



Ready to Start.

carriage tricycle a lady who will be 103 at the end of the year—probably the oldest inhabitant of these islands who has ever enjoyed an automobile run.

A NEW V-section belt for motor-cycles, made on their "Balata" principle, has just been introduced by Messrs. R. and J. Dick. It is claimed that the belt is not affected in any way by atmospheric variations or wet, and that it does not stretch.

THE result of the Motor Cycling Club's 100 miles non-stop test for two seated motor-cycles with two or three wheels, held on the 12th ult., has just been made known. It will be remembered that out of ten starters five completed the run. Mr. A. C. Wright, on Ormonde tandem, and Mr. A. W. Hacking, on Ormonde and side-carriage, divide the main award, both these riders having completed the distance without a stop, and within the limit of the speed provided by the rules. Messrs. Lord, Johns and Hooydonk will also receive medals, each having completed the distance as a non-stop, but slightly in excess of the limit of speed, the maximum pace allowed by the rules being 17 miles per hour.

THE New York Motor-Cycle Club has, by general consent, instituted a system of small fines for lapses on the part of members participating in club runs. Failure to start to time means a penalty of 10 cents, running away from the party entails a fine of the same amount, and not stopping when a halt is ordered, 5 cents. The funds thus accumulated are to be used in helping to provide refreshments at the club's bi-weekly "talks," during the winter season.

CORRESPONDENCE.

FITTING A RADIATOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I shall be glad to have the opinion of any of your readers as to the practicability of attaching a radiator to my 3½-h.p. International Benz car. At present the cylinder is cooled by water from a tank at the side of car and under the back seat; this holds a little over two gallons and is evaporated after about ten or fifteen miles, and I thought if a radiator could be placed in the front it would be much more effective than the present system.—Yours truly,

NOVOCASTRIAN.

ACCUMULATOR QUERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of your readers tell me if there is any way of preventing motor batteries from discharging themselves suddenly? Some weeks ago I was about to make a tour and had my batteries newly charged, each pair showing 4.4 volts. The night before starting I tested them again, and, although it had not been used at all, one was absolutely empty. It was afterwards sent to the makers, who said it could not be repaired and that it had been badly treated. I have no idea how a battery can be badly treated, as it had not been knocked about in any way.

Last week the other pair went in exactly a similar way. They had run about 200 miles since charging, on September 8th, stopped suddenly

A NEW USE FOR OLD TYRE COVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to the Comment in your last issue entitled "A New Use for Old Tyre Covers," I think I have a better way of saving money and covers—at least my way has proved a success so far, after driving now over three years and done 20,000 miles on different makes of cars, such as Panhards, Daimlers, Napiers, and Mercedes. My method is as follows:—After a cover has been worn down to such an extent as to render it unsafe for further use on the wheels as regards punctures and gashes by sharp flints, I replace it with a new cover, and when gashes or big cuts make their appearance in the tread of the new cover, I take the old one and cut it into sections from about five inches to nine inches in length, according to the bad place on the cover already in use. I then take one of these sections and cut away about two inches off each side (where the rim holds it), and then bevel the edges down all round so that it fits comfortably inside the cover without pinching the inner tube. In the case of a large cut, the first thing I do is to let out all air, slip off the cover opposite the cut, pull out the inner tube for about two feet, then put in the section of old cover, making sure it goes well home on the opposite rim. The inner tube is then replaced and slightly inflated, and the cover carefully replaced on the rim with the tyre lever. This piece of old cover will keep out water and dirt better than any inside cover patch I have yet seen and used. Not only so, but a good speed can be kept up, and at least 200 miles can be done on it without further fear of the hole getting larger. I claim that a whole old outer cover can be put in in this way, without showing it when the car is at a standstill; the weight is not very much increased, and the engine will "pull" almost as well with as without it. The method has also the advan-



Photo by]

The Reliability Trials. The scene in Cecil Square, Margate.

[Mr. C. Frinell.

on the road, and on testing them next morning were quite empty. Neither of the batteries have been in use a year, and the car has only run 3,000 miles.—Yours truly,

H. J. B.

THE MOTOR-CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In my copy (1895) of Stone's Justice's Manual, page 428, under "Highways—Width and Repair," the following occurs:—"The (District Council) to make, support, and maintain every public cartway leading to any market town twenty feet wide at the least—if the ground between the fences will admit thereof (5 and 6 Will. IV., c. 50, s. 80).

Unless repealed, here seems a rod for obstructive local bodies. Perhaps some legal reader who has the complete Act will explain further. I enclose my card, and remain, Sir,—Yours truly,

A COUNTY J.P.

PREVENTING SIDE SLIP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The idea of Mr. E. S. Woolf in your last issue is clever but open to objection.

For instance, a gentleman would prefer that mechanical street cleaning be performed by the proper persons—the authorities; but the greatest objection is that, like every side slip preventing device, it is a tinkering with an effect, instead of righting of a cause.

Why not tackle the wrong principle of driving the rear wheels, transfer the drive to the front wheels, and where is side slip?—Yours truly,

ALF. C. WRIGHT.

tage that it does not show the signs of its use on a wheel as the hide gaiters do by wearing off the paint. The sections cannot slip or get lost in running as do gaiters, for the greater the pressure of air in the inner tube the tighter are they fixed. I am sure the method I describe will effect a great saving in cover troubles, and that M. Paul Meyan will find this way a much better one than that which he suggests.—Yours truly,

W. G. CORKE.

THE HORSE POWER QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In looking through the list of entries, in the recent 1,000 miles car trials, one cannot help noticing the difference in the cylinder capacity of the various cars as compared with the reputed h.p. For instance, a car with a single cylinder engine of 100 by 120 mm. is rated as 9-h.p., while a car with four cylinders, each 100 by 130, is rated as 14-h.p., whereas, reckoned on the same basis, it should be nearer 40-h.p. (a slight difference). Again, a single cylinder engine of 88 by 110 is entered as 6½-h.p., while a car with four cylinders, each of precisely the same size, is rated as 12-h.p., instead of 26-h.p. (by comparison) and yet another car with only two cylinders the same size (obviously half the power) is listed as 16-h.p. Two other cars with two and four cylinders (each of the same size) respectively are given as both developing the same h.p.

Does this not prove that the present system of calculating the horse-power is absolutely ridiculous and misleading? Why does not the Automobile Club establish a standard of h.p. calculated on the basis of cylinder capacity, and insist on all manufacturers advertising the h.p. on these lines?

Taking the average cylinder capacity of the cars run in the 1,000 miles trial, it will be found to be 183 cubic centimetres per h.p., yet one car has a capacity of only 103 cubic centimetres per h.p., while another shows no less than 415. Obviously the purchaser of one is not getting full value for his money, while the purchaser of another is getting a monster in disguise. Would the purchaser of a reputed 12-h.p. car, buy it if he knew it to be nearer 40-h.p.

The calculation of h.p. should be based on a cylinder capacity of 175 to 200 cubic centimetres per h.p. The power thus arrived at could be described as theoretical horse power (t.h.p.), capacity horse power (c.h.p.), or some other suitable term, to distinguish it from brake, indicated, or nominal h.p. If this standard were adopted by the Automobile Club and they were to recognise no other terms of power calculation, it would soon come into general vogue, and I am sure it would be to the advantage of both manufacturer and public alike. It would also tend to induce manufacturers to turn their attention to reducing weight and introducing more efficient means of transmission, so as to get the best out of their cars for a given amount of power. As it stands at present, if a maker finds his cars are too heavy, or his gears absorb an abnormal percentage of power, he has only to understate his horse power, and thus have a reserve of power to overcome these delinquencies, and still he develops his nominal horse power at the road wheels. Thus, one maker may have a 12-b.h.p. engine and get 10-b.h.p. at the road wheels, while another maker may have an 18-b.h.p. engine and only get the same b.h.p. (10) at the road wheels, through inefficient transmission, but the best maker, by understating his h.p. and calling it 10-h.p. gets the pull over the first maker who correctly states his h.p. as 12.

Now if some new standard were established, based on cylinder capacity, as suggested, and only this standard recognised in all races, hill-climbs, trials, etc., it would be much fairer all round.

Some such reform as this is greatly needed and should be introduced at once, before the automobile industry assumes too large dimensions to be dealt with.—Yours truly,

DOUGLAS S. COX.

MOTOR HANSOMS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Recently there was considerable publicity given in the newspapers as to a fleet of fifty motor hansom cabs being placed on the streets of the metropolis. Some cabmen were alarmed somewhat, but the older whips were not disturbed, for the report is one that every now and then causes a flutter of excitement in the press. We are still waiting for those hansom cabs, which would enable us to leave the barricades with which some of the main arteries of traffic are now disfigured and get to our destinations by bypaths and narrow ways.—Yours truly,

WAITING.

OUTER COVERS FOR TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your last week's issue you give a paragraph under the title of "A New Use for Old Tyre Covers," in which is described the experiences of M. Paul Meyan during his automobile tour through Italy, and the device he adopted of protecting his outer covers by fixing over them other outer covers of larger dimensions. We beg to inform our readers that this device, to which we have given the name of "Upper Covers" which are securely held by "Upper Rims," is one of the Wilkinson patents, and is the property of our company.—Yours faithfully,

THE WILKINSON TYRE AND TREAD CO., LIMITED.

MR. W. E. HUDSON writes:—From letters in previous numbers of your paper, I notice complaints are made of excessive charges for replacements of parts of cars. As generous treatment by firms is worthy of recognition, I should like to state, for the benefit of others, my contrary experience of the Swift Motor Company. Whenever I have occasion to write them, any parts required are sent off promptly, whilst the charges are most moderate.

THE COASTWISE CARRIAGE OF PETROLEUM SPIRIT.

THE Marine Department of the Board of Trade has recently issued the following notice to shipowners and shipmasters:—

"The Board of Trade are advised that petroleum spirit gives off a highly inflammable gas at all times, and that the holds or vessels in which it is stowed become quickly charged with an explosive atmosphere which passes by diffusion through wooden bulkheads into the adjoining spaces below deck, and that any light or fire coming into contact with this atmosphere will cause an explosion probably attended with disastrous results.

The owners and masters of vessels carrying petroleum spirit should therefore take special precautions against smoking and the use of lights or fire of any kind when the cargo is being loaded and unloaded, or while the hatches are off or any deck openings are uncovered, and they are reminded that the risk from the inflammable nature of the cargo does not cease when the loading is completed, but continues during the subsequent voyage of the vessel.

Attention has also been called to accidents which have occurred to certain vessels engaged in carrying petroleum spirit in wooden barrels coastwise, and the Board of Trade are advised that, in order that this trade may be carried on with greater safety, the following regulations should be observed:—

(1) In all ships, except those which are specially built for the carriage of petroleum spirit, it should be contained in metal packages of a suitable character, such as steel barrels or drums, instead of in the wooden barrels at present largely used for the purpose.

This regulation will not apply to consignments of the spirit when carried as a deck-load and so stowed as not to come within the meaning of "improper loading." In such cases care should be taken that the barrels are in good condition.

(2) The holds of vessels carrying the spirit should not be ventilated by removing the hatches during the voyage. Proper ventilators should be fitted, extending to the bottom of the hold, and these should have large cow heads, the openings being covered with fine brass wire gauze. All ventilation in the crew spaces should be carefully attended to and kept open.

Petroleum spirit cannot be carried without danger in wooden vessels or barges having forecastles or other cabins below deck, it being impossible to ensure that wooden bulkheads will be impervious to petroleum vapour, as they are always likely to allow this vapour to penetrate to the space beyond, especially in dry weather.

It follows from the above that only iron or steel vessels and barges should be used for the carriage of this cargo, and that they should be fitted with perfectly water-tight bulkheads without any openings. Where, however, there are bilge sluices in the bulkheads, these should be kept closed as long as any petroleum is on board the vessel.

The above regulations refer to petroleum within the meaning of the Petroleum Acts, and therefore include any liquid which is produced by distillation from petroleum, shale, or coal, and flashes at a temperature of less than 73 deg. F. as ascertained by the first schedule to the Petroleum Act, 1879, such as benzoline, gasoline, petrol, naphtha, petroleum spirit, lythene, etc., etc."

CLUB NEWS.

WOLVERHAMPTON.

ON Saturday the Wolverhampton Automobile Club had a run to Newport under the captaincy of Mr. T. Cureton. On the 24th inst. a hill-climbing competition will be held at the Hermitage, Bridgnorth.

YORKSHIRE.

THE first smoker of the winter season of this club was held on Thursday week last, at the new headquarters, Great Northern Hotel, Leeds. The trophy presented by Mr. Kirk, and the cup given by Mr. Winn to the club for competition amongst the members were much admired. The former was won by Mr. Walter Jackson and the latter by Mr. E. Faiers, at the recent speed trials at Wentworth Woodhouse. Gold medals were also presented to the drivers of the first and second cars in each class.

SHEFFIELD AND DISTRICT A.C.

ON Saturday the Sheffield and District A.C. spent a most enjoyable afternoon at Sickleholme, where they happened on a party of influential



A Sign of the Times. "Please, I want a copy of 'The Motor-Car Journal,'"

Derbyshire gentlemen, who, evincing great interest in the bigger vehicles, were taken for several short runs. Amongst the members driving cars were Messrs. E. F. Coupe, 24-h.p. Darracq; J. H. Pickford, 10-h.p. Wolseley; W. Watts, 6-h.p. Humber; Jas. Barber, 12-h.p. Belsize; J. E. Evans, 12-h.p. Darracq; S. E. Fedden, 6-h.p.; A. F. Fletcher, 3-h.p. quad; J. T. Thompson, 3½-h.p. Humber; T. G. Revill, 4-h.p. Boyer; Brook Shaw, 6-h.p. De Dion; Percy Thompson, 8-h.p. M.M.C. The motor-cycle section was represented by Messrs. A. T. Dewhurst, W. James, and F. B. Cawood (hon. sec.).

FURIOUS DRIVING.

COURT.	DEFENDANT.	ALLEGED SPEED, M. P. H.	RESULT.
West London	Viscount Ingestre, Regent's Park	27	£5, etc.
Spalding	H. Sewell, Hyde Park, W.	—	£2 10s.
Chichester ...	J. D. Foster, Emsworth	18	£2, etc.
Worthing ...	*J. Leonard, Brockley, S.E.	30	£3, etc.
"	L. Wagner	—	Warrant issued.
Grantham ...	F. H. Anderson, Lincoln's Inn Fields, E.C.	21	£5, etc.
"	J. Downie, Glasgow	20	£5, etc.
"	W. Drury, Herne Hill	20	£5, etc.
"	C. Adams, Jermyn Street, London	25	£5, etc.
"	"	23	£5, etc.
"	A. Baker	25	£5, etc.
Stratford-on-Avon	A. E. Crowdy, Birmingham	32	£2, etc.
"	T. E. Aveling, Birmingham	25	Dismissed
Haywards	H. Hunter, Paddington	25	£4, etc.
Heath	*H. F. Hollman, Lewes	30	£2, etc.
"	A. Fentiman, Kingston-on-Thames	25	£4, etc.
"	L. Vickers, Limsfield	28	£4, etc.
"	F. Mills, Brighton	28	£5, etc.
"	Capt. A. Hill, Bracknell	26	£10, etc.
"	R. Snelling	28	£5, etc.
Reading	H. Vincent, Reading	22	£1, etc.
"	Mrs. Adams, Regent's Park	20	£1, etc.
"	Dr. Stansfield	20	£1, etc.
"	W. Johnson, Winchfield	19	£1, etc.
"	W. Norman, Kingston-on-Thames	20	£1, etc.
"	F. P. Ford, Maidenhead	22	£1, etc.
"	G. R. Miller, Reading	18	£1, etc.
"	G. H. Wylee, Ilfracombe	19	£1, etc.
Doncaster ...	H. A. Burton, Nottingham	30	£7.
Uckfield	H. Lingel, Wimbledon	—	£5, etc.
"	J. Underhill, Croydon	—	£2, etc.
"	A. Petro, Lancaster Gate, W.	—	£5, etc.
"	W. Turpin, Willesden	—	£2, etc.
Windsor	Baroness Campbell von Laurentz, Windsor	—	£5.
Midhurst	*W. C. Elms, Putney	18	7s. 6d., etc.
"	*A. H. Connell, Aldershot	21	7s. 6d., etc.
"	H. Chamberlain, Ennismore Gardens, W.	18	£1, etc.
Sheffield	F. G. Smith, Sheffield	—	7s. 6d.
Oakham	J. Bullough, Perth	30	£5.
Woking	*E. C. Baker, Staines	15	£1.
"	F. J. Stockham, Pimlico	22	£3.
"	W. L. McBride, London	24	£3.
Epsom	G. Westall, Shepherd's Bush	30	Dismissed
"	*N. Clough	23	£1.

* Indicates Motor-Cycle Cases.

At the West Riding Court, Frederick G. Smith, of 420, Glossop Road, Sheffield, was summoned for driving a motor-car at a rate exceeding twelve miles per hour, on the 24th September. On that date defendant was seen by Police-sergeant Bellis driving a motor-car between Moscar Top and Sheffield, and coming in the direction of the latter place. Bellis timed him, and upon discovering that he was travelling at a higher speed than twelve miles an hour, he ordered him to stop, and defendant complied. Defendant admitted travelling over the speed allowed, but explained that he did so because there was a straight road before him and no traffic was near. The Chairman remarked that it was only a technical offence, and defendant would be fined 7s. 6d., inclusive of costs.

Mr. F. E. E. STWOOD, the Chairman of the Woking County Bench, has declared that the local magistrates place full reliance upon the timing of motorists by the well-known Sergeant Jarrett.

GEORGE WESTALL, engineer, of Shepherd's Bush, was summoned at Epsom for driving a motor-car on the Leatherhead Road, Chessington, at a greater speed than twelve miles an hour, on August 30th. P. C. Knappe and another constable said that defendant covered a quarter of a mile in

thirty seconds, a rate of thirty miles per hour. Defendant called two motor experts to prove that the car was a slow one, incapable of travelling at a higher possible rate than fourteen or fifteen miles an hour. The Chairman afterwards said that, in the face of the expert evidence, the Bench felt they must dismiss the case. The police no doubt acted to the best of their judgment, but probably made a mistake.

Mr. F. B. ARMSTRONG, summoned for driving a motor-car to the danger of the public, at Liverpool, offered a novel defence. Police-constable Connell stated that in Renshaw Street on the 1st inst. the defendant drove a motor-car in a manner that was to the public danger. He did not keep to his proper side of the street, and, passing an electric tramcar on the wrong side, knocked down the tramway pointman. Mr. Armstrong said he was receiving lessons in motoring from an expert, who was in the car with him at the time; and it was in obedience to the expert's orders, in consequence of another car being in the way, that he took the side of the street he did. He was going very slowly. Alderman F. Smith said it was a very serious thing to knock down a man with a motor-car, and the bench must mark their sense of the defendant's error of judgment by imposing a fine of 5s. and 4s. 6d. costs.

A FURTHER sequel to the hill-climbing contest which took place at Sunrising in August has been the hearing at the Stratford County Police Court of cases against motorists, when Mr. Albert E. Crowdy, of Birmingham, was fined £2 and cost for driving over twelve miles an hour. The adjourned case against Mr. T. E. Aveling, of Birmingham, hon. secretary of the Midland Automobile Club, was also taken, Police-sergeant Street stating that they were going over twenty-five miles an hour. Mr. Johnson, for the defence, said the police had made an error, and had timed another car instead of theirs. Defendant said the gear lever was at the second speed, and with both cylinders running the car could not do more than 15½ miles. Mr. Jones said the evidence was so conflicting that the case would be dismissed. The magistrates did not impute bad motives to either side, but a mistake had been made.

POLICE TRAP.

In the village of Theale (Berkshire) the police have a carefully devised trap, in which they succeeded in making a good haul a few days ago.

CLAIM FOR DAMAGES.

At the Coventry County Court, Mrs. Cleaver has claimed from Sandell Stevens, of Earlsdon, £20 as the value of a King Charles spaniel, which was said to have been run over by the defendant's motor-car in Queen's Road on August 11th. The jury thought the defendant guilty of negligence, and assessed the damages at £5, for which amount judgment was entered.

LORD BALCARRES, M.P. for the Cherley division of Lancashire, who is seeking re-election on his appointment to the Government, is visiting his constituents on a 10-h.p. Cottareau car, being driven by Mr. H. H. Timberlake, a Wigan motor agent.

FROM the Gordon Motor and Cycle Company comes a neatly-got-up booklet descriptive of the "Gordon Miniature" car they have recently introduced. This is a little two-seated car fitted with 6-h.p. engine and two speeds, which has been produced to meet the demand for a popular-priced vehicle. Illustrations are given showing the general arrangement of the chassis and the outward appearance of the car.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.


VOL. V.]

LONDON, SATURDAY, OCTOBER 24, 1903.

[No. 242.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE provincial automobile clubs are likely to play an important part in the development of the industry and the popularisation of the pastime. They have maintained useful programmes during winter and summer months and are as representative of the motorists of the various localities as they well can be. Hitherto they have borne the strain of affiliation with the A.C.G.B.I. without much demur, but it is now felt that the trend of opposition will be from the central to the local authorities and that they will have to preserve a more defensive front in their own districts. This view has been steadily coming to the front and now finds voice in a circular letter issued by the Reading Club.

The Reading Club takes the Initiative.

THE Reading Club has been considering the advisability of affiliation with the Automobile Club of Great Britain and Ireland, and a special committee was appointed to deal with the question. After most carefully weighing the *pros* and *cons*, that committee came to the conclusion that the fee required for affiliation (10s. 6d. per member) would be too great a strain upon the resources of the club, and that, therefore, affiliation, though desirable from many points of view, is impossible. There is no doubt, however, that some sort of union amongst the ever-increasing number of automobile and motor-cycling clubs in the United Kingdom would be most desirable in the interests of the sport, and it was felt by the committee that there is probably a large number of provincial clubs which feel the same difficulty on the question of affiliation as the Reading Club, but which would welcome an association of provincial clubs formed for the purposes of mutual defence and generally promoting the interests of provincial automobilism. It was thought probable that such an association could be readily formed, which would combine all the advantages of affiliation to the A.C.G.B.I., but at considerably less cost, and at the same time become an influential and independent body.

The Scheme of Management.

THIS idea was brought before the members of the Reading Club, and on the proposition of the president, Dr. J. H. Walters, it was decided to bring the matter before all the provincial automobile and motor-cycling clubs and ascertain their views regarding the feasibility of forming an association of provincial clubs for the purposes of mutual defence and promoting the interests of provincial automobilism generally. Already a suggested scheme has been outlined by the Reading Club for the proposed Automobile Federation. The central committee would be composed entirely of nominees of the federated clubs.—(a) One third of the members of the central committee to retire each year in rotation, but be eligible for re-election. (b) The central committee would appoint the officers of the Federation and undertake the general management of the Federation. A central defence fund would be created and members and associates would be given the advantages mentioned in the following paragraph.

Possible Advantages.

EACH federated club will have entire control of its own affairs, and each federated club would have equal voice in the management of the Federation. The expenses of the administration of the Federation would be comparatively small that no central club-house, with its attendant outlay, necessary. Members and associates might have access to the club-rooms of any of the federated clubs, subject to the rules of such clubs. Subscriptions paid by associates would be sent direct to the central committee, and would very considerably augment the central fund. In districts not represented by a federated club, associates, selected by the central committee, might act as district consuls. Arrangements could be made with hotel-keepers, and others, for securing advantageous terms to members of the Federation. A Federation trophy might be acquired and competed for by a team selected from each of the federated clubs.

Reform in Ladies' Automobile Attire.

THE American National Milliners' Association recently held its annual meeting in Chicago, and occupied itself with the subject of ladies' automobile dress. One of the delegates, Madame Hunt, sought to create a sentiment for more æsthetic and fitting designs. According to her views, the articles at present offered to fair automobilists at milliners' and department stores may serve the purposes of long country trips, but are unsuitable for drives in the city—for shopping, visiting, or pleasure riding. Articles of dress intended for the last-mentioned purposes should be of such a nature as to admit of the wearer attending an afternoon reception immediately upon alighting from the car. This condition excludes all long flowing veils. Madame Hunt considered that light close-fitting silk hats projecting sufficiently to protect the eyes should be worn, and coats which would look as well when walking along the street as when sitting in the car.

The Biograph at the Club.

THERE was a "crowded house" at the A.C.G.B.I. on Thursday last week, when the winter season was inaugurated by a house dinner followed by a Biograph display. The programme of the latter was of a most varied character, ranging from "An Imaginary Love Scene" (which, by the way, was coloured), to the more serious and instructive subject of "The Launch of the Oceanic." A series of pictures of the Gordon Bennett race in Ireland was set down as the *bonne bouche* of the evening; but, while these brought back memories of an exciting day to many of the members who spent July 2 at Ballyshannon and the Moat of Ardscoil, and gave a realistic representation of the race to others who were not able to visit the Green Isle, the interest of the evening was undoubtedly centred in the reproduction on the Biograph of the thrilling exploit of Capt. Deasy in ascending and descending the Rochers de Naye along the cog railway. The pictures, which came altogether as a surprise, and testify to the enterprise of the Biograph Company, were most realistic. The descent seemed, if possible, a more daring task than the

ascent, and it made us shudder, as we anxiously watched the car slowly descending the steep grade. Curiously enough, Capt. Deasy was among the audience, and thus was able to witness the performance from the point of view of a spectator. At the conclusion of the Rochers de Naye pictures there were calls for Capt. Deasy, who gave a brief but thrilling account of his feat. He explained that the car—a 14-h.p. Martini—was fitted for the event with 9-tooth sprockets in place of the usual 11-tooth wheels, and that to satisfy the officials of the railway line an unusually large sprag was carried. As to the gradient, three kilometres of the route are about 22 per cent., and on this the car was stopped and successfully re-started. Altogether the opening meeting of the winter season was a pleasant and enjoyable function.

A Judge as Expert.

SIR ALFRED COOPER, a Surrey J.P., who has just been caught by Sergeant Jarrett in one of his specially devised traps for motorists, does not seem to have a very high opinion as to the methods of the police upon whose evidence he and his fellow magistrates are often asked to convict gentlemen who are doing no harm to the community. Were every J.P. a motorist, we should have more common sense pronouncements from the bench, and that there is something in the idea that

he car, and, with Mr. Egerton driving, left for Ipswich at 5.21. Whilst daylight lasted the pace was strong, but slackening down as darkness fell, the car brought its freight up to the station at 6.19, well in time for the Norwich train.

A Scotch View.

At the statutory monthly meeting of the Inverness-shire County Council, the Road Board reported that it was not expedient to exclude motor-cars from county roads, but that the Secretary for Scotland should be petitioned to frame by-laws for the protection of the public using these roads, and in particular that a by-law should be passed to the effect that a car must be stopped on the driver of any horse or vehicle, or the driver of sheep and cattle, holding up his hand to indicate his wish that the car should be stopped, and the Board recommend to petition the Secretary accordingly. Lord Lovat, who moved the adoption of the report, reminded the Council that the "up hand" clause had been introduced into the new Act by the House of Lords, but that it was deleted by the House of Commons. He thought, however, that the Secretary for Scotland had power to add a by-law to the effect proposed applicable to individual counties. The recommendation of the Road Board was approved on the principle that "there was no



The Anniversary Run of the Western Section of the Scottish Automobile Club. The Scene at the Start.

only practical men should adjudicate in motor-car cases is suggested by a remark of Judge Emden at the Lambeth County Court the other day. A man had claimed damages for being knocked down by a motor-car, when the judge remarked that in view of the extremely high feeling against motorists, he wished to state that he was a motorist himself, and if the plaintiff wished he would facilitate the removal of the action to some other court. The plaintiff's counsel said that he had no desire to remove the case, whereupon Judge Emden added that, as a matter of fact, he found his knowledge as a bicyclist and motorist very valuable in deciding street accident actions generally.

Football and Motoring.

THE players engaged on the side of the visitors in a football match at Dovercourt, the other day, between the Harwich and Dovercourt Club and the Norwich City Club, discovered during the afternoon that the train service between Harwich and Ipswich and Norwich did not admit of their getting home that night unless they left about the same hour as the match was to begin. The idea of a motor-car suggesting itself, a telegram was dispatched to Messrs. Botwood and Egerton, at Ipswich, in response to which Mr. Egerton himself set out about four o'clock, and reached the field in time to see the conclusion of the game. After "changing" at the hotel, three of the footballers mounted

harm in asking" the Secretary for Scotland to frame a by-law of the nature desired, and the Special Roads Committee was instructed to make arrangements for putting the new Motor-Car Act into force.

No Stop Watches in West Suffolk.

At a meeting of the West Suffolk Standing Joint Committee, at Bury St. Edmund's, on Monday, presided over by Col. Barnardiston, a recommendation was received from the chief constable (Capt. Metcalfe) that a dozen stop watches be purchased for the police, in order to facilitate the watching of motorists, at an estimated cost of ten guineas. Col. Boyd C. P. Hamilton said he hoped the police in West Suffolk would not have put upon them the degrading office of watching motorists. It was a perfect disgrace that a police officer should hide himself behind hedges. It was un-English in every way. He moved that the matter stand over. Mr. Elliston Allen thought the matter might be postponed till the Act came into force in January. Mr. O. D. Johnson agreed with this, but said he did not think it should go forth that as a committee they deprecated the action of the police in detecting breaches of the law, whether the breaches were committed by those in high places or in low. While the law was in existence in the land it was the duty of those appointed to administer the law to administer it. He thought

the committee should be careful in matters of that kind. Mr. L. Marshall said whether there was a law for the rich and another for the poor, he did not see why the police should spend their time in looking after motor-cars. The matter was allowed to stand over, as suggested.

Mr. E. L. Cooke's Case.

WE understand from Messrs. Firth and Company that Mr. Cooke has taken counsel's opinion as to whether he could proceed against the Justices of the Peace for York, for the high-handed way in which they treated him in his case, for an alleged technical infringement of the Light Locomotives on Highways Act, 1896, for exceeding twelve miles an hour. He was fined £10 and costs, or two months' imprisonment. Mr. Cooke was so disgusted at this decision that he declared that he would rather go to prison than pay it. He accordingly refused to pay it, and ultimately a warrant for his arrest was issued and he was imprisoned. Counsel's opinion has been taken, from which it appears that the Justices have not committed themselves to an action.

Road Repairs.

THE season is now approaching when extensive repairs will be carried out on the various highways, and, for the benefit of traffic in general and for motor-cars in particular, it would be beneficial if some signal was placed at night at each end of a piece of road that is under repair, in order that drivers might reduce the speed of their cars and possibly prevent damage to the tyres. Mr. S. Towson, A.M.I.C.E., the district surveyor for Sevenoaks, has for some years placed a lamp showing a red light on the nearest street lamp posts at either end of a length of road under repair, and when the signal is known by drivers they are very glad of the warning. The defect is that the red lights are not general and a stranger coming along would not know the meaning of the signal. If the matter could be taken up and every District Council be induced to give the warning, the drivers and owners of many vehicles would be benefited thereby.

Railways and Motor-Cars.

THE conversion of the Great Eastern Railway Company to automobilism is a notable sign of the times. We are officially informed that the directors have decided to establish a motor-car service between Lowestoft and Southwold, a significant development in view of the complaint of Lord Claud Hamilton, the chairman, at the last half-yearly meeting, as to the effect of the competition of motor-cars and electric trams in reducing profits. Railway directors will have to recognise that the automobile should be regarded as an important accessory to their prosperity, and not as a competitor to draw away dividends. Evidently the leading railways are recognising this fact. The other day we noticed the business agent of the London and North Western Railway employing an Oldsmobile in the execution of his official duties in South London, and previous record has been made of the enterprise of the North Eastern and the Great Western Railways with regard to automobiles.

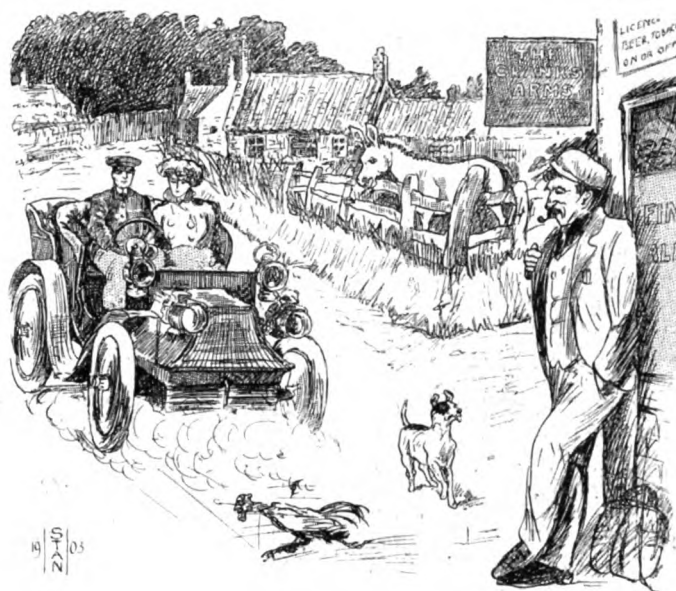
The Lighting of Vehicles.

At the last meeting of the Renfrew County Council Mr. H. R. Peite said the Roads Committee, when considering the operation of the new Motor Car Act, should also deal with the entire question of the lighting of vehicles at night. For instance, there were carriers' carts which, under the present regulations, did not require to carry lights. Those cars had often, as part of their freight, long bars of iron for country smithies, which projected behind the carts and formed a dangerous obstacle to anyone driving up behind them. Then the committee should also consider carefully what regulations they thought should be enforced regarding the lighting of motor-cars. As the law at present existed there was nothing to pre-

vent these "fiery articles" from going at a less speed than twenty miles per hour, even at night, and with the lights they carried and the speed at which they went such vehicles were very apt to startle passing horses. The whole question of the lighting of vehicles needs careful consideration.

The Act in Hampshire.

WE congratulate Mr. A. L. Stent on securing the passing of a resolution at the last meeting of the Havant District Council excluding the Emsworth road from a resolution of the Roads Committee which would have practically brought the whole of the roads in the district within the operation of the ten mile limit. The rural councils, however, seem to be going to extremes, and miles of the finest roads in the county of Hampshire are likely to be brought within the restriction. It is rumoured that the Corporations of Bournemouth and Portsmouth will probably adopt a less restrictive and more sensible policy.



"Rich Loafers" (see last issue, page 629.)

Hedge to Hedge.

LAST week we were able to announce that the Local Government Board had decided that the measurement of the highways in connection with Clause 8 of the Motor Car Bill should be made from hedge to hedge and not across the roadway. This will settle much confusion that has arisen in the minds of motorists, and we suppose they must be thankful even for this small mercy. Measuring from hedge to hedge will prevent local authorities throughout the country closing many of the roads they had in view for such prohibition, and in the fens of Lincolnshire as well as some of the uplands of Surrey will enable motorists to travel in districts which, it was feared, would be closed to their use.

The Passing of the Amateur.

THE abandonment by the Automobile Club of the annual anniversary run in November is a matter of some interest, both to amateurs and the trade. Since 1896, when, on the occasion of the run to Brighton in celebration of the passing of the Light Locomotives Act, Mr. Hewetson on his Benz car was among the first to arrive at London-by-the-Sea, these annual events have been matters of importance. To a large extent the trials taking place in the autumn have lessened the interest in the November run, and the growing proportion of traders taking part has necessarily restricted the entries of amateurs. This is a natural trend of the time, and has been evident in America as well as here. The first Endurance contest in America, in 1901, was mainly supported by amateur motorists, but

these have all disappeared from the programmes of later events, which are now entirely monopolised by members of the trade. Those who participated in the early tours of the Automobile Club in this country will regret that the growth of the movement has prevented their continuance on the old lines, for there was a sociability about these pioneer events which has disappeared. Undoubtedly some of those early amateurs look upon later developments with somewhat of a pessimistic attitude, but they must console themselves with the reflection that it is an inevitable consequence of the great development that has taken place in the industry.

Progress in Scotland.

WHILE on this subject attention may be called to the fact that, anticipating the date of the anniversary somewhat, the Scottish Club last week had a celebration of the legislation of 1896 all to itself. In the South of England the prominence that automobilism is assuming north of the Tweed is scarcely appreciated at its full value. Illustrative of this, it may be mentioned that in 1901 there were twenty cars taking part in the similar event, while in 1902 the number rose to fifty. This year that number was augmented to over seventy, the largest gathering of cars yet seen in Scotland. It is also noteworthy that one half of the cars in the run were built in Scotland, while only one-third of the whole were of foreign manufacture. Last week's run, the recent extensions to motor-car works in Glasgow, the growth of automobile agencies in all the leading Scottish centres, and the popularity of the country for touring, are all evidences that Scotland is well to the fore in this matter, and that the suggestion that the Reliability Trials might well be transferred to north of the Tweed, or some centre half way between London and Glasgow, has strong claims to recommendation.

The Future of the Trials.

ON the other hand many leading firms in the trade would favour the abandonment of the trials for say three years. At present makers have to carry on business with one eye on the forthcoming trials. This is said to be a disturbing factor in the consistent organisation of production. If there were a lull in the trials, the technical experts would have time to seriously consider many points that have yet to be settled before the industry attains that stability we all desire. Then, too, trials at intervals of longer periods than twelve months would give opportunity for more valuable comparisons as to progress made, and would enable the trade to thoroughly test by longer experience the types of machines now in type.

Every Three Years.

THERE should be no difficulty in effecting an arrangement of the Trials on lines such as this:—One year, the trials of motor-cycles should take place; the next, those for delivery vans; and the third year, those for pleasure cars. In this way much of the overlapping that must inevitably result from too frequent trials will be avoided, while makers will have an opportunity of specialising in whatever department seems best from their own points of view. The subject is one of importance as well as interest to the trade, and the opinions of readers will be welcomed.

Motor-Cars in Winter.

THOSE automobilists whose experience does not yet include winter use of their vehicles will probably welcome a few remarks on the special precautions necessary in their operation during the next few months. Carelessness in leaving steam and petrol vehicles exposed to freezing temperatures with water in tanks has been the cause of much annoyance, and users are especially liable to suffer from this trouble at the beginning of the cold season, when a sudden drop in temperature often comes unexpectedly. In petrol vehicles the cracking of the engine

cylinders is the most serious result of this oversight. With steam cars the piping and tanks are sure to burst if the water is allowed to freeze. In the case of petrol vehicles an efficient method of preventing the water from freezing at temperatures below the freezing point is to add glycerine, although some motorists consider that calcium chloride is preferable. Steam carriages must not be exposed, when not in use, for any length of time to freezing temperatures. When left in the stable either all the water must be drawn from the tanks or else the stable must be heated, the latter being probably the method most generally employed by steam-car owners. At periods of extreme cold lubricating oils have a greater viscosity than during the warm season, and to feed the oil at the same rate requires, therefore, a greater opening of the lubricator.

The Future of the British Trade.

ON Friday of last week a number of well-known motorists met Mr. S. F. Edge at a pleasant dinner at the Trocadero Restaurant. Responding to the toast, "Success to British Motoring," proposed by Earl Russell, Mr. Edge observed that England is the greatest market for automobiles. The imports of foreign motor-cars to the end of September this year were valued at £1,600,000, an equivalent of 5,330 vehicles at £300 each. He looked forward with confidence to the time, not far distant, when, instead of paying the foreigner a million and a half for their motors, we should be receiving perhaps ten times that amount from them for ours. On the subject of racing, Mr. Edge defended the Gordon Bennett and similar contests. They had, he said, played an indispensable part in the evolution of the perfect car, forming a practical object-lesson to the manufacturer, and it was a singular fact that the three greatest makers of automobiles in the world, French, German, and English, had each won the much-discussed Gordon Bennett race.

MESSRS. MILNES-DAIMLER, LTD., are removing to 221, Tottenham Court Road, W.

THE Automobile Club of Saxony and Thuringia has just been formed at Zwickau, Saxony.

THE Highways Committee of the L.C.C. is preparing a report on the Motor Car Act.

MESSRS. CLARKSON, LIMITED, have just completed a sixteen-seated steam omnibus for service at Torquay.

MR. T. H. HOLDING will hold a special exhibition of his motor garments at his show rooms on Tuesday next.

WE understand that the hon. secretaries of five provincial automobile clubs have already promised favourable consideration to the proposal of the Reading Club, referred to on page 647.

WE learn that the Auto-Cycle Club has now definitely decided to adopt two racing standards for motor-cycles for the year 1904. After much discussion it has been decided to abandon the weight limit classification in favour of cylinder capacity. The new standards will be as follows:—Class A: motor-cycles, the engines of which have a cylinder capacity of not more than about 269½ cubic centimetres, or the equivalent of 70 mm. bore by 70 mm. stroke; Class B, motor-cycles the engines of which have a cylinder capacity of not more than about 344½ cubic centimetres, or the equivalent of 76 mm. bore by 76 mm. stroke.

THE municipal authorities of the city of Mexico have lately passed a new and somewhat severe ordinance to regulate the operation of motor-cars in the federal district of Mexico. First of all, there is a monthly tax or license fee of 8s. to be paid. Then, on making application for license, the owner of the car must furnish two personal photographs, one of which is fixed to the license certificate for purposes of identification and the other filed away by the city authorities. Finally, an examination has to be passed, and the applicants must be pronounced competent mechanics before a license is issued to them. It will be apparent that the monthly fee makes automobilism a very expensive pastime in Mexico.

CARS, PAST AND PRESENT.

BY MRS. KENNARD.

EVER since we first kept a motor-car, about five years ago, it has been our custom to run up to Scotland on it every autumn. Good old "Sir Charles" of 1,000 miles Trial fame has accomplished the journey repeatedly. In the early days, Mr. Napier's first creation was considered a veritable flier, but speed is purely comparative and a matter of habit. Latterly, in spite of her sturdy qualities, we designated her "a poor old slug." The car weighed over twenty-five cwt. and the engines were only 8-h.p. Although they performed prodigies, our pace uphill was often reduced to a crawl. It took from three to four days to do the journey of 365 miles, and even then it meant being many hours on the road.

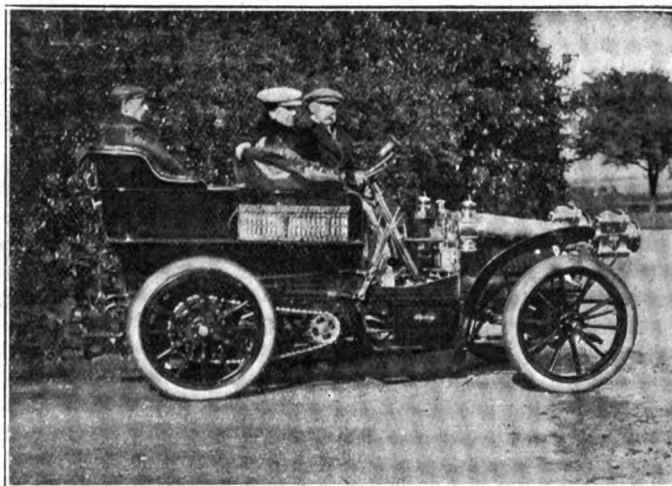
This year we became the proud possessors of a 12-h.p. four cylinder Napier, and early in September we set out for the north, anxious, if possible, to make a good run. The start was auspicious, the day proving fine, the roads in fair condition. We left our home near Market Harborough at 8 a.m. and by ten minutes past twelve were filling up at Doncaster. The car had virtually averaged twenty-five miles an hour for her first hundred miles, and this included slowing up for cattle, sheep, vehicles, towns, and police traps, of which there were several *en route*. It was an absolute non-stop run. After taking in six gallons of petrol we started afresh, and when clear of Doncaster made a very excellent picnic lunch by the roadside. After half-an-hour's delay, we once more pursued our journey north, and did not pause until nearly 5 p.m., when the pangs of hunger called for a halt of a few minutes, during which we gladly disposed of the remains of the earlier meal. By 6.30 we found ourselves in Morpeth, and here we decided to put up for the night, having done 235 miles in the day with the greatest of ease.

We arose the following morning to find torrential rain descending. Grey were the skies overhead, and black the roads underneath. Never did motorists gaze at a more doleful scene of desolation. The weather was simply appalling. We looked and shuddered; dressed, breakfasted, and shuddered again. But my husband decided to push on, and we arrayed ourselves for the fray—or rather deluge. And a deluge it certainly was; pitiless, pelting, persistent. But to the gallant car the ungracious elements seemed to matter little. She climbed the steep slopes out of Alnwick in quite light-hearted fashion, swept swiftly on to Berwick-on-Tweed, and from thence to Cockburn's Path, which mountain pass was not rendered pleasanter by a dense sea fog in addition to the rain. At Dunbar, three dripping, cold and shivering objects presented themselves at the hotel for refreshment. So wet were we that the waiters eyed us askance as we stood and poured little rivulets upon the flagged hall. At Edinburgh the rain was still descending with merciless severity. For hours I had been sitting in puddles, and every few minutes, at this stage, a fresh trickle developed itself. Down one's neck, through one's pockets, into one's boots. Phew! it was motoring with a vengeance. Thanks! infinite thanks to Charles the Second, who landed us at our destination in Falkirk at 4.30, having accomplished 365 miles since the previous morning.

The homeward journey, undertaken a week later, was destined to put the motor to even a still more severe test. No words can describe the weather. Rain, wind, hail were the daily accompaniments of our rides. The roads were in an awful condition. We stayed a couple of nights with friends near Carlisle, and then set our faces south, travelling via Bothell, Grasmere, Thirlmere, Windermere, Ambleside, and Keswick.

Beautiful as the scenery no doubt was, we saw next to nothing of it. There was snow on the hills, mist in the valleys, furious squalls of wind in the passes, and rain, rain, rain and floods everywhere. The water flew up in fountains from our front wheels, and we were drenched to the skin. Even the trickles disappeared in one vast wetness. Many of the gradients were exceedingly formidable. It took a good car to climb the hill out of Keswick, with chains all stiff and belogged with mud. It is at such times and such seasons that the motorist offers up a

prayer of thankfulness to the makers of a really good vehicle. On, steadily on, went Charles II., battling bravely with the unkind elements, which seemed to have combined to bar his progress. Stoutly and swiftly he disdained them, never halting, until he pulled up for the night in the yard of a comfortable little hostelry at Skipton. He had defied every hill encountered and flung the steep Buck a Brow to the rear with consummate ease. We were the envy of an unfortunate fellow motorist, whose car had failed on the previous afternoon to climb the long and steep ascent out of Keswick. The next day meant home, and we were up betimes, only to find water the predominant note of the surrounding landscape. Never was there such a mockery of a summer. The roads around Keighley and Bradford were in an indescribable state of grease. The car could only be driven by throwing the clutch in and out, and any attempt at braking or high speed would instantly have courted disaster. Our progress was necessarily somewhat slow through this thickly-populated district. But, after reaching Wakefield, matters improved considerably, and we were able to bowl along to East Retford in fine style. After leaving that town, however, a storm of malignant severity overtook us. It accompanied us for the remainder of the journey. The following day the papers were full of the unprecedented gale, the stupendous rainfall, the vast amount of damage inflicted by land and sea. Dover Harbour was partly demolished, and the harvest practically ruined. Charles the Second never



Mr. and Mrs. E. Kennard on "Charles the Second."

finched in the face of the cyclone. Bespattered, bedraggled, converted into a sea of mud, his colours indistinguishable, his trimness, symmetry and beauty totally obscured, to his honour be it said, he forged ahead, true and trustworthy throughout the most trying tour the writer has ever taken part in or hopes to take part in again. The wind raged, the rain descended with tropical violence, so thick, so fierce, so fast, that the driver had to shield his face with one hand and steer with the other. It out the skin like knives. But, amid the general discomfort of our surroundings, the marvellous reliability of the modern motor-car stood out as a fact more and more firmly impressed upon the mind. In olden days, non-motorists used to say with a sneer, "Do these things always go wrong?" The query will soon resolve itself into, "Do they ever go wrong?"

Engines have been brought to a pitch of perfection hard to improve upon. Every year more care is being bestowed upon details by manufacturers. Brakes, gears, ignition, are all receiving a fair share of attention. There remains but one weak spot. Tyres alone deter the general public from boldly adopting the horseless vehicle as one of utility rather than pleasure. When the costly pneumatic is superseded and side-slip eliminated, then the star of the automobile will shine brightly and without rival. In time, human brains overcome all difficulties; sooner or later they will conquer these to a certainty. The cars of five years ago and the cars of to-day prove what man can accomplish and where he still must seek perfection.

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THE 5-H.P. "HUMBERETTE."

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WE have already published a general view and some brief particulars of the 5-h.p. voiturette recently produced by Messrs. Humbers, Ltd. As considerable interest is being shown in the little car, which appears to be a successful attempt to produce a motor-vehicle at a popular price, we this week devote space to a more lengthy account of its principal elements, the disposition of which is clearly shown in the accompanying illustration, which represents a plan view of the car with the body removed. To begin with, the frame, both the main one as well as the secondary, which carries the engine and gear box, is of tubular construction. The motive power is supplied by a single cylinder vertical motor, developing 5-h.p. at a speed of 1,500 revolutions per minute, the cylinder diameter being 3.5-8 in. and the stroke 3.5-8 in. The engine is placed forward of the dashboard, under a bonnet, which can be thrown back, exposing the engine, carburettor, ignition and water-cooling apparatus, all of which are extremely accessible. The ignition is by accumulators and trembler coil, with a wipe contact maker on the engine. The water tank and radiator are combined, the circulation being maintained by a gear-driven pump. In order to give an indication as to whether the pump is working properly, a tap is provided in the pipe leading from the top of the water jacket to the radiator. On opening this tap, if the pump is in order, a steady stream of water will flow out. The battery and coil are contained in a small box beneath the bonnet, so that they are as near as possible to the engine, thus reducing the wiring to a minimum. The carburettor is a Longuemare, the throttle and air levers of which are controlled from the steering standard. Passing now to the transmission, this is through a clutch gear box, universally-jointed shaft and bevel gearing to the rear live axle. Two speeds forward and a reverse are provided, the power of the engine being transmitted direct on the top speed. The pinions in the gear box are always in mesh. The clutch is of the cone type, covered with leather, so fitted as to prevent end thrust on the engine shaft. The reverse motion is thrown into action by a different lever to that used for the forward speeds, but the mechanism has been so arranged that the reverse can only be engaged when the change speed lever is in the free engine position. The frame of the body is built of tubing, the panels being of sheet aluminium. A roomy seat, giving ample accommodation for two persons, is provided, whilst at the rear, on the platform, and in the whole of the space below the seat, there is an abundance of room for tools, spare parts, and for luggage. On the dashboard is the petrol tank, holding sufficient for a run of 100 miles, and an oil tank carrying half a gallon of lubricant, the feed pump being attached to the tank. The change-speed gear runs in oil, and only requires refilling at long intervals, while four transparent lubricators serve the back axle, bevel, and balance gears. Two brakes are provided—a pedal actuated band brake on the transmission shaft, just behind

the gear box, and a double band brake working on drums on the back axle, operated by a hand lever. The control levers are all grouped round the inclined steering pillar. The Humber single arm steering wheel is employed, so that the levers are particularly accessible, and the control of the car rendered exceptionally simple. A useful provision is made whereby the height of the steering wheel can be adjusted. The wheelbase is 5 ft. 3 in., and the gauge 3 ft. 6 in., the dimensions all over being:—Length, 7 ft. 10 in., and width, 4 ft. The wheels are of the cycle type, 28 in. in diameter, shod with $2\frac{1}{2}$ in. pneumatic tyres. The total weight of the car is about $5\frac{1}{2}$ cwt. It is made in two patterns—the Coventry Humberette, with an undivided front seat, and the Beeston Humberette, with bucket seats, side doors hinged to the dashboard, a governor on the engine, and several other small refinements. On the level the car can attain

a speed of 25 miles per hour, while it has climbed a hill with a gradient of 1 in 9 at a speed of 8 miles per hour. Already large number of these little cars are in use, and in order to facilitate their control and maintenance Messrs. Humber have prepared an exceedingly useful handbook, in which the arrangement of the various parts is clearly depicted, and instructions given as to driving, oiling, etc.

MESSRS. JULIUS HARVEY AND CO. have a further order in hand for a steam motor-wagon for India.

GENERAL FRENCH, who has been shooting in Norfolk during the past week, enjoyed several trips on a 10-h.p. Sandringham car.

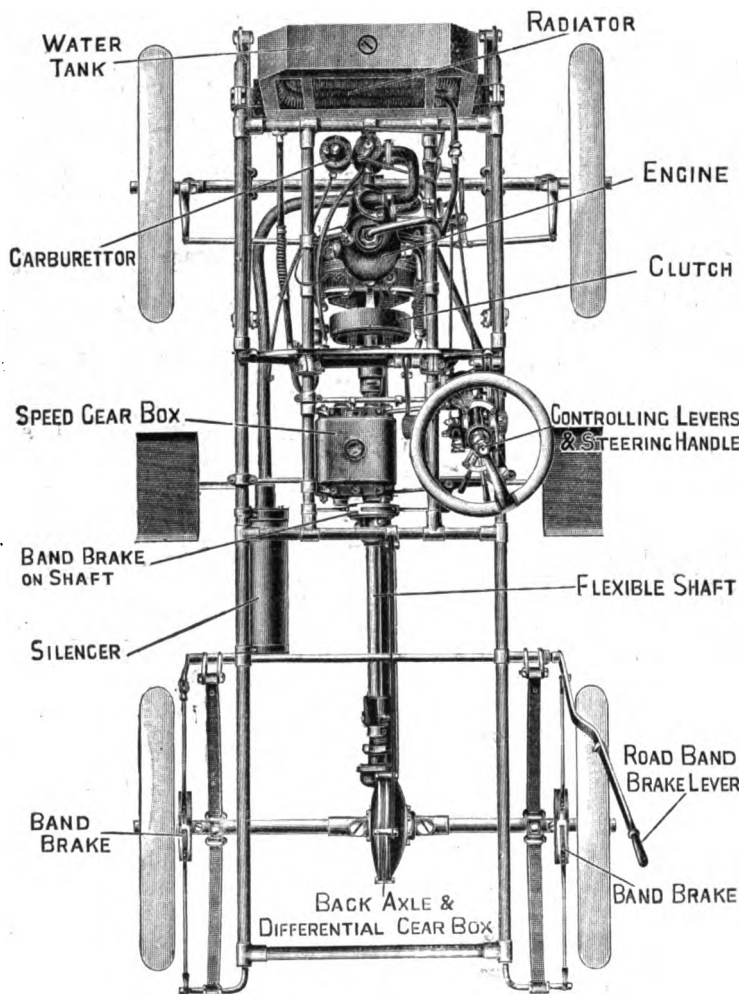
A REQUEST by Earl Russell to address the members of the Midhurst Parish Council on the 8th and 9th sections of the Motor Car Act has been declined.

MOTOR-CARS are not allowed in Hyde Park between Hyde Park Corner and the Magazine—a curious restriction to which the attention of His Majesty's Office of Works has been drawn in vain.

THE Pyrocratic Electrical Co., Farm Street, Birmingham, are now marketing a new mica

plug which consists of three pieces only, and when being placed together the point centres itself. The mica is put on with a special cement that is grease proof. The makers claim that it is impossible to break the layers of mica when adjusting.

THE report of the directors of the Lanchester Engine Company, Limited, presented to the shareholders at the fourth ordinary general meeting, held at Birmingham, on Wednesday, showed a net profit for the year, after charging directors' fees, interest on debentures, depreciation on plant, tools, etc., and providing ample reserves for bad and doubtful debts, of £8,667 2s. 6d., which the directors propose to carry forward. In consequence of the development of the undertaking additional capital is now required, and the directors propose to offer for subscription, at an early date, a further issue of ordinary shares, preference in allotment being reserved for the present shareholders.



Plan of Chassis of 5-h.p. "Humberette."

CONTINENTAL NOTES.

AT the leading French motor-car factories all attention is just now centred on hurrying along the 1904 patterns. It is declared by many that the stage of experiment has now been fully passed, that radical improvements and marked improvements are equally impossible, and that the forthcoming *Salon* will be more characterised by greater attention to details and a movement toward greater refinement than any radical change in design. While this may be true to a large degree, it is none the less true that the show will be as full of interest as ever. Already a few particulars of the new models of different concerns are leaking out. For instance, the De Dion Company, in addition to their popular 6-h.p. car, are bringing out a new 8-h.p. single-cylinder vehicle with three speeds and several modi-

rival show has for the moment been dropped. Now it is the composition of the French team for the 1904 Gordon Bennett race that has upset the peace of mind of motor-car builders. As has already been mentioned, the Sporting Committee of the A.C.F. had agreed that an eliminatory trial should be organised, but proposed that this should only be to select two cars for the team, a Panhard car to be given a place without competition. It is this proposal that has almost set the French motor world on fire.

THE different "Syndicales" connected with the motor trade have held meetings and have adopted a resolution that an eliminatory trial should be organised to select the cars, not for two places, but for the whole team, and open to all builders, and have charged the Marquis de Dion to bring their resolution before the



Count de Cadignan on his Bardon Car fitted with Roussel Spring Wheels.

(La France Automobile.)

fications in the steering and control. Of double-cylinder cars there will be three sizes—10, 12, and 16-h.p., while a feature will be made of the heavy petrol lorries and public-service vehicles to which reference has already been made in the *Journal*.

THE 1904 programme of the Peugeot Company comprises several new models, chief among which is a 7-h.p. double-cylinder car with cardan shaft transmission, and a 25-h.p. four-cylinder chain driven vehicle. A number of improvements are being introduced in all the old models, which will be found to be much quieter in the running than hitherto.

THERE is at present considerable excitement in automobile trade circles in France. Trouble has been experienced in connection with the spaces at the *Salon*, but apparently the demands of the large exhibitors have been met, and the proposal to hold a

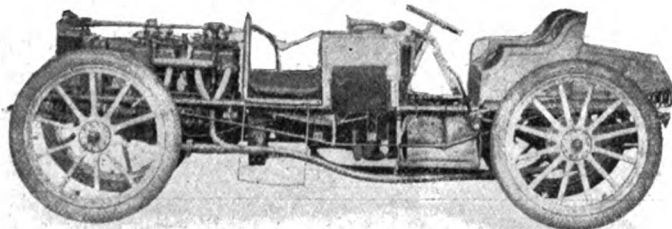
Committee of the A.C.F. Not for a long time has there been such a show of feeling on the part of the trade as has been aroused by this question, and the result of the next meeting of the French Club Committee is impatiently awaited.

RUMOURS are rife in French motoring circles of a new fuel for petrol cars, which not only costs less than the ordinary essence, but is also more economical in use. At present very little is known of the new product beyond that it is ordinary petroleum "modified by a physical process," and that its specific gravity is 720.

THE Automobile Club de Nice is already busying itself with the 1904 Nice week. A provisional programme has been drawn up, according to which the meeting will open on Sunday, March 20th, with a procession of decorated motor-cars. On the

22nd and 23rd March there will be a competition of touring cars over a course yet to be decided.

THE Adler Fahrradwerke Gesellschaft of Frankfort-am-Main, which is reported to be building a racer for the German team in the 1904 Gordon Bennett race, has recently completed a special 24-h.p. racing car, of which an illustration is given herewith. As will be seen, the vehicle is on novel lines, the driver's seat being placed as low and as far back as possible, being entirely separated



The 24-h.p. Adler Racing Car.

by the petrol tank from the mechanician's seat. The engine comprises four cylinders, in pairs, the cylinder diameter being 105 mm. and the stroke 120 mm. The inlet valves are of the usual automatic suction variety. The governor acts on a special throttle valve, which not only controls the quantity of mixture allowed to pass to the engine, but varies the quality to the desired proportions. By means of a hand lever on the steering column the speed of the motor can be regulated as desired from 200 to 1,600 revolutions per minute. A combined honeycomb radiator and tank is used in connection with the pump-actuated water circulation, while as regards the ignition, this is by means of a Bosch magneto. Three speeds forward and a reverse are provided, the power being transmitted from the gear box to the rear live axle by a universally jointed shaft and bevel gearing. Both foot and hand brakes are available, a point about the latter being that a hand lever is fixed at both sides of the car. The frame is built of steel tubing. Although only fitted with a 24-h.p. motor, it is claimed that the car can attain a speed of 50 miles per hour.

BELGIAN automobilists are already formulating plans for next year's "Circuit Nationale Belge." Various alterations in the programme have been proposed. It is suggested that, leaving Brussels on a Saturday, a tour should be made in easy stages to Antwerp, Hasselt, Liege, Arlon, Rochefort, and Namur, the latter place to be reached on the following Tuesday, where a couple of days' rest will be enjoyed. On Friday a fresh start will be made, and Mons, Tournai, Courtrai and Oudenarde visited, Brussels being again reached on the Monday.

THE Krieger Company has lately completed an electrical victoria for the Queen of Italy. It is fitted with a spider seat at the rear for a mechanician. As usual in the Krieger system, there are two electric motors, one to each of the front wheels. The current is supplied by a battery of Fulmen accumulators, the capacity of which is sufficient to run the vehicle a distance of over fifty miles on one charge.

ONE of the novelties at the forthcoming Salon is likely to be found on the stand of the Germain Company, of Monceau-sur-Sambre, Belgium, for, according to report, this concern has a new car on the stocks, fitted with a double-cylinder two-cycle engine.

A CHALLENGE in respect of the Gordon Bennett Cup has been received by the German Club from the Italian Club. This is the first appearance of Italy in this international event.

THE track race meeting organised by the German Automobile Club was held at Westend, Berlin, on Sunday last, in the presence of a large gathering. Owing to the heavy rain of the previous week the track was in a bad condition, which prevented any record speeds being attained.

SOME USEFUL NOTES.

TRANSPARENT celluloid accumulators should always be purchased in preference to the untransparent variety, because, (i.), the condition of the plates; (ii.), the condition of the fluid; (iii.), the level of the fluid; and (iv.), the presence of loose particles in the fluid can then be easily ascertained. As regards the condition of the plates, these should be of a uniform deep slate or chocolate colour, according as they are positive or negative. Whitish-grey patches may be due to "sulphate," and, unless extensive, are not of much importance. They may be reduced by repeatedly charging and discharging the accumulator.

THE fluid should be clear except immediately after charging, when it is milky in appearance. The level of the fluid should always be a quarter to half an inch above the top of the plates. The level may be lowered by (a) evaporation, (b) spilling or leakage. When it is lowered by evaporation all that is necessary is to replace the lost fluid by distilled water. When it is lowered by spilling or leakage the lost fluid must be replaced by acid solution. This is made as follows:—Take one part of pure concentrated sulphuric acid and five parts of distilled water (both obtainable from any chemist), slowly pouring the acid into the water. The resulting solution will be hot and must be set aside to cool before it is poured into the accumulator. Remember that it is dangerous to pour the water into the acid.

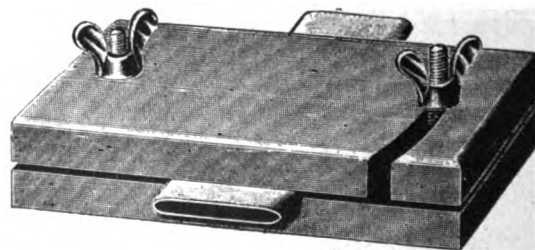
The presence of loose particles in the fluid may be due to (a) foreign matter, (b) pieces of paste dislodged from the plates. Such loose particles are apt to lodge between the plates and short-circuit them, and should therefore be removed without delay.

MUCH apparently mysterious trouble may be caused by the union between the positive and negative terminals of the two cells of an accumulator becoming partially or completely broken. Such a contingency is especially likely to give protracted trouble when, as is the habit with some drivers, each cell is tested separately. Moral: Test each cell separately, if you wish, but do not neglect to test them both together.

NEVER forget that the method of testing an accumulator with a four-volt lamp is only reliable when the accumulator has been in use for at least half-an-hour immediately prior to the test.

ACCUMULATOR terminals should be smeared with vaseline to prevent corrosion and "setting." To do this most effectually, remove the nuts, and, having left the wires in position, thoroughly lubricate the terminals and replace the nuts. On screwing these down, enough vaseline will be squeezed out to lubricate them externally.

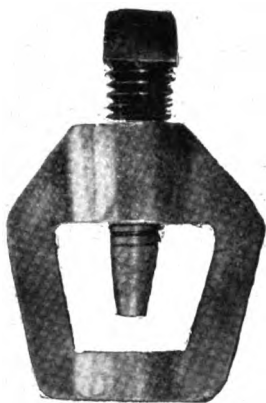
A GERMAN firm has lately brought out the useful patch press illustrated herewith. As will be seen, it is intended for use in connection with the repair of punctured inner tubes, especially in the application of larger patches than can be easily



pressed by hand. It is not necessary to remove the wing nuts, they are merely unscrewed a little, allowing the top part to be swung round. The tube is then placed in position, the patch applied, and afterwards placed under pressure by screwing down the top part. The device is so simple that almost any motorist could easily make one for himself.

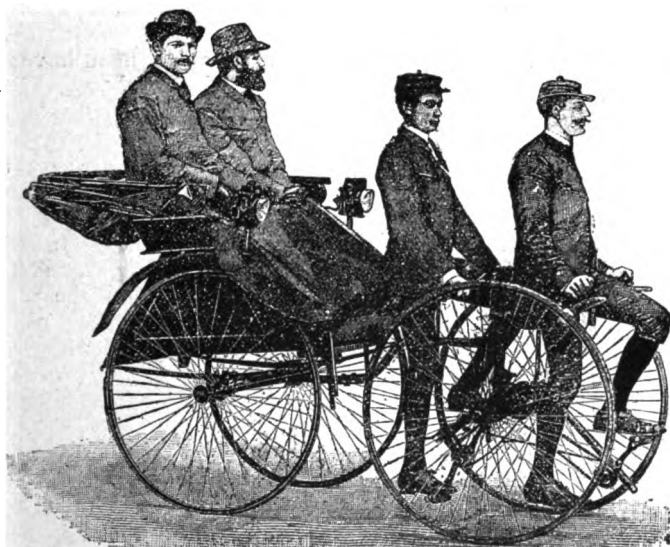
MOTOR-CYCLING NEWS.

THE Jehu Motor Co., Ltd., have just brought out a useful little tool for punching holes in the driving belts of motor-cycles. The accompanying illustration depicts the tool in actual size. The method of using it will at once be apparent, an ordinary



spanner being used to grip the head nut. The screw punch is hollow, the tip being hardened and ground to give a good cutting edge. The tool can be carried in the vest pocket or in the tool bag. It will, the makers claim, cut a hole in any belt up to a full half-inch thick, and the "Magnum Lincona" size expeditiously and cleanly.

MR. A. W. FORINTON, of West Street, Boston, has facilities for the repair of motor-cycles, and also stocks accessories. During the past season he has had good success with his "New Victor" motor-cycle.



A Duplex Manu-Motor Car—Built in Germany about 1885.

THE Motor-Cycling Club will meet at the Marble Arch at 10.30 a.m. on Sunday, 25th October, calling at the Angel, Ditton, at 12 noon. Under the leadership of Mr. S. F. Fry, the party will ride to Abinger Hatch, where lunch will be partaken at 1.30 p.m.

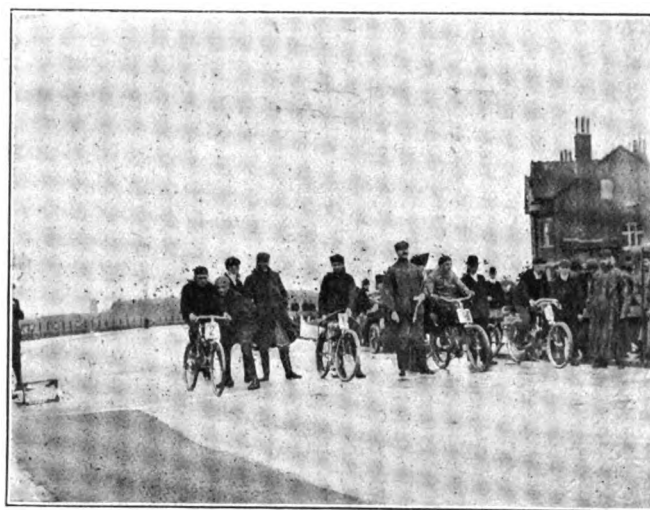
MR. L. R. OSWALD-SEALEY, of Dublin, has made an end-to-end of Ireland record on his Brown motor-bicycle. Leaving Mizen Head, in co. Cork, at 10.5 a.m. on Friday, he reached Fair Head, Antrim, at 6.54 p.m. the following day. The average pace, allowing for stoppages, was seventeen miles an hour. The distance is about 400 miles.

THE Moto Club de Marseilles is organising a motor-cycle touring competition for November 8th. The course is over a distance of 98 kilometres.

THE motor-cycle is now making its entry into Royal circles. Prince Henry of Prussia has lately acquired a motor-bicycle, with which he has been making tours in the Darmstadt district.

TO-DAY (Saturday) the Wolverhampton Motor-Cycling Club will have a run to Stafford, making the Swan Hotel the venue for the day. A run to Wellington has been arranged for the 31st inst.

MR. B. A. HOLMES, of Peterborough, made an attempt last week to break the motor-cycle record from Land's End to John o' Groat's on a 2½-h.p. "Vince" machine. He had placed 238 miles to his credit during the first twelve hours, but, on approaching Warrington, his machine skidded in turning a corner and he fell heavily upon the road, and discontinued the attempt after covering 357 miles in 19 hours and 25 minutes, 92 miles in advance of record time.



The Southport Meet—The Start of one of the Motor-Bicycle Heats.
Photo by [Mr. V. A. Simon.]

CALLING in at the depot of the Beaufort Motor Company the other day we were able to inspect examples of the latest models of 10-h.p. and 14-h.p. Beaufort cars, which comprise a number of detail improvements. The pump and magneto are now driven by enclosed gear wheels, while a new feature is the improved throttle governor, which can be set from the steering column, to govern at any desired speed. The change-speed gear box is an ingeniously arranged piece of mechanism. There are only two sliding pinions on the square shaft, these having teeth both internally and externally. Two speeds are obtained by the external teeth of the pair, and a further couple of speeds by the internal teeth. The gear box itself is so made that the two shafts it carries, with their trains of pinions, can be taken out without it being necessary to detach the box from the frame. Other improvements are to be found in the clutch, in the fitting of internally expanding brakes and the provision of more roomy carriage work. Finally, we may refer to the great advance that has been made in the production of a quiet running car. We were given a demonstration of this by means of a short trip in one of the new 10-h.p. vehicles with Mr. Lorenzen, who a year or so ago succeeded in driving a motor-car up the Round Tower at Copenhagen, at the wheel. We ran out as far as Finchley, successfully mounting *en route* Netherall Gardens, credited with being the stiffest short climb in the Metropolis. The car ran very smoothly and on the high gear nothing but the quiet tick tick of the engine could be heard. Altogether the Beaufort cars appear to have been greatly improved all round and should meet with considerable favour during the coming season.

LONDON TO BUXTON IN ONE DAY ON A MOTOR-CYCLE.

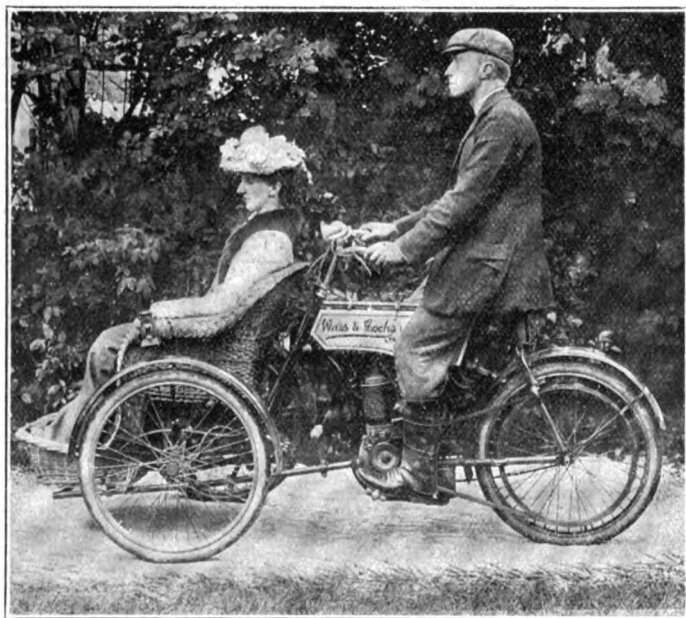
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BY THE REV. EDWIN NOYES,

Of St. George's, Hanover Square, W.

THE following account of a ride from the West End of London to Buxton in thirteen consecutive hours may perhaps be of interest to your readers. On the 3rd of August last—Bank Holiday—my wife and I started from our house in the West End of London on our long journey to Buxton. The machine used is a tricycle, with a fore-carriage for the passenger, as shown in the accompanying photograph. We intended to start at five o'clock in the morning, but, as probably many of your readers will remember with sorrow, the weather in London was of the worst type, and to start in the heavy rain which was then falling was quite out of the question. At about 6.30, however, the rain temporarily ceased, so at 7.15 we started.

It was impossible, however, to make any decent pace around London; for, although the roads were clear as regarded traffic,



The Rev. and Mrs. Edwin Noyes on their Motor-Cycle. (Muir, Ealing.)

yet the surface was dreadfully greasy, and in half an hour the machine was plentifully spattered with mud. Rain came on again very heavily as we approached Barnet, and we were obliged to stop and shelter under some trees. We reached St. Alban's at length, after encountering several heavy showers, one of which delayed us at least a quarter of an hour, but after that the weather cleared, and the roads soon dried up.

Leaving St. Alban's we passed on through Dunstable, Fenny Stratford, and Stony Stratford to Towcester, thence along the lovely stretch of level road through Daventry to Coventry, and from Coventry to Stonebridge. At this part of the journey we made our best pace, but perhaps, if I told you what it was, I might fall into a police-trap even now! Stonebridge is exactly 100 miles from our house. Leaving the high road at Stonebridge, we went by a somewhat ill-kept road to Lichfield, and there we stayed for tea. After a rather hurried meal we went on through Abbot's Bromley to Uttoxeter. Here I was doubtful as to whether to take the shorter route to Buxton, *via* Longnor, or the longer one *via* Ashbourne. I explained to the holiday-makers we met that I wished to go, not necessarily the shorter, but the less hilly road, and when this idea had fully taken possession of one or two who had been keeping holiday not wisely but too well, I gathered that it would be best for us to go the longer way, as being the less hilly

of the two. So to Ashbourne we went, and here our trials began. From Ashbourne there is a stiff ascent of some three or four miles, and such gradients, here and there, as I fancy but few motors would take. So it was a case of pushing the motor up, and we fell to it, and at last got to the top. We were then some eighteen miles from Buxton, but we had reached a switchback road, and by rushing at the rest of the hills we climbed all but one, which, though short, was very steep. By this time we were on the highest ground, the moon was shining brightly, and lit up the wild grandeur of the mountainous scene with wonderful distinctness. All about us were peaks and woods and rocky heights, and the stillness which had fallen made the summer night very impressive and beautiful.

We pushed on along the roads, which were now altogether deserted, and at last we saw, far away and beneath us, the gleaming of the incandescent lights of Buxton. At 10.15 we drew up in the market-place. We had stopped at least two hours on the way, partly for lunch and shelter, and partly several times to tighten a new driving belt, which stretched a good deal. The distance altogether by the route we travelled was 170½ miles from door to door; and this distance, in spite of the wet, we covered without a single mishap in thirteen hours.

The machine, built by Messrs. Wass and Cocks, Limited, of Ealing Dear, W., gave no trouble whatever on the journey, either as regards the engine, ignition, or tyres. The reliability of the 2½-h.p. Kerry engine, is, I think, amply proved by such a test as this; and its excellence was matched and supported by the careful and admirable way in which the machine was built.

ADJUSTABILITY OF STEERING WHEELS.

NO very great amount of adjustability is provided in the average motor-car, the theory apparently being that motorists are very much of a size and that what is suitable for one is suitable for all. Sometimes, therefore, the fat man, the tall man, the thin man, or the short man have an uncomfortable time of it, and doubtless wish that they had been formed on a different model. This is particularly true in the matter of steering wheels and rods. These are almost invariably designed to suit the average man. The fat driver finds the wheel pressing with uncomfortable persistence against his ample person, while the spare man has to lean forward to grasp it; the short man reaches up for this necessary article, while the tall man usually has to stoop to get his grip on it. There are more of the average men than all others put together, and the ready and obvious conclusion is that they are the ones who should be catered for. At the same time, the others form a distinct and by no means insignificant class, and unquestionably deserve some consideration.

It would not be a very difficult matter, remarks the "Horseless Age," to make the steering wheel adjustable in all directions. At present, nothing of the kind is done. The steering rod can be shortened by the simple process of cutting off an inch or two of its length. This is a crude arrangement, however, and works only one way; the rod cannot be lengthened should it become desirable—as in the case of a car passing into the hands of a tall man. Similarly, the tilt should be adjustable, so that it could always be brought within easy reach of the driver.

THE case of the Dechamps Motor Co. (Limited) v. International Automobile Manufacturing Company (Limited) was down on the paper last week for hearing in the London Chancery Division before Mr. Justice Bucknill. It was a motion on behalf of the plaintiffs to restrain the defendants from improperly using a trade name. When the motion was called on it was stated that it had been agreed that there should be no order on the motion, that it should stand over until the trial of the action, and that the question of costs would be reserved. To this course Mr. Justice Bucknill agreed.

HERE AND THERE.

THE Swift Cycle Co. have purchased additional premises for the extension of the motor branch of their business.

THE residents of Palmerston North, New Zealand, now have their bread delivered in a steam motor-van, the first of its kind in the colony.

THE British Motor Fittings Company have registered the word "Britmo" as their trade mark for engines, gears, and all other parts of motor-cars.

A SERIES of lectures on motor-cars are to be given this winter at the Technical High School at Charlottenburg, Berlin, by Professor Von Borries.



A Dennis Car in the Highlands.

AN automobile club is, we learn, about to be formed in the Malay States, where the number of motor-cars in use has already attained a respectable quantity.

AN order for a two-seated electrical car for the use of the electrical engineer of the West Ham Town Council has been placed with Messrs. Pritchett and Gold.

THE exports of motor-cars and parts from the United States during the eight months ending with August last reached a total of £209,862, as compared with £157,227 in the corresponding period of 1902.

THOSE motor-cycle builders who are anxiously awaiting the advent of the new Longuemare carburettor with automatic air regulation will learn with interest that the Motor Castings Co. hope to receive a supply of the same within a few days.

MR. L. P. MOOERS, who drove a Peerless car in the Gordon Bennett race, was the victim of an accident a few days ago that left him with a wrist broken in two places. It occurred when starting the engine of his racing car, the motor giving a "back kick," his arm catching between the starting handle and the frame, breaking his wrist.

BARNEY OLDFIELD, the well-known American racing motorist, made a new record for five miles on the 29th ult. on the Glenville track, Cleveland, U.S.A., with the eight-cylinder Winton racer used by Winton in the Gordon Bennett race. The time for the five miles was 4 min. 49 2-5 sec. Unfortunately the event was not officially timed.

AT a meeting of the Christchurch (New Zealand) Automobile Club it has been suggested that the club should make representations to the Government to have automobile tyres admitted free of duty. Mr. M. A. Jenny has been elected to the club, which, like the sister organisation at Auckland, intends to have a series of weekly runs.

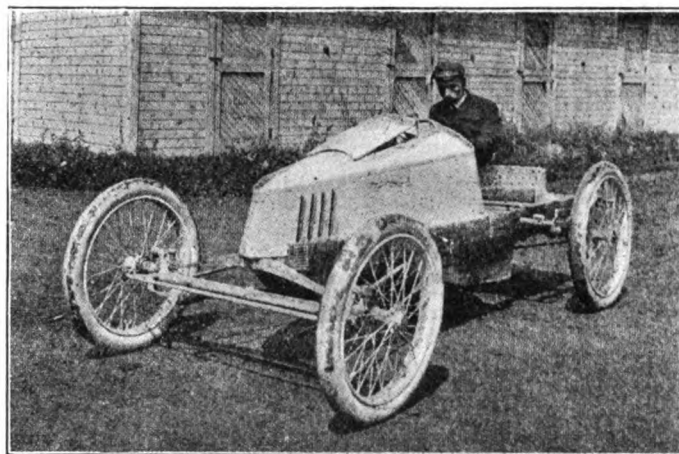
To meet the demand for a popular priced motor-vehicle, the Star Engineering Company are bringing out a small two-seated car to be known as the "Little Star." It is a reproduction in miniature of the company's larger cars, being fitted with a 6-h.p. single-cylinder engine, three speeds forward and reverse, with a direct drive on the top speed.

OWING to the increasing number of motor-cars calling at Warne's Hotel, Worthing, the proprietor does not intend to close this winter. Plans are now being got ready to double the size of the present garage, which will be finished by Christmas, and will be capable of holding fifty cars. Two engineers will be ready night and day to go to any part of Sussex for motor repairs. A plant for charging accumulators has been fitted in the garage.

THE Electricity Department of the Aberdeen city corporation is using a 16-h.p. Milnes-Daimler car in connection with the maintenance of the overhead conductors from which the electric tramways in the city take their current. The corporation only purchased the chassis, the tower and platform, lockers, etc., being constructed in the workshops of the central power station. When fully extended, the platform which surmounts the tower is about nineteen feet above the ground.

THE A.C.F. competition of motor-cabs and vans has been in progress during the week, and will be brought to an end to-day (Saturday). The trials have been organised with a view of supplying data as to the reliability of the various motors, their powers, consumption of fuel, suitability for hill climbing, the durability of different kinds of tyres, etc. It cannot be said that very great interest has been taken in the competition, for in the van section there are only two entries, both by De Dion, while in the cab category there are only five competitors—a De Dion two-seated coupe, a Collin avant-train or motor fore-carriage, to be fitted to ordinary horse-drawn vehicles, two Gillet-Forest cars, and a new two-seated vehicle known as the Aries.

THE production of a special racing car is just now engaging the attention of quite a number of American motor-car builders. The latest concern to enter the field with a racer is the Packard Motor Car Company, whose "Gray Wolf" is illustrated herewith. It is equipped with one of the company's standard four-cylinder 25-horse-power engines located under the bonnet. The machine has sliding gear transmission, giving two speeds forward and reverse. When running on the high speed all gears are disengaged, the drive being direct from the motor to the differential. The two forward speeds are said to give 30 and 75 miles per hour [at an engine speed of 1,000 revolutions per

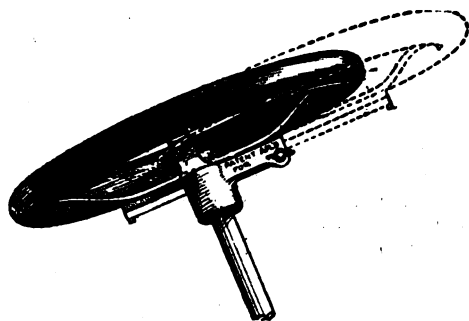


The Packard "Gray Wolf."

minute. The spring suspension combines the same transverse front spring used in the Packard touring car and gives to the "Gray Wolf" the same three-point bearing and the flexibility of the running gear necessary for traversing uneven surfaces at high speed without disturbing the alignment of the mechanism. In all its essential features, such as ignition, carburettor, water circulating system, steering gear, brakes, etc., the racer is similar to the standard cars, differing only in its shape and the elimination of all surplus weight for racing purposes. The weight of the car, filled with petrol, water and oil, is slightly below 1,400 pounds. On a track at Providence, R.I., recently, the vehicle covered a distance of 5 miles in 5 min. 32 sec.

FOLLOWING the example of the Hotchkiss Co., it is announced that Messrs. Schneider and Co., of Le Creusot, the great French gun builders, have decided to take up the construction of motor-cars.

SOME time ago we illustrated the tilting steering wheel introduced by the Hussey Drop Forging and Mfg. Co., of Cleveland, U.S.A. The same concern has now brought out a new pattern of wheel which accomplishes the same purpose of providing easy entrance to and egress from the driver's seat, but in an



entirely different manner. In the new wheel a sliding seat or fastening for the wheel has been provided as a substitute for the hinge. The illustration shows the wheel in its central position for steering and, in dotted lines, in its forward position on the sliding seat, to which it can be moved by simply unfastening a catch.

THE Northern Counties Motor Garages, Limited, has been registered with a capital of £1,250 to acquire the business of storing, repairing, and selling mechanically-propelled vehicles now carried on by Mr. D. E. Campbell, at 27, Pilgrim-street, Newcastle-on-Tyne, as the Northern Counties Automobile Garage.

ON the occasion of the marriage of Prince Andreas of Greece with the Princess Alice of Battenberg, which was celebrated at Darmstadt on the 7th inst., the Czar of Russia presented them with a Wolseley motor-car, of the Berkeley wagonette type. The vehicle is one of the new 12-h.p. models, and has been very tastefully upholstered and finished in dark blue morocco leather with silver fittings. Accommodation is provided for five passengers, exclusive of the driver. A detachable omnibus top is supplied for winter use, a separate canopy and wind screen being fitted for summer. The car was despatched from Birmingham to Darmstadt in charge of a special messenger, and soon after its arrival there the Empress of Russia went for a lengthy drive in it, afterwards expressing herself as being very pleased with the appearance and running of the vehicle.

A MOTOR-CAR accident, which resulted in Lady Winnington and the driver of her motor-car being seriously injured, occurred near York on Monday night. The car was being driven by an experienced man, and Lady Winnington sat beside him. Sir Francis Winnington and a valet were in the seats behind. They were proceeding to Settrington House, the residence of Lord Listowel, and were passing through the village of Stillington when the accident happened. Deceived by the imperfect light, the driver took the wrong turning, and before he realised the mistake the car was rushing down a steep hill, at the bottom of which was a mill dam. The car could not be stopped, and it plunged into the water. Sir Francis and the valet escaped with a wetting, but unhappily Lady Winnington and the driver were pinned under the car, which had overturned. Several men ran to the spot to give assistance. On being extricated the unfortunate people were taken into the mill house. Lady Winnington was unconscious, and besides being half-drowned had sustained fracture of three ribs on the left side and concussion of the brain. She did not recover consciousness for over six hours. The driver sustained concussion of the brain and a broken jaw, and lies in a critical condition.

A NEW accumulator repairing plant has been put in the works of Messrs. Brandes and Johnstone, at Coventry.

A GARAGE has been opened in Medfield Street, Roehampton, by Mr. W. Molesworth, who also supplies petrol, etc.

MR. SMITH'S garage at Droitwich was flooded during the heavy rains of last week, the water running like a river through the premises.

IT has been decided to appoint a road surveyor for Invernesshire, to be responsible for the condition of the roads in that county, which, at present, are among the worst in Scotland.

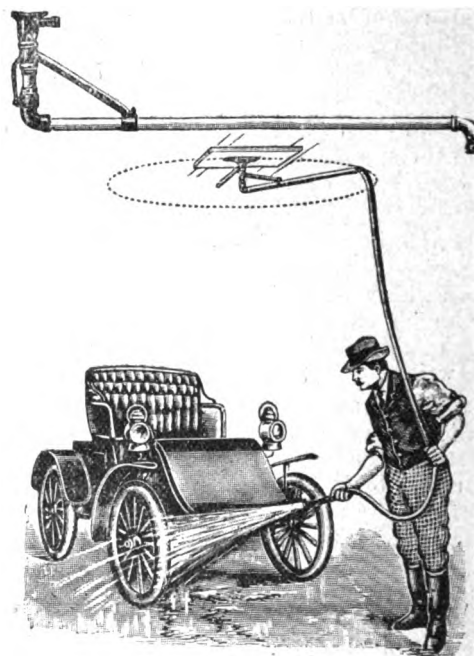
MR. GOVAN, managing director of the Hozier Engineering Company, Limited, will read a paper on "Motor-cars" before the Scientific Society of the Glasgow and West of Scotland Technical College on the 14th prox.

THE Wolseley Company are at present building a 100-h.p. petrol engine for use on the North-Eastern Railway, also a huge transport carriage weighing several tons fitted with a powerful motor for military purposes.

MESSRS. ALFRED DUNHILL, LTD., have just introduced a duplex lens headlight, which is said to give a light equal to 2,500 candle power. The lenses of the lamp are a combination of lenticular and parabolic systems, producing an intensely white, penetrating light.

AT the opening of the Worcestershire Quarter Sessions, Mr. J. W. Willis-Bund, the chairman, dealing with the statutes passed in the last session of Parliament, regretted that the registration and licensing fees for motor-cars had not been made heavier, that the cost of the regulations as to the provisions of notice boards, &c., laid upon local authorities might have been thus met, instead of falling upon the ratepayers.

AN American firm, Messrs. Ryan and Long, of Appleton, Wis., have recently introduced the special hose-supporting swivel arrangement for washing motor-cars illustrated herewith. As will be seen, it is handier to use than the old style hose and reel, and is always ready for use. The device, which is attached to the ceiling, supports the hose in such a manner that it can be carried



round the car in either direction and the stream of water directed upon any part of the vehicle. The hose is held up off the floor and is never in the way of incoming or outgoing vehicles. A very short piece of hose suffices, and as there is practically no wear on it, it will last indefinitely. The hose arm, which is of galvanized wrought iron, is $4\frac{1}{2}$ feet long, thus describing a circle nine feet in diameter. It revolves on a ball bearing.

THE USE OF OIL IN ROAD IMPROVEMENT.

(Concluded from page 638.)

BY JAMES W. ABBOTT.

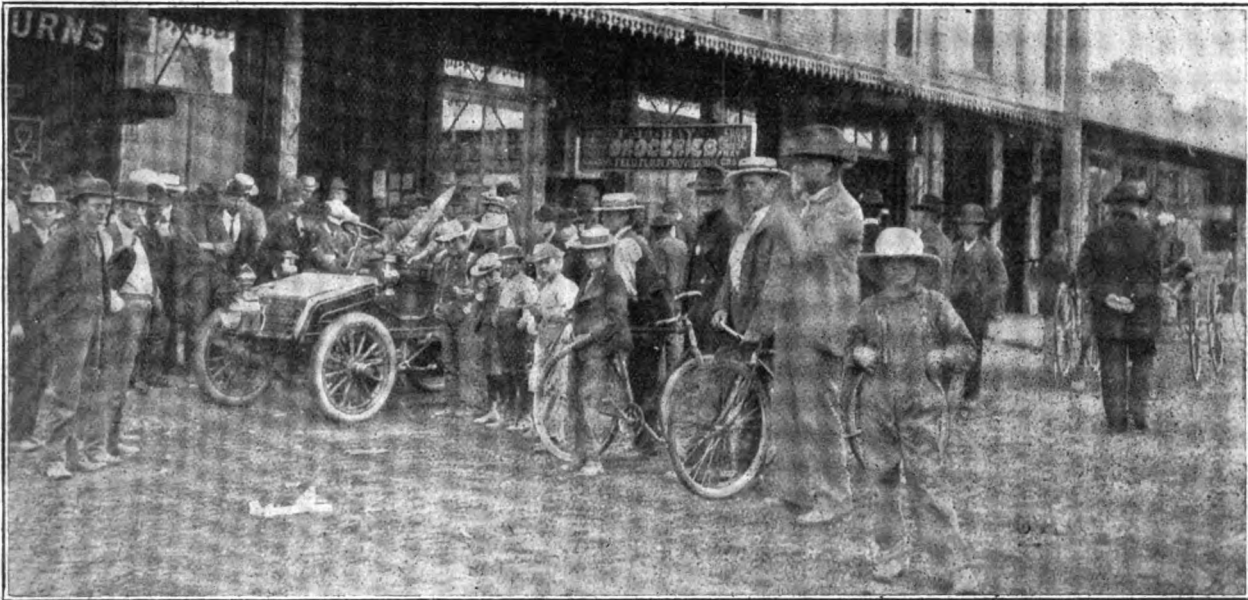
THE White sanding machine is a device for spreading the sand more uniformly. It consists essentially of a hopper and a corrugated drum mounted on an axle on two wheels and with a castor wheel in front. The sand falls on to the drum and runs out in a sheet whose thickness is regulated by appropriate mechanism. In practice, it is attached by a sort of triangular bracket to a wagon loaded with sand, carrying two men facing each other, who shovel the sand into the hopper. The wagon runs beside the oiled strip. The hopper runs on the sheet of sand which has fallen from it. When the wagon is empty, it is disconnected from the machine and replaced by a loaded wagon.

After an oiled road has been travelled over a few weeks it is an advantage to roll it with a light roller; but the best rolling effect

been properly formed, all the oil required will not exceed twenty-five barrels to the mile for repairs each subsequent year.

With an oiled road, as with macadam or any other kind, it is the constant vigilance and the stitch in time that accomplishes the best results in maintenance. It requires persistent attention. If the crust gets broken it should be repaired at once. For winter repairs it is well to mix in the autumn a lot of sharp sand or fine gravel with oil, stirring it all up with a hoe in a mortar box as mortar is mixed, and being careful not to put on so much oil that any will run away when the mixture is left standing. When a hole starts, clean it out thoroughly with a hoe or brush broom, fill the hole to a little above the adjoining surface with some of the oil and sand mixture, and thoroughly ram it.

Most of the distributors which are now made have a short hose attachment, with gate and nozzle and shut-off valve for use in repairs. When a patch appears to have too little oil, or a hole needs repairs and no oil mixture is at hand, a little oil, with this hose, can be put just where most needed, and with a rake, hoe, shovel, and rammer the difficulty is quickly remedied. In making repairs when fresh material is required, care should be exer-



Across the American Continent. A Stop at a Californian Mining Town.

is obtained if, as soon as travel begins on the newly-oiled road, a wagon is used with broad tyres (at least six inches) with front axle shorter than the rear by an amount nearly equal to double the width of the tyre.

In California, where the aim is to always use an oil containing as much asphalt as possible, the amount of oil required for a 16-foot roadway varies between 250 and 400 barrels of 42 gallons each to the mile. This depends upon the thickness of the oil crust made, the porosity of the material and the percentage of asphalt in the oil.

The quicker this oil crust is made the better. If two applications are made to a porous material and the oil properly stirred in each time, the crust will be finished. If the hard material is a clay, it should have at least two treatments. One will be sufficient for macadam. A dusty clay will require some gravel added for the first application. On the second application the crust which has begun to form should not be disturbed, but after all the oil sinks in that will, a layer of sand should be sprinkled on top. In this oiled crust the bottom will be made from the added sand, while the middle will be a mixture of the two.

In the first experiments a part of the oil was generally put on the first year, and the crust was completed the second or third year. The first year the thin crust was often broken through and a hole was left in the road. After the oiled crust has once

cised not to use any which has been subjected to travel and has refuse in it.

The White smoother is a device for shaving off elevations and filling up depressions in an oiled crust. It consists of a pair of runners sixteen feet long and four feet apart. Between them, at the front end, are set on a slant backward obliquely to the left three rows of three-quarter-inch steel harrow teeth, so adjusted that they shave along lines just one inch apart. As their edges get dull the teeth can receive a quarter or half turn and their height from the ground can be regulated. There is also a blade set obliquely which scrapes off the shavings made by the harrow teeth. These shavings, confined by the two runners and the blade, naturally seek the depressions. In the left-hand runner is an opening, through which any surplus shavings are forced out towards the centre of the road, thus tending to raise the crown.

The question will naturally be asked, "Where can oiled roads be made to advantage?" The answer certainly must be: Any place where, through long, hot, dry summers the roads become very dusty, and where water can be kept out of their foundations in the winter, so that they remain firm and do not give way beneath the oiled surface in the spring. Where the purpose is only to mitigate the dust, any crude oil or its residuum will be found efficacious.

CORRESPONDENCE.

LOSS OF POWER IN MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Being a constant reader of the *Journal* and also connected with motors, my advice may perhaps prove useful to those motorists who complain of loss of power in engines that have been in use for some time. I have had a number of motors through my hands, and in nine cases out of ten the loss of power has been due to burnt oil forming a scale on the piston head and cylinder walls, and especially in valve passages. In one case it had effectually choked the inlet valve passage; when the valve was completely open it rested on the oil scale and so choked the inlet to the cylinder.—Yours truly,

C. WHITE.

ACCUMULATOR QUERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your last issue I see a query with regard to accumulators, signed H. J. B. I venture to send the result of my enquiries and slight experience, in the hope that somebody else will follow suit and give us some more information. I believe two chief causes of sulphating are under and too infrequent charging and the raising of the sp. g. through the electrolyte being filled up with acid solution, when it often only needs water. I have come to the conclusion that voltage is only a very slight guide to amperage, and that, however high voltage there is after charging, this soon after falls to 4.2 or only 4.

Messrs. Peto and Radford, whose primary battery I use and find very satisfactory, have been very kind in answering my enquiries and tell me the acid solution generally only requires water to keep the level.

The full number of ampere hours should be charged. I think many users have the idea if the accumulators are not used they do not lose, but they require to be properly charged at least once in six weeks.

I have also come to the opinion that when two accumulators are charged from one source of current series charging is far preferable to parallel. The sp. g. of electrolyte should, I believe, read 1.190 at 3.8, and this rises to 1.200 or 1.210 when charged. This can be easily ascertained by means of a glass syringe with a piece of valve rubber on the nozzle and a small hydrometer and test tube. The colour of the plates (in celluloid cases) and the sp. g. (if in proper order) gives a good guide as to amperage. I was once told by an expert, "That you cannot get much more into an accumulator after it starts to boil." I need not say this is not quite correct. I hope some reader, more able than I am, will give his experience and correct me where I am wrong.—Yours truly,

THOMAS HALLEWELL.

WATER HEATING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have an 8-h.p. Argyll car with thermo-syphon cooling, and I cannot keep the water from boiling away. I use soft water, run on the weakest mixture, and keep on the third speed as much as I can, but I have to fill up almost every half-hour. I am thinking of fitting a small hand-pump and a tank to hold about two gallons, so that I could pump a little in when the steam warns me that the water is over-heating. Before doing this I write to ask whether any of your readers have managed to get over a similar difficulty. I have had the bonnet taken off lately and the repairer told me it was clean and free. I am afraid to let much water boil away, as after a little has gone the top tubes are above the water level, and then, there being no circulation, the water boils with great violence.—Yours truly,

H. P. A.

KIRKSTONE PASS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—By way of comment on the Rev. R. Oakley's motor-cycle tour, I write to point out that the hotel at the top of Kirkstone Pass is not 2,854 ft. above sea-level, but only 1,496 ft.; that it is not the highest in England by a long way, there being at least four higher. If the landlord really thought that Mr. Oakley's motor-cycle was the first to cross Kirkstone, he can only have been there a few days. I saw one outside the hotel on Whit-Sunday, and know that many others have been over. It would have been interesting to hear the reverend gentleman describe how he got his load of 419 lbs. up to the top of the Pass, for it is quite certain that he did not ride it. I fancy the ascent would be best described as "agonising struggles."—Yours truly,

W. FITZWATER WRAY.

SERGEANT JARRETT AND HIS ESTIMATES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—When returning from Hindhead on my motor-car on the 25th ult. I was stopped at Ripley by Sergeant Jarrett and charged with travelling over a measured distance at the rate of twenty-two miles an hour. It appears that Mr. Dunhill was likewise charged with driving his car

through Cobham (close to Ripley) at exactly the same speed. I observe that Sir Alfred Cooper was also charged by the same sergeant with travelling through Ripley at the rate of 22 miles an hour. In each case a strong protest was made against such accusation, but, needless to say, without avail. Here, then, we have three different types of cars, driven by three different persons, on three different occasions, in the same locality, and yet the alleged speed of each car is precisely the same. Can this be a mere coincidence, or has the renowned sergeant a stock speed for all alike?—Yours truly,

EDWIN JONES.

THE NEW MOTOR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I do not think Hampshire can be accused of any lukewarmness in relation to this matter, as we have already arranged to hold meetings both at Winchester and Southampton in order that the whole subject may be fully discussed and steps taken to combat the influences at work against us. It seems to me that similar meetings might with advantage be held in all the large towns, the associations formed to act as feeders to the Motor Union keeping that body informed of all that was being done in either direction. There is no doubt that at present there is a strong feeling against us in many places, and the immediate object of such associations should be to endeavour in all possible ways to influence public opinion favourably and remove the many prejudices which exist, largely from ignorance.

In order that our influence may be as far-reaching as possible, I suggest that many who are only indirectly connected with motoring should be induced to join our ranks, such as hotel proprietors, shopkeepers, etc., who are more or less benefited thereby. It is a question, too, whether we should not gain by having one large association with various aims, rather than several smaller ones—e.g., why should not the Roads Improvement Association amalgamate with us, seeing our aims and interests are so much alike? If the subscription were a small one, there is no doubt we should form a strong organization, and until we can do this I fear we shall have a very small voice in future legislation.—Yours truly,

R. W.

RADIATORS AND ACCUMULATORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The first two letters in last week's *Journal* interested me. I have a Benz, like "Novocastrian," but I think I could run 150 miles with one supply of water. Recently I made a run of fifty miles with a fall of one inch in the gauge glass, all due to a little alteration I made in the condenser, at the back of the front seat (which cost about 30s.) a sketch of which I will send if it will be of interest. My cooling water never boils. Would a radiator do better than this?

With regard to H.I.B.'s letter, I have experienced all the trouble this correspondent mentions. There may be a short circuit somewhere to account for the rapid exhaustion of his accumulators, but it is most probable, I should, from my own experience, say, that the accumulators have been injured in the charging. Only about six volts is required, but when high tension currents are employed there is risk of injury being done, owing to the trouble (not the difficulty) of intervening the right amount of resistance. It is here where the ill-treatment comes in. I charge mine myself with the Boron battery, which, with its latest improvements, is so effectual, so little trouble and expense, that I wonder at anyone bothering to send their accumulators out to be charged.—Yours truly,

J. HOPE.

P.S.—Since writing the above I have found a plate showing how to charge accumulators with a battery, but the day being dull, it has taken all day to get a print of it, leaving no time to tone and fix. I will, however, enclose it should you care to make use of it. Permit me to say I have no interest in the battery referred to.

We shall be pleased to receive the sketch our correspondent refers to.—Ed. M.-C.J.

CLUB NEWS.

SCOTTISH.

AN anniversary run in celebration of the passing of the 1896 Act has now become an annual institution with the Western Section of the Scottish Automobile Club, and on Saturday a representative gathering took place in Blythwood Square, Glasgow, and proceeded to the Auld Toon of Ayr, a place redolent with the memories of Burns and his associates, Tam o' Shanter and Soutar Johnnie. The weather was none too favourable for a full turn out, a heavy haze hanging, and the continuous heavy rains of the earlier part of the week having turned the roads at some parts into a quagmire. Over two hundred guests, however, sat down to dinner in the Station Hotel, being fully representative of the sport in the West. The police made good arrangements, showing a most reasonable and tolerant spirit, and on the steep incline at Renfield Street, Glasgow, they sprinkled sand. They also did all that was possible

at Kilma'nock and Ayr to control the crowds which gave the motorists a rousing welcome. Many of the motorists went through Ayr to the Brig o' Doun. Among those who attended the run were Dr. W. Grant, Messrs. John Adam, H. Prosser, J. W. Drysdale, A. T. Reid, Anderson, McIntyre, W. Robertson, Dr. James Luke, H. Ewing Smith, W. Kennedy, J. Denholm, J. M. Ross, W. McLean, Alec Govan, A. W. Stevens, J. Cameron, J. Watt, J. Wilson, Major McKean, Messrs. F. F. Wilson, T. Arroll, W. J. Crun, W. Agate, J. A. Johnstone, and George Barclay.

WEST SURREY.

THE run arranged by the West Surrey Club on Saturday last took the form of a paper-chase, the "hares" being Col. Fairtlough and Mr. Ponsford, on the latter's 9-h.p. Clement. Starting from the Club garage at Guildford, they took a course up the Hog's Back, making good use of their six minutes' start. At the summit, a strategically laid false scent led all the pursuers, among whom were Mr. Wilson Noble and party (14-h.p. Daimler), Miss Crothers at the helm of a 9-h.p. Darracq, Messrs. Crothers, Tessier (Argyll) King (Benz), Buttemer (10-h.p. Decauville), towards Farnham, which the leading cars reached before finding their error. Striking across country the trail was picked up by Messrs. Buttemer and Noble at Compton, and eventually the "hares" were found at the rendezvous, which they had reached twenty minutes ahead of their completely outwitted pursuers. By the use of a two-inch cardboard tube about three feet long, the "scent" was discharged near the road surface in a trail which was easy to see at a moderate speed. It is somewhat to be feared, though, that so long as it lies it may lead to a needless observance of the law by subsequent motorists following the same road, though the weather will have probably prevented any long duration of this inconvenience.

dismissed. On the other summons the defendant would be fined 5s., with 2s. costs.

NOT PROVEN.

IN the Aberdeen Police Court, John Paterson, managing director of the Caledonian Motor-car Company, was charged with having, in Crown Street and Union Street, driven a motor-car recklessly and carelessly, and collided with a bicycle ridden by James Thomson, farmer, Countesswells, with the result that the bicycle was smashed. After hearing the evidence Bailie Brown said it was somewhat contradictory. He had come to the conclusion that defendant was not driving at the fast speed which some of the witnesses had suggested. If he had been driving so fast he could not have stopped his car so quickly. He also was of opinion that the cyclist had hesitated unduly. Under the circumstances he had to find the case not proven.

THE EMISSION OF SMOKE.

AT Lambeth, S. F. Dugeon, of the Motor Carriage Works, Exeter Street, Strand, was summoned by the London County Council for using on the highway a locomotive which did not, as far as was practicable, consume its own smoke. Mr. Helman Pidsley, who supported the summons on behalf of the Council, said that the proceedings were taken under Section 30 of the Locomotives on Highways Act, 1878, the offence being the emission of the volume of smoke from a light locomotive used for drawing brewers' drays. The section of the Act required that every



Photo by

The Reliability Trials. The Police Marshalling the Cars at Brighton.

[Mr. C. Friessell.

EAST SURREY.

THE members of the above club had a most enjoyable run on Saturday last, to Horsham, where a stop was made for tea, a start being made for home about 5.30. The roads were in beautiful condition, and the entire absence of police traps was much appreciated, although one of the cars on the down journey had the honour of being "paced" for over a mile by a cycling representative of the law. Among those who took part in the run were the president, Major Kingsley O. Foster, and party (20-h.p. and 10-h.p. Ariel) Messrs. C. H. and R. Whittington (20-h.p. and 10-h.p. Wolseley), Mr. A. Makovski and party (6-h.p. De Dion, 9-h.p. Dennis), Dr. Wakefield (5-h.p. Benz), Mr. G. H. Bowden (3-h.p. Rex bicycle), Mr. Rees Jeffrey, Miss Hislop, Mr. and Mrs. Gunning Keen, Mr. and Mrs. D. J. Barry.

MOTOR-CAR "OBSTRUCTION."

MR. PLOWDEN had before him, at Marylebone, two summonses issued by the police against Evelyn Beerbohm, of 19, Dover Street, Piccadilly, for obstructing the free passage of the carriageway at Upper Berkeley Street, W., by allowing a motor-car to remain there, and neglecting to carry a light on his car. Police-constable 179 D said the car remained outside No. 48, Upper Berkeley Street, for nearly two hours, and although it was dark there was no light upon it. Mr. Plowden: Is there any limit in which a private carriage may stand in front of a private house? Suppose, for instance, this had been a doctor's carriage, would you have called it obstruction? Receiving no answer, his worship said it could not be contended that a person who paid a visit in a motor-car or carriage must leave in a specified time or be summoned for obstruction. It was ridiculous. The summons for obstruction would therefore be

locomotive used on the highways should be constructed on the principle of consuming, as far as was practicable, its own smoke. On the 12th ult., in the Brixton Road, a locomotive bearing the defendant's name was seen to emit a volume of smoke for a period of four minutes. Police-Sergeant Sutherland and Police Constable Fiddy having given evidence in support of the summons, the defendant's representative explained that the coal merchants neglected to supply Welsh steam coal as they should have done. Mr. Hopkins imposed a penalty of £3 and 23s. costs.

THE MOTOR CAR ACT.

IN view of the operation of the Motor Car Act several local authorities are petitioning the Local Government Board with a view to restrict the speed of motor-cars in their areas to the number of miles per hour indicated by the number given in brackets in the list below. The governing bodies of the following localities have definitely decided to ask the Board to restrict the speed within their districts:—

DERBYSHIRE :—	YORKSHIRE :—
Glossop (10)	Elland (6)
HAMPSHIRE :—	SURREY :—
Swaythling (6)	Ham (10)
PERTSHIRE :—	SUSSEX :—
All villages.	Midhurst (6)
HAMPSHIRE :—	SURREY :—
Lyndhurst (6)	Woking

The Ham District Council have decided to fix sign-posts warning motorists near the New Inn and in Sandy Lane.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Diss, Norfolk	G. Bury, Norwich	—	£2, etc.
"	M. Epstein, Maidenhead	25	£2, etc.
"	J. Gibbs, London, E.C.	25	£5, etc.
"	L. C. Best, London, W.	20	£4, etc.
Guildford	C. Watney, London, W.	29	£3.
"	*J. W. Orle	21½	£3.
"	*A. Napalle, Godalming	29½	£5.
"	*J. H. Deadman, Cobham	18	£3.
"	G. Dumont, London, W.	23	£4.
"	*G. Shawyer, Uxbridge	24	£4.
"	R. Jacquet, London, W.	21	£3.
"	*F. D. Montgomerie, London, W.	—	£3.
"	A. Stevens, Hendon	—	£2.
Haywards			
Heath	*H. Hunter, Paddington	28	£4.
"	H. F. Hollman, Lewes	—	£2
"	A. Fentiman, Kingston	25	£2
"	L. Vickers, Limsfield	26	£4.
"	F. Mills, Brighton	28	£5.
"	Capt. A. Hill, Bracknell	—	£10.
"	R. Snelling, Rowfant	—	£5.
Uckfield	H. Lingel, London	—	£5, etc.
"	A. Petro	—	£5.
Manchester	*C. Fletcher	—	20s., etc.
Arundel	G. Cabera	20	£3, etc.
Mark Cross	S. F. Edge	—	£2, etc.
Guildford	H. H. Hill, Sydenham	20	£2, etc.
Richmond	W. Foulger, Bloomsbury, W.C.	25	£5, etc.
Winchester	T. H. Stringer, Southampton	23	£2, etc.
"	H. J. Swindley, London	25	£2, etc.
"	E. Clayton, Bermondsey	34	£10, etc.
"	J. T. Overton, London	—	Adjourned.
"	F. Stephens, Fulham	23	£2, etc.
"	W. Williams	23	£2, etc.
Chertsey	F. Gale, Hampton	19	10s.
York	E. Hives, Earls Court, S.W.	23	£5, etc.
Knareborough	N. Wood, London	—	£5, etc.
"	V. Lee, Overton	—	£10, etc.
"	V. Cook, Ilkley	—	£5, etc.
"	L. J. Pill, Anlaby	—	£2, etc.
"	J. Petit	—	£4, etc.
Tynemouth	G. Parkinson	—	£5.
Tewkesbury	C. Martin	—	£2, etc.
Woking	Sir Alfred Cooper, J.P., Surbiton	—	£3.
Ipswich	H. Strakosch, St. James', S.W.	25	£2, etc.
"	J. Barker, London, N.W.	25	£2, etc.
Rhyl	W. B. Hill, Birmingham	20	£2, etc.
West London	Viscount Ingestre	—	£10, etc.

* Indicates Motor-Cycle Cases.

MR. J. W. ORDE was summoned at Guildford for furious driving on the Hindhead road, at Shottermill, on the 27th September. Sergeant Stevens said defendant rode a motor-bicycle at the rate of 21½ miles per hour. There were many people about. Defendant said he was the secretary of the Automobile Club, and consequently had to deal with motorists going over the regulation speed, therefore he was himself naturally most careful to keep within the proper speed. He considered himself a good judge of speed. He estimated the speed at which he was travelling at eight miles an hour. He asked the sergeant whether, considering the pedestrians, vehicles and dogs, it was possible for him to exactly time him over the distance. Sergeant Stevens: Yes, within a yard. Defendant: If you can do that, you are the man we have been hunting for a very long while (laughter). He maintained that the sergeant could not time anyone correctly over a distance of 176 yards, when standing at one end of it. The chairman said they had no doubt that defendant was travelling over the legal limit, and he would have to pay £3.

SIR ALFRED COOPER, of Surbiton, a member of the Kingston County Bench, was summoned before the Woking justices on Saturday for driving his motor-car more than twelve miles an hour at Ripley on September 27th. Sergeant Jarrett deposed that the measured 176 yards were covered in 16 sec., or at the rate of over twenty-two miles an hour. When stopped the defendant said, "I am a Surrey magistrate, and we are beginning to doubt your watches and you people, too. It is an easy matter for you men to swear to any lie and get two others to corroborate you." Sir Alfred Cooper said he was going at the rate of eight or nine miles an hour, and was astounded to find a constable holding up his hand. He stopped the car, and Sergeant Jarrett produced his stop-watch. The witness said, "I attach no importance to stop-watch evidence, for I

have seen too much of it, as I happen to be a Surrey magistrate myself." The Bench imposed the usual fine of £3, but intimated that the sergeant ought to have shown the defendant the measured distance when requested.

A NUMBER of motor-car cases were heard at the Uckfield petty sessions, on Thursday of last week, before Captain Noble (chairman), Lieut. Colonel Thompson, Colonel Todd, Mr. C. H. Corbett, and Mr. H. Clarke Jervoise. The Chairman said that the bench had hoped that the fines which had been inflicted there "would have had some effect in moderating you scorchers," but they had not done so to the extent they had hoped. In one case, it appeared that a police trap had been arranged in the chairman's grounds, although without his knowledge. The offender was fined £2.

MR. S. F. EDGE was summoned to appear at Mark Cross Petty Sessions last week, but was represented by Mr. J. E. Hart. It was stated that during the reliability trial run from the Crystal Palace to Eastbourne the defendant covered a furlong near the Court House at the rate of thirty-two miles an hour. Defendant was called upon to stop, but did not do so until two officers jumped upon the steps of the car. Mr. Hart said it was unfair to measure a short distance and time the defendant over it, and that no danger to the public had been proved. The magistrates fined the defendant £2 and 8s. costs for driving to the common danger, and £3 and 8s. costs for refusing to stop when requested.

AT Winchester, Mr. J. T. Overton, of London, was summoned for furiously driving a motor-car at King's Worthy, on September 25th, but as he sent an affidavit proving that he was in Brighton on the day he was supposed to have committed the offence, the case was adjourned for a fortnight to enable defendant to appear.

POLICE TRAPS.

TELEPHONIC communication between Dickleburgh and Scole has enabled the Norfolk police to secure several convictions at Diss.

MOTORISTS touring in Cheshire will be interested to know that between Heswall and the Queen's Ferry cross roads, on the Chester road, there is a police trap.

MOTOR-CAR ACCIDENT.

WILLIAM FRAZER, aged 18, a motor-car driver living at Bind-in-Bush Road, Peckham, surrendered to his bail at the South Western (London) Police Court, to answer the charge of furiously driving and causing injury to John Wright, a watchman, living at 23, St. Cyprian Street, Lower Tooting. After hearing evidence Mr. Garrett thought it was a case for a jury, and committed the prisoner for trial, accepting the bail of his employer for his appearance.

M. A. CLEMENT has ceased his connection with Clement-Gladiator, Limited, as from the 1st inst., but the British Automobile Commercial Syndicate, Limited, will remain his sole agents. The cars to be manufactured by M. Clement will be known as the "Bayard" cars in Paris, but will be designated the "Talbot" in this country, whether made by him at his works at Levallois-Perret, Paris, at Mezieres, France, or by Clement-Talbot, Limited, at their new works in London. The firm with which M. Clement has been connected has still the right to style its productions as "Clement" or "le Clement," and the change of title now notified by Clement-Talbot, Limited, is to prevent confusion arising in the minds of the trade.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, OCTOBER 31, 1903.

[No. 243.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



INDIVIDUAL motorists must have regard to the dangers of isolation in view of the operation of the Motor Car Act, and should avoid these by becoming associated with their fellows in an attitude of defence. To protect the rights of motorists and advance the interests of Automobilmism the Motor Union has been formed, under the auspices of the A.C.G.B.I., and already has assumed a position of importance and of usefulness. In the early days of the new legislation police errors and judicial ignorance may act adversely upon some of our readers in various parts of the country; hence the earnest warning now given as to the advisability of joining the Motor Union, so that advantage may be taken, in case of necessity, of its facilities for financial and legal assistance, as well as the right to consultation with its officials and committee on general questions affecting automobilism. The Union also places its services at the disposal of intending tourists in the selection of routes, etc., Customs formalities, hotel charges, negotiations with local authorities, and the score and one other matters of concern to those who own or drive cars. Already much good work has been achieved by the Motor Union, the secretary of which, Mr. W. Rees Jeffreys, will be glad to supply further information as to the advantages of membership to readers who communicate with him at the offices, 16, Down Street, Piccadilly, W.

A Good Test Case.

HAVING thus drawn attention to this organisation as one with which all motorists should be associated, we would make a suggestion to the Union. There is much uncertainty prevailing as to the legal status of motorists who warn others as to the presence of police traps, and, as will be seen from the next paragraph, a case has occurred where a considerate driver has fallen a victim to his own goodness of heart. This seems to have all the essential merits of a good test case, and the Motor Union might very well take up the matter with a view to securing the highest legal opinion on the point. Everyone recognises the importance of the subject, and all would be glad to know exactly what the powers of the police are in such cases. Hence our request to the Union to consider this case and to place automobilists under a debt of obligation by obtaining a judicial pronouncement which would have the effect of setting all minds at ease. Surely the motorist who warns others against breaking the law is a friend of the police; and should not be liable to the vexation of a summons, the annoyance of a police court appearance, or the wanton extravagance of a fine.

Warning against Police Traps.

At the Beaconsfield Police Court, on Monday, Mr. Percy Brennan, of Belgrave Square, W., was summoned for driving his motor-car backwards for a greater distance than was necessary on the Bath road. A constable said that he saw the defendant driving backwards and forwards for half an hour, the

distance backwards on one occasion being one hundred yards. His object was evidently to warn other motorists of the police trap further along the road. Mr. Brennan failed to appear, and the Bench issued a warrant for his apprehension. Really those who try to save others from committing illegalities ought to be regarded with some amount of respect and not as common offenders.

Correspondence.

Now that the short touring season that was allowed to motorists this year is over, and we seem to have settled down to a period of dampened enthusiasm for outdoor pursuits, readers are invited to make use of our columns for the discussion of practical points likely to prove useful when opportunities again present themselves for motoring on dry land. Not only do we invite the contribution of questions, but the experiences of readers are also requested, and it may be that they can thus clear up matters which are puzzling to others. Arrangements have been made for queries to be answered by experts in their particular subjects of study and practice, so that, in addition to being an up-to-date chronicle of the doings of the automobile world, the *Journal* will also maintain and extend the position it has won as an authority in the details of practical knowledge that go to make up the competent motorist.

Police Testimonials.

REALLY it would appear that the long feud between the police and motorists of the southern counties is coming to an end, for the Automobile Club has received a batch of letters from chief constables all testifying to the satisfactory nature of the arrangements made in connection with the recent Reliability Trials and the excellent behaviour of the drivers of the cars. The Chief Constables of Winchester, Brighton, Eastbourne, Portsmouth and Maidstone have written to this effect, and the only comment we have to offer is to remind these kind officials of the exciting run from Winchester on the last day but one of the trials.

Bournemouth Automobile Association.

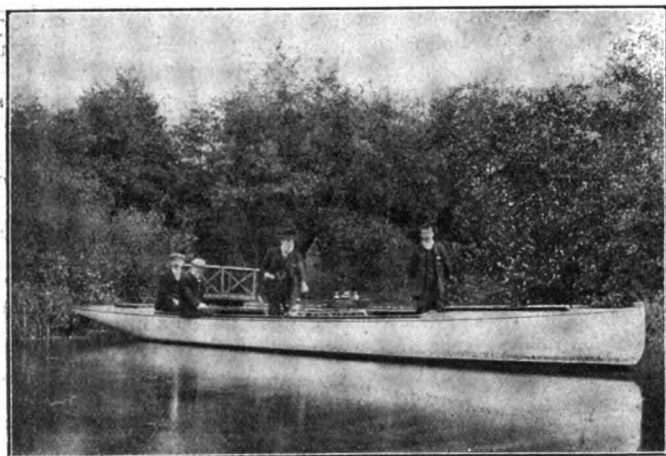
HAMPSHIRE motorists are proving extremely active in view of the forthcoming operation of the Motor Car Act. Meetings have been held at Portsmouth and Winchester, and now comes the news that the Bournemouth Automobile Association has been formed, with Dr. J. R. Thomson, Dr. Harold Simmonds, Dr. H. Nankivell, and Mr. H. E. Acklom among its first list of members. Motorists travelling through the county will be in some strange quandaries, and the County Council might usefully seek to secure something like uniformity in the suggestions of the various smaller bodies within its area. Portsmouth has decided not to have a ten-mile speed limit, and the Bournemouth Town Council proposes at present only to put up notice of dangerous corners. On the other hand, the Christchurch Town Council is proposing a speed limit of ten miles an hour, and other neighbouring bodies are advocating similar restrictions. There is plenty of educational work to be done by the Bournemouth Automobile Association in that part of the country.

The Proposed Federation.

MR. NEWTON, the hon. secretary of the Reading Automobile Club, writes with regard to the proposed federation of existing clubs informing us that favourable replies continue to reach the originators of the plan. Considerable discussion has been aroused by the publicity given the idea, and the secretary of the Reading Club evidently anticipates that its realisation would secure a more influential standing for the provincial associations, which have, he contends, given up some of their independence by becoming affiliated to the London body. So great is the development of automobilism in the country that some such scheme as that now before motorists was inevitable.

Marine Motoring.

ON Thursday, at the A.C.G.B.I., Mr. Bernard Redwood read a paper on marine motoring—a subject which is becoming as fascinating as rapid travel on land. In fact, motoring seems but a step to the airship or the motor-launch. Mr. E. Estcourt is well known as one of the most enthusiastic motorists in the eastern counties. He is also an ardent yachtsman and hopes to combine both pleasures now that he has a motor-launch. This new boat is built on fine lines, and is fitted with a six-cylinder Brooke petrol motor giving 26-h.p. on the brake when running at 900 revolutions per minute. Our photograph of this 34 ft.



launch was taken on Mr. Estcourt's private water adjoining Wroxham Broads, Norfolk. The owner is standing in front of the rustic bridge.

A Motor-Van in Court.

MR. JUSTICE GRANTHAM, sitting in the High Court of Justice, had directed that a motor-van should be brought within the precincts of the court to enable the jury to decide for themselves whether it was of such a description as to be calculated to frighten horses. The vehicle is the property of the Kannenbeer Supply (London), Limited, against whom an action is being brought as the result of a carriage accident, and it duly appeared at the Law Courts on Tuesday. The case, however, was not reached, and the motor-van had to make a second appearance on the following day.

Scouts at Trials.

POLICE traps were such a feature of the Reliability Trials of the A.C.G.B.I., and there were so many victims, that we would suggest a fund should be established to meet the expenses of defence and the amount of fines on future occasions. All engaged on such runs incur the risk of being caught, although they may be only carrying out the official

regulation with regard to speed. Should a car happen to be at the head of a single file of competing vehicles, its driver will probably be stopped, while the others will profit by the warning. Thus it would seem fair that all competitors should place their names to a guarantee fund which could be drawn upon by any competitors convicted while travelling in accordance with rules. The fund might also be employed to engage one or two cars to make preliminary inspections of the roads, and to act as scouts, thus frustrating the intentions of the police.

An Illustration.

AN illustration of the foregoing suggestion comes in the case which was heard at the Alton Petty Sessions on Tuesday, when Mr. W. C. White, managing director of the White Steam Company, was fined for driving a motor-car in the recent Trials at an alleged excessive speed. The police stated that the car travelled over a distance of 352 yards in 38 seconds, as timed by a stop watch. They denied that any other car was in proximity to that of the accused, but four witnesses swore there were ten or twelve cars all within a few yards of each other. These witnesses also declared that when the car stopped the police charged Mr. White with covering 135 yards in 35 seconds, which would work out at under seven miles an hour. An Observer of the Automobile Club, whose duty it was to see that the cars did not exceed a limit of eight miles an hour while within a "control area," stated that the car was actually stopped in a "control area" by the constables. The bench decided to rely upon the police evidence, and imposed a fine of 40s. What a travesty of justice!

America's Reliability Trial.

THE American Reliability Trial, organised by the National Association of Automobile Manufacturers, took place from the 7th to the 15th inst., the distance of 793 miles being covered in eight daily stages. Out of 42 entries only 34 started, of which 20 finished, notwithstanding that the state of the weather and roads, almost throughout, were of the worst description possible. There was almost continuous rain during the first four days, which flooded the valleys through which the route lay, adding considerably to the natural difficulties of the route. The result was that after the first night only a small fraction of the actual contestants succeeded in reaching the specified night control—some running all night, and some stopping at intermediate points. Long detours were found necessary by some of the delayed cars to avoid washed-out roads and on account of bridges which had been swept away by the flood. To give an idea of the extent of the downpour and the consequent floods, it may be stated that the rainfall in New York on the second day of the contest was the greatest ever recorded. The entries comprised petrol cars of the following makes:—Columbia, Peerless, Toledo, Stevens-Duryea, Phelps, Arrow, Pierce, Packard, Rambler, Fredonia, Searchmont, Covert, Knox, Franklin, Haynes-Apperson, Northern, Stearns, Locomobile, Holley, Springer, Oldsmobile, and St. Louis. The only steam cars competing were those of the White Company. A noticeable feature of the entry list is that all the vehicles were of American manufacture, not a single foreign-built car competing. The extreme weather conditions necessitated some modifications in the rules. It was soon found that if each car which failed to arrive by midnight was disqualified there would be too many disqualifications, and this rule was therefore rescinded. It was also concluded that the terrible plastering of mud on the cars after several days' run through clay and dirt, into which the wheels sometimes sank a foot deep, could not fail to seriously affect the operation of the mechanism, however well the more delicate parts were enclosed, and it was therefore decided to allow the machines to be cleaned on the intervening Sunday. No official results are at present available, but, according to telegraphic advices, the first three places have been secured by the two-cylinder Toledo, a single-cylinder Pierce and a White steam car.

Names as well as Numbers.

THE Lord Chief Justice Clerk of Scotland, in the letter he addresses to our Correspondence columns, advocates the use of names as well as of numbers on motor-cars, and probably some English readers may wonder why his Lordship does not also propose to have the address of the owner painted in conspicuous letters. Doubtless the new legislation will cause many suggestions to be made with regard to the future, and it is well that these should be made early, for the consideration of all concerned. But we must be careful that too much is not painted on the cars, else their panels will appear as full of information as the contents bill of a daily paper.

Motor-Bus Licences in London.

MOTOR vehicles may now be regarded as a feature of the annual reports of the Commissioner of Metropolitan Police. They do not bulk largely as yet, but they are an increasing quantity, while it is significant that the number of licences issued to drivers of horse-drawn omnibuses in London last year was 3,667 as compared with 3,736 in 1901, and 3,681 in 1900. The first year that licences were issued for drivers of mechanically-propelled vehicles was 1899, when five were registered at Scotland Yard. In the following year four licences were granted to such vehicles, in 1901 the number was increased to ten, and last year twenty-nine licences were granted. Now that we know about the licences we want to see the motor-buses.

The Liability of Innkeepers.

THE case at the Preston Quarter Sessions in which a motorist has taught a Lancashire innkeeper a lesson and demonstrated to hotel-keepers generally their duties, is of considerable interest to travellers. Apparently, there was really no defence of the refusal of the Lytham innkeeper to accommodate the unfortunate wayfarers who found themselves in that inhospitable region in consequence of the vagaries of their motor-car. As a rule, hotel-keepers seem only too pleased to receive motorists, and subsequently to hand them bills which do not err on the side of modesty. The refusal of Mr. Earle to find lodgings for Mr. Todd is not likely to be repeated, and the legal action resulting should not be forgotten by motorists when on tour.

The New Motor-Car Regulations.

THE forecast we are able to give on another page of the regulations which the Local Government Board intend to make under the Motor Car Act is of more than ordinary interest. The question of the size of the numbers will probably be the first point for which readers will look, and here we may say the present idea of the Board is that the numbers shall be white in colour on a black rectangular plate. Each number will have to be of a uniform height of four inches, of an average width of three inches, and of a uniform thickness of one inch. For the details as to spacing, etc., readers are referred to the forecast itself.

An Innovation of Importance.

AN innovation is about to be made which may form the precedent for important developments in the future. One of the regulations gives power to the County or Borough Councils to dispense with one of the two plates ordinarily required on cars, should they be satisfied that the vehicle cannot go more than twelve miles an hour on a level road. More than that, the other plate may be reduced to not less than one-sixth of the prescribed dimensions in such a case. A little experience of such a regulation may easily warrant the authorities to make the limit of speed twenty miles, and to then allow both plates to be ignored. Thus it would seem we are on the way to reason, and

that, as we have all along urged, a wise administration may do something to ease the feeling of irritation occasioned by the proceedings in Parliament earlier in the year.

Wolverhampton Club's Hill-Climbing Competition.

On Saturday last the Wolverhampton Automobile Club held a hill-climbing competition at Hermitage Hill, Bridgnorth, this being preceded by a luncheon over which Mr. S. R. Rhodes, the hon. secretary, presided. He testified to the help received in arranging the event from the Town Clerk, Borough Surveyor, and Superintendent of Police of Bridgnorth. The Town Clerk proposed, "Prosperity to the Wolverhampton and District Automobile Club." The competitions, as already stated, were open only to members of the club, and each car had to be the bona-fide property of the entrant, and driven either by a member or the owner's mechanic. Prizes were offered to the fastest cars, and one prize to the fastest motor-cycle. There was a large crowd of spectators gathered on the hill, and Mr. William Clarke (Motor Manufacturing Company), who entered a 20-h.p. car, did the best time performance, his ascent taking 2 min. 0.2-5 sec. Mr. F. W. Bayliss was second, his 20-h.p. Wolseley car completing the journey in 2 min. 13 sec. The particulars of the competition have been sent to the official handicapper, whose adjudication as to prizes is now being awaited.

The Governing of Gas and Petrol Engines.

ON another page we give a summary of the paper by Mr. Dugald Clerk on this subject at the Automobile Club on Thursday of last week. Mr. Lyons Sampson and Mr. W. Beaumont gave their testimony, in the course of the discussion, to its value, the former joining with the author in condemning governing by ignition, and the latter urging the need for greater simplicity in connection with automobile engines. Colonel Crompton, who also spoke, referred to the success of the steam-driven cars in the recent reliability trials, and deprecated the many complications that had been introduced into petrol engines. Mr. C. W. S. Crawley having concluded the discussion, a hearty vote of thanks was accorded to Mr. Clerk on the motion of the chairman, Mr. Roger Wallace, seconded by Mr. R. E. Phillips, who mentioned that the author of the paper was devoting considerable study to the improvement of the petrol motor.

THE Marquis de Chasseloup-Laubat has presented a cup to the A.C.F. for a race between light cars.

MR. THOMAS ANDERSON has been appointed general manager of the Road Carrying Company, Limited.

WE congratulate Mr. Staplee Firth on getting about again after having undergone a somewhat serious operation.

MR. C. HOLMES, the Master of the Worshipful Company of Coachmakers, is offering prizes of ten guineas for drawings of motor-cars.

AN inquiry into the speed of the London United Electric Co.'s trams was conducted by the officials of the Board of Trade, in the Goldhawk Road, W., on Wednesday.

THE City and Suburban Electric Carriage Co., of Niagara Hall, Westminster, will be among the exhibitors at the ninth annual International Motor-Car Exhibition at the Agricultural Hall, London, N., in March next.

AT Wigan County Police Court on Wednesday, Edward Whitbread, of Lexham Mews, Kensington, was brought up on a charge of manslaughter. Accused was stated to be the driver of the motor-car which killed a child at Ashton, near Wigan, on September 26. He gave evidence on Tuesday night at the inquest, when the jury returned a verdict of accidental death, and censured him. At the police court he was remanded for eight days, bail being allowed.

THE MOTOR-CAR ACT.

—*—

FORECAST OF THE LOCAL GOVERNMENT BOARD'S REGULATIONS.

IN accordance with the Locomotives on Highways Act of 1896, and the Motor Car Act of 1903, the Local Government Board has power to make regulations with regard to the registration of cars and licensing of drivers. Motorists generally are anticipating with considerable interest the scope and tenor of these Regulations, the spirit of which will so largely affect the character of the legislation which is to come into effect in January next.

Already we have mentioned that the Board has practically decided that the measurement of the roadway shall be taken as between hedge to hedge for the purpose of Clause 8, which deals with the 16-foot roadway, about which there has been so much discussion.

REGISTRATION OF CARS.

The Regulations which the Local Government Board intend to make will provide that the Council of all counties and county boroughs shall establish and keep a Register of Motor-Cars. So

Should the ownership of a registered car be changed, the existing registration will be deemed to be void, until the new owner makes a fresh application. If this is sent to the Council with whom the automobile was previously registered, a fee of 10s. for cars, and 2s. 6d. for motor-cycles, will be charged.

The Council will not be allowed to assign the same number to more than one car registered under the same index letter or letters, unless they have previously satisfied themselves that it is destroyed or permanently removed from the United Kingdom, or should the owner express, in writing, his desire to cancel the registration.

IDENTIFICATION PLATES.

An important point will be that dealing with the plates to be fixed to the cars. These will have to be black in colour, and rectangular in shape. The letters and figures will have to be clearly delineated in white characters upon each plate, the registered number being in Arabic figures. The index letter or letters of the Council will have to be placed in a horizontal line, not less than half-an-inch below the upper side of the plate, and parallel to and above the figure or figures of the registered number, with the uniform space of one inch intervening between the bottom of the letter or letters,



Photo by)

Motoring in the Floods on the Great North Road.

(J. T. Newman, Berkhamsstead.

far as "motor-cars not being motor-cycles" are concerned, this will have to give the following particulars:—

1, Index letter or letters of Council; 2, registered number of motor-car; 3, full name of owner; 4, postal address of owner; 5, make or type of engine or car; 6, number of cylinders of engine or car; 7, horse-power of engine; 8, type of body of car; 9, weight unladen; 10, colouring; 11, seating accommodation; 12, whether used or intended for use as stage carriage or as hackney carriage; and 13, date of registration.

As regards motor-cycles, information equivalent to the first four particulars required in the case of motor-cars will be required, together with the type of motor-cycle and the date of registration.

Owners of cars, desirous of registration, will be required to forward to the Council of the county or county borough the necessary particulars to be specified in the Register of Motor-Cars, together with 20s., in the case of motor-cars, or 5s. for motor-cycles. The Council will then register the vehicle, giving each a separate number. The owner will be furnished with a copy of the entries in the Register of Motor-Cars relating to his own vehicle, and also with the plates, forming the identification marks. For these plates, a fee will be chargeable, the amount of which will most probably be fixed by the Local Government Board itself. Before using the car on a public highway, the owner will have to fix the plates in such a position as the Council which supplies them may direct.

It will be open to the owner of a motor-car to amend the entries with regard to his vehicle, and for this no fee will be chargeable.

and at the top of the figure or figures. These letters and figures will be required to be of a uniform height of 4 inches, an average width of 3 inches, and of a uniform thickness of 1 inch, with a space of not less than $\frac{1}{2}$ inch between the adjoining letters or figures.

The Local Government Board will also require that the space intervening between the letters and figures and the two vertical sides of the plates shall be equal in width with a space of not less than $\frac{1}{2}$ inch between the bottom of the lower line of figures and the lower side of the plate.

In order to prevent confusion, no letter, figure, design, or other mark of any kind, must be placed upon the plate or on the car, within 2 feet of such plate.

The foregoing regulations with regard to the size of plates affect cars only. Those for motor-cycles will have to be exactly half of these dimensions.

The regulations will require that every car in public use shall carry two identification plates, one on the front, and the other on the back of the car. These plates will have to be fixed in an upright position, so that the upper and lower sides of the plate shall be horizontal, the letters and figures being clearly and distinctly legible both in front and on the back.

An important point will be introduced by the permission to dispense with the plate on the front of the car, and the reduction of that on the back of the car to a size not less than one-sixth of

of the dimensions already mentioned, should the Council satisfy themselves that the vehicle is not capable of travelling at a greater speed than 12 miles an hour on level ground.

Whenever the vehicle is driven or remains stationary on a highway, between one hour after sunset and one hour before sunrise, lamps will require to be fixed so that the plates on the car shall be illuminated in a way sufficient to secure the letters and figures being easily legible from in front and behind the automobile.

When another vehicle is attached to a car, either in front or behind, the plate will have to be conspicuously displayed on the front or on the back of the vehicle propelled or drawn as the case may be.

THE TRADER'S MARK.

In Section 2 of the Act of 1903 provision is made that the Council might assign to any manufacturer of, or dealer in motor-cars for use in connection with motor-cars on trial after completion, or on trial by an intending purchaser, a general identification mark. This the Local Government Board will require shall consist of the index letter or letters of the Council, and not more than three other letters. The register of such general identification mark will be kept by the Council, and the manufacturer or dealer shall assign a temporary number to any unregistered motor-car, in order to distinguish such vehicle from any other motor-car belonging to him and similarly used. This temporary number will require to be of the same dimensions as the numbers on private cars. The dealer or manufacturer will have to keep a book containing a record of every car belonging to him so used upon the highway, giving a description of the vehicle, the dates on which it is used, the name of the person in charge, and the temporary number assigned on every such occasion. This record will have to be produced for inspection when demanded by a police constable, and should the Council be satisfied that the manufacturer is not observing the general regulations, this mark may be withdrawn.

LICENSING DRIVERS.

With regard to the licensing of persons to drive motor-cars or motor-cycles, the applicant shall furnish the Council with particulars as to name and address, etc., together with the fee of 5s. provided for by the Act of 1903. Anyone not resident in the United Kingdom may apply to the Council of any County or County Borough for a licence or for the renewal of same, but no one shall at any time hold more than one licence.

All applicants for licences will have to fill up a schedule requiring the following information:—

1. Whether application is for licence to drive a motor-car, or to drive a motor-cycle. 2. Whether applicant is less than seventeen years of age; if so, date of birth. 3. Whether applicant holds a licence. 4. Whether applicant has at any time previously held a licence. 5. Particulars of any licence, or licences, previously held by applicant. 6. Particulars of any endorsement on any licence or licences held by applicant. 7. Whether applicant has at any time been disqualified for obtaining a licence; if so, particulars as to the Court by whom, the date on which, and the period for which the disqualification was imposed. 8. Full name of the applicant. 9. Occupation of applicant. 10. Postal address of applicant.

REGISTER OF LICENCE.

A register of licences will have to be kept by the Council stating particulars as to the names and addresses of holders of licences, period of operation, particulars of convictions of holders, particulars of endorsement or suspension, etc. These particulars will be supplied free of charge to licensing authorities under the Act, to police authorities, or to police constables upon application.

Upon application from any court the Council shall give particulars of any conviction of the holders of licences granted by them free of charge to the police authorities for the area in which the holders of such licences reside.

FROM the Cullman Wheel Company, of Chicago, comes a list of the automobile sprockets of which they are now making speciality.

SCHEDULE OF PROPOSED INDEX LETTERS OF COUNTY AUTHORITIES.

Authority.	Index Letter or Letters.	Authority.	Index Letter or Letters.
County Council of Cambridge	C.B.	Council of the County Borough of West Bromwich	D.U.
County Council of West Suffolk	O.C.	County Council of the Isle of Ely	D.W.
Council of the County Borough of Derby	C.D.	County Council of Westmorland	D.X.
County Council of Hereford	G.E.	Council of the County Borough of Warrington	D.Y.
Council of the County Borough of Preston	C.F.	Council of the County Borough of Grimsby	D.Z.
Council of the County Borough of Norwich	C.H.	Council of the County Borough of West Hartlepool	E.A.
Council of the County Borough of Birkenhead	C.J.	Council of the County Borough of Hanley	E.B.
Council of the County Borough of Gateshead	O.K.	County Council of Cardigan	E.C.
Council of the County Borough of Plymouth	C.L.	Council of the County Borough of Wigan	E.D.
Council of the County Borough of Halifax	C.M.	Council of the County Borough of Bournemouth	E.E.
Council of the County Borough of Southampton	C.N.	Council of the County Borough of Bolton	E.F.
County Council of the Parts of Kesteven	C.O.	Council of the County Borough of Bury	E.H.
Council of the County Borough of South Shields	C.P.	Council of the County Borough of Burnley	E.I.
Council of the County Borough of Barley	C.R.	County Council of Montgomery	E.K.
Council of the County Borough of Huddersfield	C.T.	Council of the County Borough of Rochdale	E.L.
Council of the County Borough of Swansea	C.U.	County Council of Brecknock	E.M.
Council of the County Borough of Wolverhampton	C.W.	County Council of Huntingdon	E.N.
Council of the County Borough of Stockport	C.X.	Council of the County Borough of Great Yarmouth	E.O.
Council of the County Borough of Middlesbrough	C.Y.	County Council of Anglesey	E.P.
County Council of Pembroke	C.Z.	Council of the County Borough of Parnassus	E.T.
Council of the County Borough of Northampton	D.A.	Council of the County Borough of Bath	E.U.
Council of the County Borough of Walsall	D.B.	Council of the County Borough of Oxford	E.V.
Council of the County Borough of St. Helens	D.C.	Council of the County Borough of Dudley	E.X.
Council of the County Borough of Rochdale	D.E.	Council of the County Borough of Lincoln	E.Y.
County Council of the Isle of Wight	D.F.	County Council of Merioneth	E.Z.
County Council of Flint	D.H.	Council of the County Borough of Gloucester	F.A.
Council of the County Borough of York	D.J.	Council of the County Borough of Exeter	F.B.
County Council of the Parts of Holland	D.K.	Council of the County Borough of Worcester	F.C.
Council of the County Borough of Reading	D.L.	County Council of the Soke of Pembrokeshire	F.D.
Council of the County Borough of Devonport	D.M.	Council of the County Borough of Chester	F.E.
Council of the County Borough of Coventry	D.N.	Council of the County Borough of Canterbury	F.F.
Council of the County Borough of Newport (Mon.)	D.O.	County Council of Radnor	F.H.
Council of the County Borough of Ipswich	D.P.	County Council of Rutland	F.J.
Council of the County Borough of Hastings	D.R.		
London County Council	A.	County Council of Cumberland	A.N.
County Council of Lancaster	B.	County Council of East Sussex	A.O.
County Council of the West Riding of Yorkshire	C.	County Council of Hertford	A.P.
County Council of Kent	D.	Council of the County Borough of Kingston upon Hull	A.R.
County Council of Stafford	E.	Council of the County Borough of Nottingham	A.T.
County Council of Essex	F.	County Council of Salop	A.U.
County Council of Middlesex	H.	County Council of Monmouth	A.W.
County Council of Durham	J.	County Council of Leicester	A.X.
Council of the County Borough of Liverpool	K.	Council of the County Borough of Salford	A.Y.
County Council of Glamorgan	L.	Council of the County Borough of Newcastle-upon-Tyne	A.Z.
County Council of Chester	M.	Council of the County Borough of Leicester	B.A.
Council of the County Borough of Manchester	N.	County Council of Northampton	B.B.
Council of the County Borough of Birmingham	O.	County Council of the Parts of Lindsey	B.C.
County Council of Surrey	P.	County Council of Dorset	B.D.
County Council of Derby	R.	County Council of Bucks	B.E.
County Council of Devon	T.	County Council of East Suffolk	B.F.
Council of the County Borough of Leeds	U.	Council of the County Borough of Portsmouth	B.H.
Council of the County Borough of Sheffield	W.	County Council of Berks	B.I.
County Council of Northumberland	X.	County Council of Bedford	B.K.
County Council of Somerset	Y.	Council of the County Borough of Bolton	B.L.
County Council of Southampton	Z.	Council of the County Borough of Cardiff	B.M.
County Council of Worcester	A.A.	County Council of West Sussex	B.N.
County Council of Warwick	A.B.	Council of the County Borough of Sunderland	B.O.
County Council of Gloucester	A.C.	County Council of the East Riding of Yorkshire	B.P.
Council of the County Borough of Bristol	A.D.	Council of the County Borough of Oldham	B.R.
County Council of Cornwall	A.E.	County Council of Oxford	B.T.
County Council of Norfolk	A.F.	County Council of Carmarthen	B.U.
County Council of the North Riding of Yorkshire	A.H.	Council of the County Borough of Croydon	B.W.
Council of the County Borough of Bradford	A.J.	County Council of Denbigh	B.X.
County Council of Nottingham	A.K.	Council of the County Borough of Blackburn	B.Y.
County Council of Wilts	A.L.	County Council of Carnarvon	B.Z.
Council of the County Borough of West Ham	A.M.	Council of the County Borough of Brighton	C.A.

CONTINENTAL NOTES.

PEACE once more reigns in French automobile trade circles with regard to the team for the 1904 Gordon Bennett race. The way for a solution of the difficulty was to a large extent cleared by Messrs. Panhard and Levassor notifying Baron de Zuylen, the president of the A.C.F., that, while feeling honoured at being awarded a place in the team without trial, they preferred to take their chance with other competitors in an eliminating contest. The all-important question was decided at a full meeting of the A.C.F. committee last week, when, after considerable discussion, the principle of an eliminating trial for all the three places was adopted. The organisation of the con-

speed of 100 kil. (62½ miles per hour); and (3) if it fails to start in the eliminating contest.

ALTHOUGH nothing is as yet definitely settled with regard to the course over which the 1904 Gordon Bennett race will be run, the municipal authorities of Homburg are leaving no stone unturned to secure it for their district. To this end they have just voted a sum of £500 towards the cost of organising the race, while the local hotel-proprietors' association have promised a similar sum.

As briefly reported last week, the track race meeting of the German Automobile Club on the 18th inst. was robbed of its importance by the bad weather which prevailed. The five mile



The start of the 5-mile Race for Cars up to 12-h.p.



The 10-mile Professional Race for Cars over 30-h.p. Ready to start.

THE TRACK RACE MEETING N BERLIN.

test has been placed in the hands of the Commission Sportive. The question now to be decided is as to when and where the trial shall be held.

THE Sporting Committee of the Belgian Club has also definitely decided to hold an eliminating test to select the Belgian team for the Gordon Bennett race, and has chosen the Circuit des Ardennes course for the event. The entry fee for the trial race is 5,000 fr. (£200), £40 of which will go towards the cost of organising the trial, while the balance of £160 will be held as a guarantee of good faith, and will not be returned if (1) the car is not entirely of Belgian manufacture (2) if it fails to attain a

race for cars up to 12-h.p. was won by Gossi on a 7½-h.p. N.A.G., in 11 min. 48 sec. Kruger on a 11-h.p. Durkopp did the distance in 11 min. 26 sec., but was disqualified. A ten mile race for cars up to 19-h.p. brought out a field of nine starters, Mathis on an 18-h.p. De Dietrich carrying off the first place in 19 min. 54 sec. There were also nine starters in the ten mile race for cars up to 30-h.p., the victory in this event falling to A. Ordt on Count Schonborn's 28-h.p. Mercedes (time, 18 min. 15 sec.). There were only four competitors in the ten mile race for cars over 30-h.p.—a 40-h.p. Mercedes and three De Dietrichs, the first named, driven by Pöge, securing a victory in 15 min. 51 sec. The ten mile professionals' race with vehicles

up to 30-h.p. was won by Beconnais on an Opel-Darracq in 19 min. 22 sec.; while in a similar event for cars over 30-h.p. Muller on a 40-h.p. Mercedes made the best time of the day—13 min. 39 sec.

ALTHOUGH little has been heard lately of the Automobile Club of Algeria, its officials have an active programme in hand for the winter season. A beginning will be made on November 22nd by a 100 kilometre road race for cars under 9-h.p. for the Gerin cup, while a further race is to be run off on November 29th. It has been suggested that the eliminating contest for the French team for the Gordon Bennett race should be held in Algeria, where, it is stated, a 500-kilometre circuit could be found in which no neutralisations would be necessary.

THE much-heralded kilometre races on the Dourdan road, organised by "Le Monde Sportif," which should have been held on Thursday last week, were utterly spoiled by the rain, and after a few of the motor-cycle and touring car events had been run off, it was reluctantly decided to postpone the meeting for a fortnight. When the entry list finally closed, it contained the names of no less than 117 competitors. The weighing-in operation took place on Wednesday in pouring rain, and when Thursday

to £320 brought out three starters, Gabreau on a 12-h.p. Boyer being first in 58 1-5 sec., Renaux on a 10-h.p. two-cylinder Peugeot second in 1 min. 9 sec., and De Cardignan on a two-cylinder Bardon with Roussel spring wheels third in 1 min. 31-4-5 sec. Rain now came down in torrents, causing the competitors and spectators to make for shelter, and, as the skies promised no early improvement in the weather, the decision to postpone the meeting until Thursday, November 5th, was hurriedly arrived at.

THERE seems a possibility that official sanction will be given to the annual hill-climbing competition at Gaillon, organised by "l'Auto." The date proposed for the event is November 8th.

M. J. COUTANT, who some time ago was entrusted by the technical committee of the French extra-Parliamentary Commission appointed to inquire into the best methods of dealing with the circulation and control of self-propelled vehicles in France, with the drawing up of a report upon the speed limit, has now finished his task. In his report M. Coutant recommends that on level country roads a speed of 60 kils. (37½ miles) per hour be permitted, and in towns and villages 20 kils. (12½ miles). He further recommends that only types of cars which have been



Madame Clouet and her Knapp Motor-Bicycle.



Sencier on the Moto-Cardan.

THE DOURDAN KILOMETRE TRIALS.

morning broke the prospect was anything but bright. According to the programme, a start should have been made at 8 a.m., but it was not until 10.15 a.m. that it was decided to send off the competitors. Out of thirty-seven entries in the quart-de-litre motor-cycle section, only nine started, the winner being Momo on a Peugeot, who covered the kilometre in 47 1-5 sec. The machine was fitted with a single-cylinder engine 66 mm. diameter by 73 mm. stroke. Lanfranchi, on a similar machine, took the second place with 48 sec. to his credit, while the third place was taken by Sencier on a Moto-Cardan in 49 2-5 sec. This is a novel machine, having a single cylinder engine 66 mm. diameter by 70 mm. stroke, the novelty lying in the transmission. As will be seen from the photograph herewith, the motor is set at right angles to the usual position and transmits its power to the rear wheel through a clutch, universally-jointed shaft, and bevel gearing. One of the motor-cycles, a Knapp, was ridden by a lady, Madame Clouet, who secured the seventh position. The engine of her machine has a cylinder bore of 67 mm. by 70 mm. stroke, and, as will be seen from the illustration, transmits its power to the rear wheel direct.

THE two-seated touring cars costing less than £160 were next sent off, but as the times were not all taken this event will be run again. The class for four-seated cars costing from £160

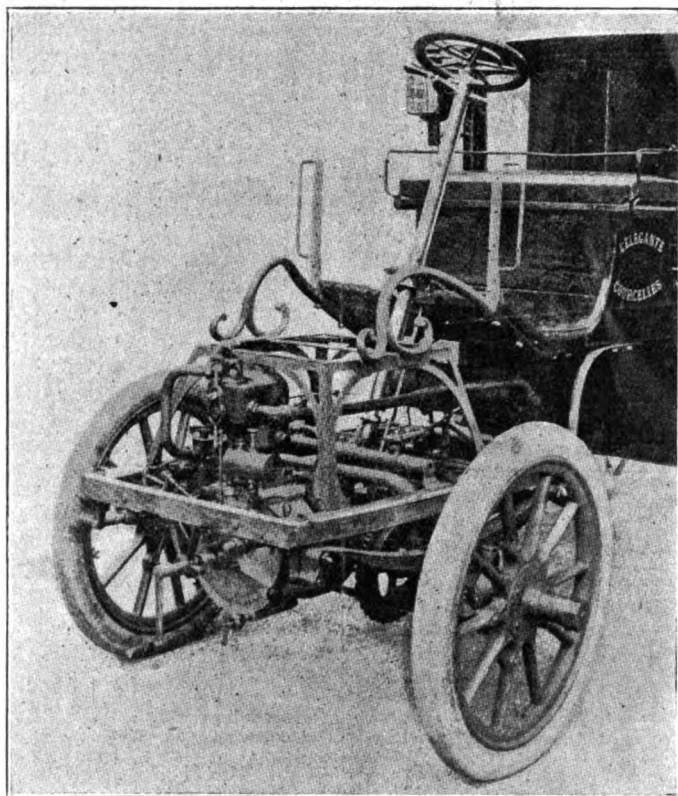
passed by the "Service des Mines" be allowed to be used on the public highway, and that the Service des Mines be instructed to refuse authorisation to any car capable of exceeding a speed of 60 kils. per hour on the level. He also advocates special licences being issued to competent racing men and special racing cars, and that races under restrictions be permitted, as he considers that it is by this means the steady progress of automobilism will be maintained, and the entire industry benefited thereby. The report has naturally met with the approval of motorists, but it remains to be seen how far the Government will endorse these views when the question is finally dealt with.

THE feat of Capt. Deasy in climbing the Rochers de Naye on his "Martini" car seems likely to be followed by a series of hill-climbing attempts. M. Rougier has opened the ball by establishing a new record up Mont Ventoux on his Paris-Madrid Turcat-Mery racer. His time for the ascent, which was officially checked, was 24 min. 50 1-5 sec., as against the previous best of 27 min. 17 sec. The hill is 21½ kilometres long, during the course of which it rises 1,500 metres. The last 500 metres of the road were covered with thick snow.

FOLLOWING the practice adopted last year of sending one of their 6-h.p. Popular cars on a long tour, Messrs. De Dion and Bouton have just despatched M. Cormier on a similar journey—

this year on one of their new 10-h.p. two-cylinder cars. The itinerary mapped out is through France and Spain, Algeria, Tunis, Italy, Austria, Germany, and Belgium, a total distance of roundly 3,900 miles. Cormier is expected to be back again in Paris in time for the *Salon*.

THE A.C.F. motor-cab and delivery vehicle trials came to an end on Friday last week. Little interest was, unfortunately, taken in them, either by the trade or the public. In the cab



The Collin Avant-Train.

[La Vie Automobile.

section only five cars were entered, and all of them completed the four runs, the lowest consumption of spirit being that of the De Dion car. Briefly reviewing the competing vehicles, it may be mentioned that the De Dion was a 8-h.p. single-cylinder coupe, suitable for doctors' use. The Gillet Forest Company ran a 12-h.p. six-seated omnibus and an 8-h.p. delivery van. A new vehicle was to be seen in the Aries. This follows the now generally adopted lines, being fitted with a 10-h.p. two-cylinder Aster motor and bevel gear transmission. The fifth vehicle—the Collin—was, as mentioned last week, somewhat of a novelty, being an avant-train or motor fore-carriage adapted to take the place of the front wheels of an ordinary cab. The accompanying illustration shows the arrangement with the bonnet removed. It consists of a frame mounted through springs on the two front wheels, which are pivoted in the usual way for steering purposes. The motive power is supplied by a 8-h.p. De Dion engine, which transmits its power through a clutch to a gear box giving three speeds and reverse on one lever. From the countershaft the power is conveyed to the front axle through chain gearing. The main body of the cab is connected to the motor-carriage by eight bolts, so that it can be readily detached when necessary. Its behaviour in the trials marks it as being the most successful avant-train so far introduced. In the delivery vehicle competition only two De Dion cars started on the first day—a delivery van to carry 15 cwt. and a lorry intended for loads up to 3 tons. On the second day a large De Dietrich motor omnibus was permitted to start. As indicated above, little or no interest was taken in the trials, while their value was further diminished by reducing the number of daily runs from six to four, owing to the Dourdan speed trials intervening.

SOME USEFUL NOTES.

It is advisable to always keep a narrow strip of rag wrapped round the vent-holes of an accumulator. This absorbs any acid which may splash out on the road.

WHEN all the essential wearing parts of a car are enclosed in dust-proof cases it would seem to matter little how the dust and mud adhere to the outside of the cases. Yet there are a number of reasons why even the outside of the cases should be protected against dust and splashing mud, and several cars are now made with a special sheet metal protector below the engine and change-speed gear box extending from side to side of the frame. There are always some shafts projecting from bearings in the casings, and precautions to avoid dust working into these bearings cannot be too strongly urged. Besides, remarks an American contemporary, there are the connections for controlling the engine, change-speed gear and brakes, which are not enclosed, and the joints of these can only be properly lubricated and protected against excessive wear if kept free from dust. Finally, any work that is necessary to be done in connection with the engine and gear is much less onerous if these parts are kept clean.

WITH motors of two or four cylinders, one or more of which may be firing badly or not at all, it is not always possible to

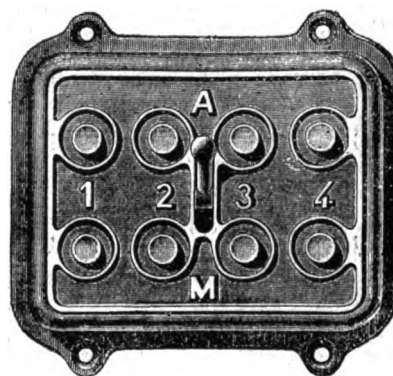


Fig. 1.

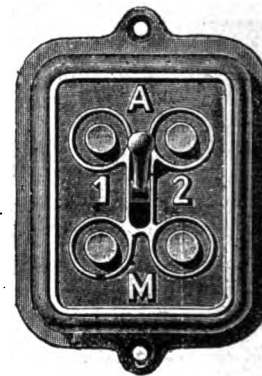


Fig. 2.

discover the cylinder which is giving trouble without some difficulty. The method is to open the coil box and hold down the tremblers, so that only one cylinder is left in at a time, but in doing this the adjustment of these delicate parts is frequently deranged. In order to avoid this, Messrs. J. Lacoste and Company have produced a small device, arranged to be attached to the dashboard, furnished with push buttons, numbered in consonance with the cylinders. By pressing in any of the upper row of buttons the cylinders in relation can be cut out, and the firing of each verified singly without interfering with the tremblers on the coil. Furthermore to test the spark at the plugs, it is only necessary to push in the lower buttons one by one. The device is, as will be seen, combined with the switch, so the ignition circuit of all the cylinders can be broken at one operation,

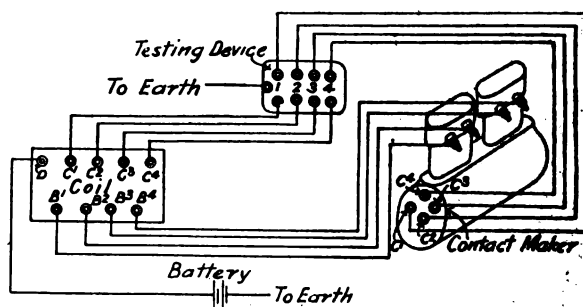


Fig. 3.—Diagram of Connections.

as usual, when the car is not in use. The device, as will be seen from Figs. 1 and 2, is made to suit both two and four cylinder engines, the method of arranging it in the circuit being shown diagrammatically in Fig. 3.

MOTOR-CYCLING NEWS.

WHILE much improvement has taken place during the past twelve months in the efficiency of belt-driven motor-bicycles, there is a growing feeling that something more positive is necessary, and judging from present indications new chain-driven machines will shortly make their appearance in increasing numbers. This week we are able to publish an illustration of the



The "Wirral" Motor Bicycle.

"Wirral" chain-driven motor-bicycle, which has lately been put on the market by Messrs. Kelly, Bounphrey and Company, of Birkenhead. As will be seen, the engine is located vertically in a specially designed frame, the latter having a double set of back stays and two top tubes, which gives the rear part of the machine greater strength than is usually provided. The air-cooled engine is of $2\frac{3}{4}$ -h.p., the cylinder being 2 5-16 in. bore by 3 1-8 in. stroke. The inlet and exhaust valves are placed on opposite sides, both being mechanically operated. A spray-type carburettor with float feed and adjustable air-inlet and throttle is employed to furnish the mixture. The usual system of high-tension ignition is adopted, and an exhaust-valve lifter is provided. In place of a belt the power is transmitted by a Renold five-eighth pitch roller chain direct from the engine to the back hub, into which a Bowden friction clutch, already described in the *Journal*, is fitted, this taking up any "snatch" the drive may give and also allowing a free engine when desired. Lubrication is on the splash system, an oil pump being fitted to the side of the tank. These Wirral machines are claimed to be excellent hill climbers and capable of taking fore-carriage, side-car, or trailer with ease.

ON the 1st prox. the Auto-Cycle Club will hold its first annual dinner at the Automobile Club, 119, Piccadilly, W. Mr. M. O'Gorman and Mr. J. Van Hooydonk will provide the solid fare that will follow the dinner.

MR. STAPLEE FIRTH is of opinion that a side carriage fixed to a motor-cycle is not liable to the licence fee that the Inland Revenue authorities in some places are requiring.

FRANK MYCROFT, of Ilkeston, has been summoned for keeping and using a motor-cycle, on August 23rd, without having a licence for the vehicle. Supervisor Goodhind said he would not press for a penalty. The only motive was to notify the public that they must not use motor-cycles without a licence. The chairman said that as it was the first case at Ilkeston, there would be no conviction, but the defendant would be ordered to pay the costs.

OWING to the postponement of the Dourdan race meeting, and to the forthcoming Gaillon hill-climb, the Moto-cycle Club

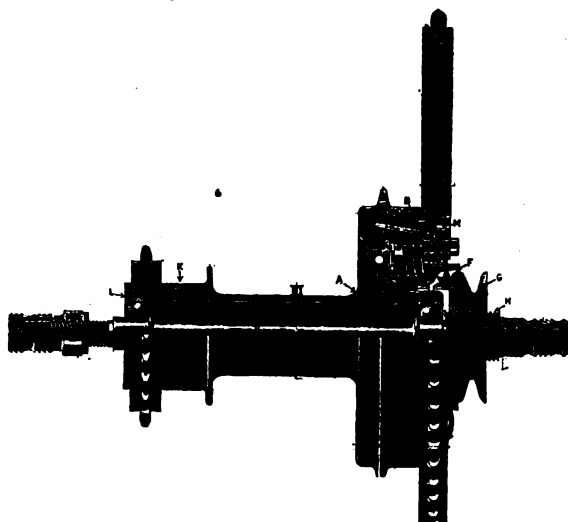
de France has decided to delay the starting of its 1,000 kilometre motor-cycle reliability trial until next month. The competition will now start on Tuesday, November 10th, and finish on the following Sunday. Entries will be received up to November 5th by M. Berjonpeau, 4, Rue St. Ferdinand, Paris.

TO-DAY (Saturday) the final test for the Edge trophy will take place over the usual 200 miles course in the neighbourhood of Hatfield, under the auspices of the Motor Cycling Club. There are only three competitors left in the contest.

CONSTABLE RYAN summoned Geo. Shackleton, Lucan, at the Naas Petty Sessions, for riding a motor-bicycle on the footpath at Maudlins. The defendant was ordered to pay a fine of £1.

THE Sheffield and District Automobile Club will hold a 40-miles non-stop motor-cycle run to-day (Saturday). The start will be made from the Plumper's Inn, at Tinsley, at 1.30 p.m., and the course will be *via* Maltby, Blythe, Barnby, Bawtry, Tickhill and Worksop. The Lion Hotel will be the club head-quarters at Worksop. If the weather is unsatisfactory the run will be postponed till the following Saturday. The event is purely a non-stop trial, in which pace will not count, and to qualify the rider must go right through without a single stoppage, except where the marshal may certify that the rider is stopped purely for traffic purposes. The pace must be kept at the average of twelve miles per hour, and any competitor exceeding fifteen miles per hour, at any time, will be liable to disqualification.

THE number of medical men using motor-cycles is steadily increasing. One who rides a Phoenix machine says he has covered 5,228 miles on it and has completely abandoned the use of horses in his practice. He attributes his success in a great measure to the methodical way in which he has always put lubricating oil into the engine, he putting one pumpful, *i.e.*, about two ounces, every ten miles. He has never had any ill effects from motoring, and as far as he can judge there is no



Part Sectional View of Bowden Clutch.

particle of evidence that it makes one's hand shake or gives rise to the many small neuroses it is supposed to do. The vibration and jolting is reduced to a minimum by the spring seat-pillar fitted to the machines.

THREE sizes of the Kerry motor-cycle engine will be made for the 1904 season, $2\frac{1}{4}$ -h.p., $2\frac{3}{4}$ -h.p., $3\frac{1}{2}$ -h.p.

THE PRIMAT ALTERNO-ROTATIVE PETROL MOTOR.

ONE of the most interesting exhibits at the Motor-Car Show at the Agricultural Hall in April last was the Primat alerno-rotative motor displayed by Madame Lockert. It is an engine which to all outward appearance is a

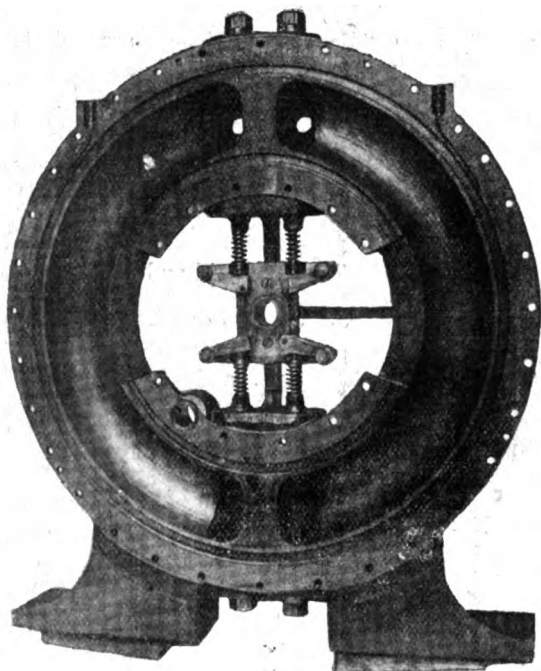


Fig. 1.—Right Half of Primat Motor.

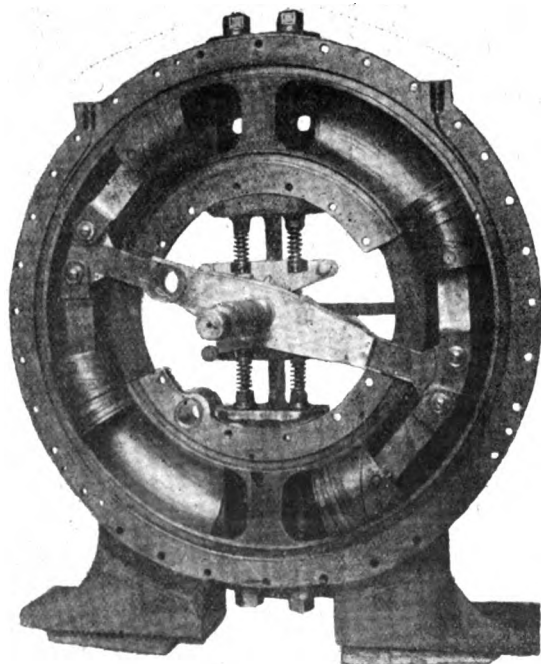


Fig. 2.—Left hand Half of Primat Motor.

rotary one, but in which nothing rotates save the connected engine shaft. It consists of two cylinders cast in a ring casting, and having the connecting rods of four pistons attached in pairs to each end of a double rocking lever, from one arm of which depends a short connecting rod rotating the engine shaft proper, which is therefore out of centre with what, for lack of a better term, may be called the engine ring in which the four pistons reciprocate. The engine or cylinder ring is cast in two halves

vertically, and bolted together, an ingeniously cast groove and lip forming a gas-tight joint. The pistons are segmental trunks, and the piston rings have their sides formed on the radial lines of the engine ring.

Referring to the illustrations, Figs. 1 and 2, these show respectively the two halves of the casing detached. The two semicircular cylinders, behind which is provided a water jacket, are seen in Fig. 1, while from Fig. 2 the arrangement of the four pistons can be observed. To facilitate the description, lettered diagrammatic views (Figs. 3 and 4) are added. The connecting rods of each pair of pistons are connected to the ends of a double rocking lever *w*, mounted loosely on the shaft *g*. Pivoted to this lever is a short lever *h*, by means of which the to and fro motion of the rocking arm is converted into a rotary movement, the pinion *i*, to which the lever *h* is connected, transmitting the power to the spur wheel *j* on the central shaft *g*. The arrangement of the valve gear is shown in Fig. 4, two inlet-valves being located at the top at *l*, and two at the bottom; the exhaust valves at *m* and *m'*, and the four sparking plugs at *l'*. The central shaft *g*, on the outer end of which is the fly-wheel, runs at half the true engine speed, owing to the reducing gear wheels *i* *j*, and is therefore additionally employed to actuate the single cam by which all the four exhaust valves are opened at the requisite moment, and the sparking mechanism. The engine works on the usual four-cycle, the sequence being regular—that is to say, as No. 1 piston is on the suction stroke, No. 2 is compressing, No. 3 firing, and No. 4 exhausting.

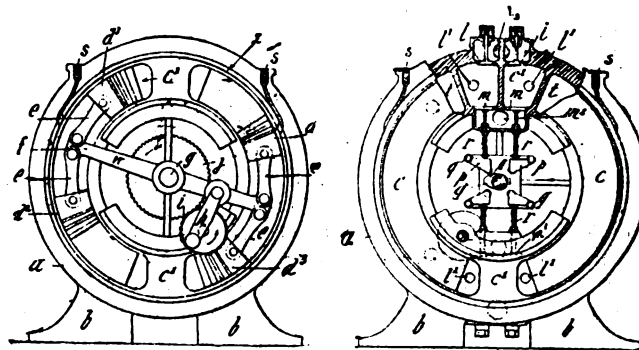


Fig. 3.—Sectional Views of Primat Motor.

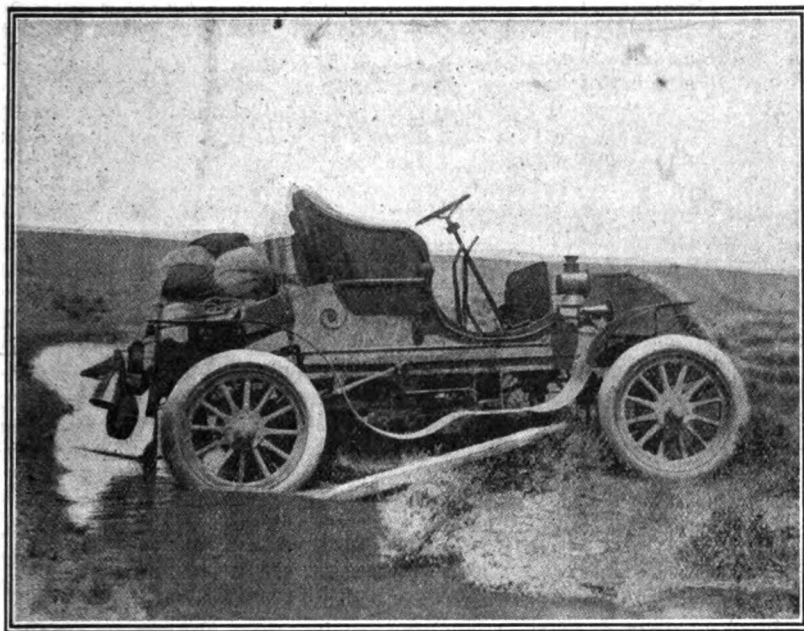
The experimental engine has cylinders 70 mm. by 140 mm. stroke, the true engine shaft on which the pinion *i* is mounted making 900 revolutions per min., the central shaft *g*, which carries the flywheel, and from which the power is taken, running at half this speed. Among the many claims made for the new engine one of the most important is the light weight and the small amount of space occupied, the experimental motor, which develops 12 h.p., weighing only 220 lbs. and measuring but 28 in. in height by 8 in. in width. It is well balanced, while the absence of the costly crankshaft required in the ordinary form of four-cylinder engine is not the least of its striking features, and permits of a little extra outlay on the production of the semi-circular cylinders and the segmental pistons, the manufacture of which is, however, stated not to be such a difficult matter as many engineers consider. In the trial engine no trouble is said to have been experienced on the score of lubrication, while the Longuemare carburettor with two-way outlet furnished mixture for both upper and lower inlet valves without any irregularity.

As will be seen, the Primat motor is a radical and novel departure, and we are looking forward to its practical trial on a motor-car with considerable interest.

HERR PORSCHE arrived in Paris a few days ago with a 15-h.p. Lohner-Porsche combination petrol-electric car, having made the journey from Vienna by road. He followed the course of the Paris-Vienna race, and when he crossed the Arlberg it was covered in deep snow. His net running time for the 1,300 kilometres which separate the two cities was 45 hours.

HERE AND THERE.

THREE motor-cars, a Winton, a Packard and an Oldsmobile, and a motor-bicycle have this year been successfully driven from San Francisco to New York. In a recent issue we gave two pictures illustrating some of the difficulties encountered



The Trans-Continental Run of a Winton Car.—In a "buffalo wallow."

by the Packard, and this week we are able to give a couple of illustrations which indicate the adverse road conditions met with by the Winton on its long journey. The first picture shows the car just being forced from what in the western country is called a "buffalo wallow"—soft, marshy places where a machine will sink in over the wheels. The tourists found it necessary to build a foundation of stone in the bottom of this wallow for a lifting jack, by which the car was gradually forced up. When raised as far as the jack would carry it the wheels were blocked up with planks, stones, or anything else available, and the jack platform, or foundation, built up again to give another hoist, until the car was got out of the wallow. The second illustration shows the car in even a worse wallow than the first one. The photograph from which the picture was reproduced was taken just as the machine was being hauled up by the aid of block-and-tackle and a team of mules. When the mules were brought into use the vehicle was in the middle of a big swamp and buried clear over the wheels and high on the body. Touring under such conditions can hardly be considered a pleasure.

At their garage in Moria Street, Liverpool, on Wednesday next, Messrs. Stanbury and Co. will hold an auction sale of motor-cars, motor-cycles, etc.

JUDGE EMDEN, who, as recorded in our columns last week, finds his experience as a cyclist and motorist useful in deciding questions concerning road accidents, is the owner of an 8-h.p. M.M.C. car.

THE motor-boat movement is making such rapid headway in France that the A.C.F. has decided to appoint a Commission de Yachting Automobile to deal with all matters relating to the new sport.

WILLIAM FRASER, the driver of a motor-car, who was charged at a London police-court with causing bodily harm to a pedestrian by the reckless driving of an automobile, has been discharged. The same result has taken place in the similar charge against J. H. Novis at the Lambeth Court.

MESSRS. JOSEPH LUCAS, LIMITED, have just opened a new London office and showroom at 224, Shaftesbury Avenue, W.C., for the sale of their lamps and motor accessories.

A COMPETITION of carburettors designed to work with ordinary petrolum is to be held in connection with the forthcoming *Salon* in Paris.

BISHOP LENIHAN, one of the leading ecclesiastics in the colony, had his first motor-car trip on the occasion of the recent run of the Auckland (New Zealand) Automobile Association to St. Heliers Bay.

IN response to the demand for a water-cooled Lanchester, the Lanchester Engine Co., Ltd., will put on the market a 12-h.p. water-cooled car for the 1904 season. The air-cooled cars will still be supplied.

A CONFERENCE between representatives of all the automobile clubs in Belgium is to be held on the 19th November, to consider the proposals which should be made to communal authorities regarding the speed of motor-cars, etc.

ALTHOUGH the Duryea cars are built in America, it is well known that for the past twelve months they have been finished in England. This has entailed considerable work being done in Coventry, and the increase of the business has of late been so rapid that with a view to the requirements of next season and the probability of still more of the work being done on this side, the Duryea Company have just acquired over three acres of freehold ground adjoining the canal in Widdrington Road, Coventry, and have commenced the erection of extensive workshops thereupon. The first of these is now rapidly approaching completion, and the company hope to enter into occupation in a few weeks' time.

THE firm of Harry Reynolds, Limited, has been registered with a capital of £5,000 for the purpose of taking over and carrying on the business of motor manufacturers, agents, etc., now carried on by Mr. Harry Reynolds, at Crampton Quay, Dublin.



An Incident of the Trip.

THE Begbie Manufacturing Company, Limited, of Willesden, are removing their business to more central premises, and their address is now 407, Oxford Street, London, W. The Begbie Company have taken up the agency in London for the Coventry Motor Fittings Company's automatic pressure feed lubricators.

A NEW anti-skidding and puncture preventing device for the rear wheels of motor-cars is being put on the English market by Messrs. H. M. Hobson, Limited. It is of Belgian origin, and is known as the "Perfecta." It consists of a band of specially-treated chrome leather, the tread of which is fitted with a large number of leather washers held in place by steel rivets (Fig. 1). It is placed



FIG. 1.

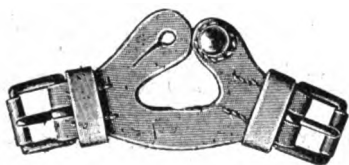


FIG. 2.

round the outer cover, and by means of the tabs, and by special buckles shown in Fig. 2, attached to the spokes. The band is light, and as the leather does not stretch, it is claimed that its use does not affect the resiliency of the tyre, while the dangers of skidding and puncturing are said to be entirely overcome.

THE members of the Automobile Club of St. Louis, U.S.A., are forming an association to be known as the Automobile Club of St. Louis Legal Defence Association. The purpose of the association will be to adjust claims and defend suits against its members on account of alleged damages caused by them to persons or property in the use of their motor-cars.

PROFESSOR H. S. HELESHAW, of Liverpool University College, has been appointed, through the Colonial Office, to organise technical education in the Transvaal and Orange River Colony. The Professor has been granted leave of absence by the University Council until next September, and, we learned some time ago, will take a motor-car with him to facilitate his progress through the new colonies.

THE Speedwell Motor and Engineering Company, Limited, have now got over one of the new 24-28-h.p. Bollee cars. In general arrangement it closely follows the Mercedes, but naturally there are a good many variations in detail. The engine has four cylinders, 105 mm. dia. by 130 mm. stroke, fitted with both battery and magneto ignition. The carburettor is a special one, of which no details have as yet been made public. A combined honeycomb radiator and water tank, fan-cooled, is used, the circulation being maintained by a slow-running pump. Special features are found in the clutch and in the method of suspending the motor, both this and the gear-box having three-point suspension. The great feature of the car is the flexibility of the motor and the extreme quietness when running; in fact, it is extremely difficult to imagine that an engine is in operation underneath the bonnet.

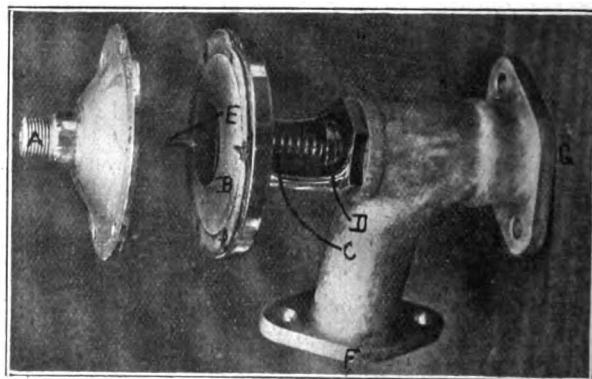
AUTOMOBILES are now admitted free of duty into the port of Lima (Peru).

It has been decided at Washington, U.S.A., that the military motor-cars used in that district, as well as their drivers, must conform to the local regulations with regard to numbering and licences.

MOTOR wagons have now displaced the horse-drawn vehicles which for years have been used to convey luggage to and from the trains in the Pennsylvania Railway station and the ferryboats at Jersey City, U.S.A. The automobiles carry three times the amount of luggage carried on the old trucks.

MESSRS. DE DION BOUTON, LTD., inform us that for the 1904 season they will have four different types of cars, viz., 6-h.p., 8-h.p., 10-h.p. and 12-h.p. The 6-h.p. vehicle will have two forward speeds and reverse, exactly the same as the present model, and will be fitted with 28 in. by 3½ in. tyres and a two or three seated carriage body. The 8-h.p. car is a new model with three forward speeds and reverse, and larger and somewhat heavier than the present 8-h.p. model. The 10-h.p. car is another new model. It will be fitted with a two-cylinder motor. The gear will give three forward speeds and reverse, while interior expanding drum brakes will be provided. The 12-h.p. car was introduced late this season and has proved so satisfactory that no alteration will be made for 1904. It is a larger and somewhat heavier car than the 10-h.p. and is fitted with 32 in. by 3½ in. heavy tyres. In addition to the standard chassis suitable for tonneau and similar carriage bodies, the 8, 10, and 12-h.p. vehicles can also be supplied with longer frames, on which double phaeton, brougham, victoria, and such bodies can be built permitting entrance from the pavement direct to the back seats from either side.

ONE of the special features of the new Napier 18-h.p. car is the novel method of automatically regulating the proportions of petrol vapour and air in the carburettor. It is now very well understood that when a motor is running slowly it requires a larger quantity of petrol relatively to the amount of air admitted to the carburettor than when it is running fast. In other words, the faster the pace the more air is required, and *vice versa*. All users of modern motor-cars also know that the velocity with which the water circulates through the radiators and pipes varies in accordance with the speed of the engine; the faster the engine works the faster the circulation of the water and consequently the greater is the pressure which it



The Napier Hydraulic Air Regulator with Cap Removed to show Diaphragm.

- | | |
|---------------------------------------|--|
| A Water Inlet from circulating pipes. | D Adjusting collar to regulate tension on spring |
| B Diaphragm. | E Spindle of valve. |
| C Spring closing air valve. | F Hot air inlet. |
| | G Hot air outlet to carburettor. |

exerts upon the water gauge. This circumstance has been taken advantage of in arranging the new regulator. The carburettor of ordinary construction is furnished with an adjustable air inlet, and this adjustment is varied according to the amount of pressure exerted by the water upon a diaphragm working in a short cylinder which opens or closes the air inlet orifice in instantaneous accord with the speed with which the water is circulating. Thus the quality of the mixture is constantly kept to the best degree of explosiveness, the result being an exceedingly flexible and silent-running engine.

POWER DISTRIBUTION IN PETROL MOTORS.

It is sometimes a little difficult to realise, without the aid of diagrams, the actions which are taking place simultaneously in the several cylinders of a petrol engine of multicylinder construction, but by the aid of simple diagrammatic illustrations the various actions are presented to the eye most cogently and in such a manner as to assist in the solution of many engine problems which may arise. For instance, the state of things in the double-cylinder four-cycle engine of the twin type, as shown in Fig. 1, in which shaded areas above the diagram repre-

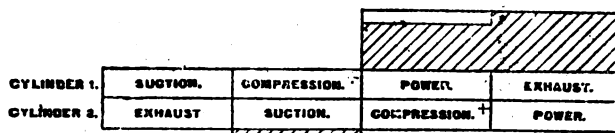


Fig. 1.

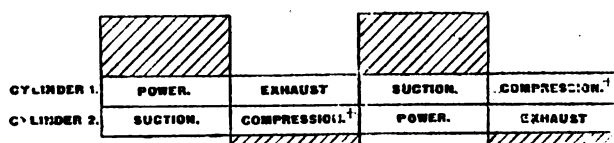


Fig. 2.

sent net power developed and shaded areas below represent negative work. In the first stroke of the cycle there is practically no power produced or consumed; in the second stroke the work is negative, the energy being taken from the fly wheel and stored in the compression of the first cylinder's charge. The third stroke of the cycle represents net power developed, but is the difference between the energy produced by the power stroke in the first cylinder and the negative work of compression absorbed by the gas which is being compressed in the second cylinder. The last stroke of the cycle is a power stroke solely, and is represented by the explosion in the first cylinder. It is the most important stroke of the cycle.

Since in a four cycle engine forward strokes are either suction or power strokes and backward strokes are either compression or exhaust strokes, and since (in order to balance moving parts) a forward stroke in one cylinder always corresponds with a backward stroke in the other, the only possible combinations between twin cylinders are suction compression, suction exhaust, power compression, and power exhaust.

In an opposed double-cylinder motor, in order to balance reciprocating parts, both cylinders must make their forward strokes together and their backward strokes together. The suction strokes in one cylinder will, therefore, be simultaneous with the power stroke of the other, and the exhaust stroke of one will correspond with the compression stroke of the other. Representing this condition diagrammatically as in Fig. 2 we have: The first stroke of the cycle is the power stroke of the first cylinder, the second the compression stroke of cylinder No. 2, in which energy is abstracted from the flywheel and added to the charge; that is, the work during the stroke is negative. The third stroke is the power stroke of the second cylinder and the fourth is of negative value, being the compression stroke of the first cylinder. The power distribution in the cycle of an engine of this type is perfectly symmetrical, and, although strokes of positive and negative power value alternate, the result is a very satisfactory torque, demanding less fly wheel capacity than is called for in a motor of the twin type.

In the case of the three cylinder engine with cranks set 120 degrees apart and power impulses 240 degrees apart, the power distribution in the cycle is perfectly symmetrical, but is still somewhat intermittent, although much less so than in the case of the two-cylinder engine. Fig. 3 gives a diagrammatic representation of the action of an engine of this type, and it will be noted that three times in each cycle there is a period of about 60 degrees

duration in which there is no positive power being developed. These three periods are found at the close of a power stroke and while the next cylinder in rotation is finishing the compression of its charge preparatory to firing. In the first 60 degrees of each power area the power is all positive, but in the last 120 degrees the negative work of the next cylinder in rotation has to be subtracted.

Fig. 4 represents the power distribution in a four-cylinder engine, and it is at once seen that there is a continuous production of energy throughout the whole cycle, as the power stroke of a certain cylinder is not completed before the power stroke of the following cylinder begins. At the same time that a certain cylinder is passing through its power stroke its following cylinder is passing through its compression stroke, so that the net work in each stroke of the four is the total power of one cylinder minus the compression work of the next.

The two-cylinder twin engine is not so very much preferable to the single cylinder type as far as regularity of power distribution in its cycle is concerned, and it calls for a very large fly wheel. The two-cylinder opposed engine, while possessed of a symmetrical action, is strongly impulsive in its working. The three-cylinder engine is a decided improvement over the double opposed type in point of uniformity of torque, but it is still manifestly impulsive, as the torque changes from positive to negative three times a revolution, although this is not serious in practice. It is easy to see why the four-cylinder type is so much sought after, as its power production never changes its sign and merely undulates in value four times each cycle. The fly wheel which it requires is exceedingly small, and as there is always a compressed charge in one of the four cylinders its starting is so easy as to give it great popularity.

It is believed, remarks Mr. A. L. Clough, in the "Horseless Age," that these four diagrams constitute rather an interesting study of power production in petrol motors, as they form a regular series, beginning with a very irregular form of power distribution and ending with one which is almost ideal. It should be stated that the forms of the shaded areas representing power are not intended to give any definite quantitative idea of the power produced at every instant, but merely to denote whether the power is positive or negative, and some general idea of its value. Of course, the actual power distribution can be represented only by curves of some complexity. For instance, in a four-cylinder engine in which the power developed would be large toward the beginning of each stroke, especially if early ignition were em-

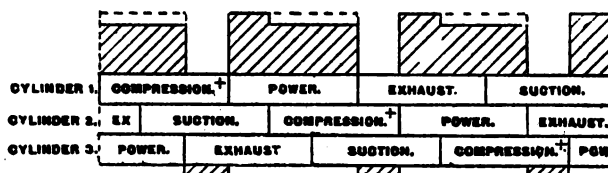
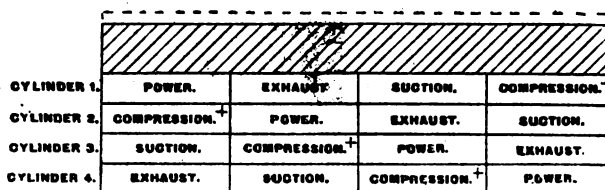


Fig. 4.



ployed, and would taper off very rapidly towards the end of a stroke as the pressure of the expanding gases under compression increased simultaneously. It is perfectly possible, however, to combine the indicator diagrams of the separate cylinders of a multiple engine in such a way as to get the net power actually being given out. The figures given are purely diagrammatic, and nothing more is claimed for them.

STEAM-ROLLING IRISH ROADS.

ONE of the results of the Gordon Bennett race that are likely to prove of permanent utility to Ireland is the attention that has been drawn to the necessity for the effective rolling of Irish roads. At a recent meeting of the Tipperary Rural Council, the County Surveyor, Mr. E. A. Hackett, estimates that in that district alone no less than £300 has been saved by the use of the steam-roller. So convinced were the councillors as to the value of the work done, that they readily assented to a further expense of over £2,000 on account of steam-rolling the roads.

This will be good news to local motorists as well as to the greater number who make use of the roads. At present not more than a dozen cars are owned in the county, but scores travel through the district owing to its central position between Dublin and the south-west touring districts. A further attraction is the beautiful scenery all along the valley of the Suir.

Some particulars as to the economy effected by steam-rolling will be useful as giving actual experience in the matter and thus inciting other authorities to be equally alert to their own interests. Twelve miles of road in the Clonmel rural district were wont to cost from 4s. to 5s. a perch per annum, or from £64 to £80 per mile for maintenance. The District Council then decided to spend a sum equal to from three to four years' maintenance in steam rolling, paying for the work out of the current year's rates. The result is that the annual maintenance has been reduced to 9d. per perch for the repairs and cleaning necessary. The first of the roads done in Clonmel Rural District has now lasted three years, still holds a perfectly true surface, will last two years more as a minimum estimate, and be a better road at the end than before rolling. The entire cost of steam rolling was 12s. 3d. per perch. At the end of the five years a total sum of 15s. 3d. per perch will have been spent on it, as against 20s. under the former system.

As roads descend in the scale of prices for maintenance from, say, 5s. 6d. per perch to 6d. per perch, the important point arises—viz., at what price will the saving disappear? The cheaper roads, will, of course, last longer, and one formerly in charge of Mr. Hackett, the price of which was 2s. per perch, is now, after being five years rolled, showing little or no signs of deterioration, and will last for another five years. The initial cost of rolling such a road is so great compared with its annual maintenance under the old system that unless the money can be borrowed for a longer term than five years there will of necessity be a loss for several years. With present experience it appears it would scarcely pay to steam-roll any road where the cost of maintenance was less than 2s. per perch, but further experience will probably modify that forecast and enable even cheaper roads to be rolled with economy.

In view of the growing number of automobiles in use in Ireland the subject is worthy the attention of all the leading public men. It is only within the last few years that the importance of the matter has been recognised; the automobile tour in July last brought it further into public prominence, and we shall be glad to know that other counties besides Tipperary are adopting the steam roller not only as a means of economy, but as a friend of the motorist touring in Ireland.

AN interesting race meeting was held on the Bovolento-Padua road, near Padua, Italy, on Sunday last, when the Italian flying kilometre record was broken. The ten-kilometre race on a straight road was won by Florio on a 70-h.p. Panhard in 5 min. 12 sec.; Baron de Caters on a 90-h.p. Mors being second in 5 min. 28 sec. The light car class was won by Borsotti on a Fiat in 8 min. 12 sec. In an attempt on the kilometre record, with flying start, Florio set up new times for Italy, doing the distance in 28 secs.

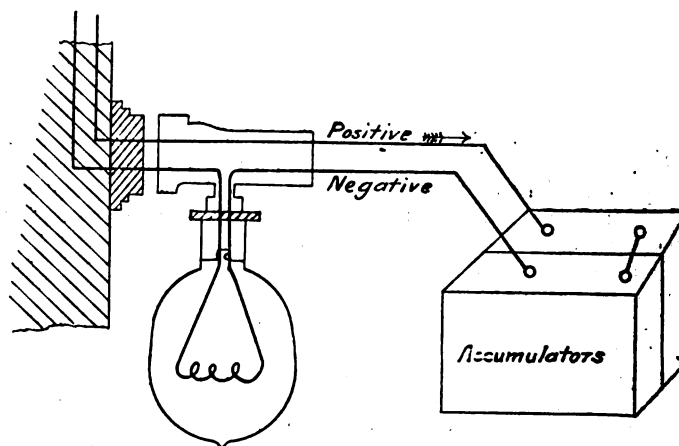
CORRESPONDENCE.

ACCUMULATOR QUERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The recent letters on the above subject prove, without doubt, the necessity of more information regarding the construction and maintenance of accumulators. Your correspondent Thos. Halliwell in part hints at the right solution of the problem when he states that sulphating is due to raising the specific gravity through the addition of acid solution when water only is required. The proper specific gravity is usually found printed on a label attached to the cells, and varies according to the construction of the plates.

Some makers specify for the gravity to be as high as 1.230 in a cell fully charged, but it may be taken as a general rule for the gravity to be 1.175 in a discharged cell, rising to 1.215 when fully charged. If the gravity is taken every time the cell is charged, or say every week, and recorded, comparisons can then be made, and this is the best means of ascertaining the amount of charge the cell contains; for, if before sending to be charged the gravity was 1.180 and on its return only 1.190, you would then know that either the cell was not fully charged or else a fault had developed. To keep cells in good condition they should be kept fully charged. Nothing tends more to destroy the plates than partly charging and then discharging them to exhaustion; hence the necessity for the motorist to check the gravity each time the cell is charged. The chief causes of failure are, buckling of the plates and bad



sulphating. Buckling may be caused by too high a charging or discharging rate, also from short circuiting, caused by the active material becoming loose and sticking between the plates, forming a path for the current of lower resistance than passing through the electrolyte. This must be removed immediately it occurs, or the battery will be ruined. Bad sulphating can easily be detected in cells having a transparent case, greyish white patches appearing on the positive (i.e., chocolate coloured plate). This requires careful treatment and is best removed by a long slow charge at about half the usual charging rate. This has the effect of reducing (slowly) the sulphate to a fine powder. Should the charging current be high, this will fall off in scales and bring with it much of the active material, thereby reducing the capacity of the battery.

Referring to H. J. B.'s letter in your issue of the 17th inst., as he sent his accumulators to the makers, and they stated bad treatment, it would be interesting to know the cause. Have these cells always received care in charging? Has the gravity of electrolyte been correct? Is the insulation resistance between wire and motor perfect? Is the secondary (fine wire) winding on coil perfect, both in insulation and continuity? This often breaks down through the points of sparking plug falling across each other, and closing the secondary circuit. The current will then break through the weakest point of insulation in coil and same will quickly burn away.

It is impossible to specify every disease that the ignition accumulator is heir to, in the limited space of this letter, but the importance of understanding a little about maintenance and care of accumulators cannot be over estimated by automobilists. I fear the latter are much at the mercy of those responsible for charging their cells, and I strongly recommend owners who use electric light to do their own charging, being careful first to ascertain that the electric supply is by direct (not alternating) current. I enclose a sketch of a simple means of charging with a table of c.p. of lamps, and the current (approx.) flowing when connected in series with a two-cell battery on a circuit of 100 volts. The voltage required to charge each cell is 2.5 volts, so that with two in series a pressure of 5 volts is required.

Table of current flowing when using a single incandescent lamp as a resistance for recharging cells on a 100 volt circuit:—

Cells.	Candle Power of Lamp.	Approx. Current.
2	8-c.p. lamp	.3 Amp.
2	16-c.p. "	.6 "
2	25-c.p. "	.8 "
2	32-c.p. "	1 "
2	50-c.p. "	1.6 "
2	100-c.p. "	3.2 "

Any number of cells may be charged in series; this will have the effect of reducing the current, when a glow lamp is used as a resistance. Thus if on a 100-volt circuit with a 32-c.p. lamp, six cells are joined in series, the current flowing will be reduced in the ratio of 100, to 100—(6×25) or 100 to 85, therefore if a 32-c.p. lamp takes 1.12 amp. with no battery in circuit, the amount when six cells are coupled in series with it will be .95 amps.

A slight error appears in your "Useful Notes" in your issue of the 24th inst. You state, as regards the condition of the plates, these should be of a deep slate or chocolate colour, according as they are positive or negative. This should read, according as they are negative or positive.—Yours truly,

B. TREVETT.

THE 16-FOOT HIGHWAY CLAUSE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice you ask motorists to be thankful for small mercies, and point to the decision of the Local Government Board to measure the 16 ft. road as from hedge to hedge as a little concession. I do not quite see this. Surely the road surface should be regarded as the limit to be measured, otherwise some strange conflicts may arise.—Yours truly,

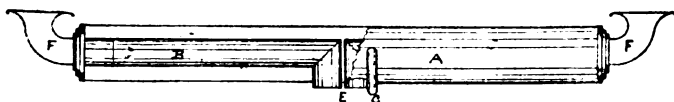
A MOTORING M.P.

[The doubt raised by our correspondent can be dispelled on reflection. There are many roads on which the space for traffic is less than 16ft. wide which will remain open now that it has been agreed to measure from the two limits of the highway, but which might have been in the closed category had the authorities restricted the measuring line to the actual surface open to traffic. Those who are familiar with the road leading from Guildford to Winchester will appreciate this point, which is further emphasized in Devonshire and other counties.]

RADIATOR QUERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to my letter published in the last issue of the *Journal* relating to the little alteration I made in the condenser of my Benz car at the back of the front seat, I now send a sketch of the arrange-



ment. A is the condensing tube that may always be seen behind the front seat of a Benz car. B is the inner tube (air tube) that runs through A. This inner tube—for the purpose of this improvement—is cut in the middle, each piece having a return end attached to it as shown at E. At each outer end of B a bell-mouth bend is fixed as shown at F. The bell-mouths, 5 in. diam., should face the way the car travels. C is the steam escape pipe, but this is of no service now as no steam is ever seen, it is all condensed. The faster the car goes, the more effectual the cooling.—Yours truly,

J. HOPE.

THE USE OF THE ACCELERATOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you be good enough to give me a few hints on the use of the accelerator when climbing hills and also when going down hill?—Yours truly,

A NOVICE.

[The accelerator properly so called is simply a device by which the governor is thrown out or retarded in its action, so that the engine is allowed, if it can, to exceed its normal speed. In hill-climbing, it can be used to increase the speed when the engine runs easily on one speed, but fails to take the next higher, but in all cases, particularly when going on first speed, it should be used cautiously, i.e., the engine should not be allowed to race excessively. Going down hill and on the level it should only be used when running on top speed, when its use is simply governed by the pace desired. The only exception is when driving in traffic, when its slight use on lower speeds is sometimes convenient for passing a vehicle without getting on a higher speed. Needless to say it must always be taken off before clutching or applying brakes. Some cars have a miscalled accelerator pedal which is simply a throttle pedal, and must always be wholly or partially depressed when running.]

THE MOTOR CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have endeavoured to persuade the authorities to allow automobilists, by placing names on their cars, to be relieved from disfiguring them by numbers, the names to be registered opposite the register numbers, so as to give means of identification. I fear that my efforts have failed.

I now venture to propose that we should put names on our cars, and suggest that the use of a name along with the number will make the latter less offensive. It is quite common to have sporting names for "Mobiles" both on sea and land. A boat with such a name as "Rover" or "Bacchante" will be observed as regards its name, and any mere figures accompanying the name will not attract so much attention.

It is already common to use names. My own car and those of several of my friends are known by their names, and where an automobilist has more than one car, distinguishing names are almost a necessity. Thus one of my friends speaks of his cars as "Topsy" and "Mephisto," and such names as "Sea Gull" and "Antrona" are quite familiar, while every reader of motor-car literature knows what is being spoken about when he reads of "Sir Charles" and "Charles the Second."

One of my strong reasons for endeavouring to induce my fellow automobilists to join in putting names on our cars is that it will dissociate us from the ill-conditioned and selfish persons who do so much harm to the sport, for I feel sure that they will not supply more identification marks than the law compels them to do.

Now, the British subject is shy of taking individual initiative. My purpose, therefore, is to invite my motoring comrades to inform me whether they would be willing to join others in putting pet names on their cars. If I can obtain a goodly number I will publish the fact, and every motorist who agrees can then put a name on his car on 1st January without feeling that he will be singular in his action.

Please address postcard to 15, Abercromby Place, Edinburgh.—Yours truly,

J. H. A. MACDONALD.

THE PROPOSED FEDERATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The letter we recently addressed to the provincial automobile and motor-cycling clubs upon the subject of a proposed "Automobile Federation" seems to have raised, in some quarters, the idea that it is the amount of money demanded by the A.C.G.B.I. which is the greatest drawback to affiliation, and perhaps our letter was not phrased as aptly upon this point as it might have been. The financial question, *per se*, is not really one to be seriously considered, provided always that corresponding advantages be obtained for the sum demanded.

It has also been stated that, were the A.C.G.B.I. properly approached upon the matter, more advantageous terms might be obtained; but, as a matter of fact, each succeeding hon. sec. of ours has approached the parent club with this object in view, but without the desired result.

Again, it has been urged by some that the "Federation" could not be worked on a capitation fee smaller than that demanded by the A.C.G.B.I., but the actual amount of the fee would depend entirely upon the advantages desired. In this connection I may here touch upon the admission of a prominent member of the A.C.G.B.I., speaking upon the subject of affiliation:—

"It is hard, I admit, that practically no return whatever is given for this half-guinea."

Not only is this so, but also, by affiliation under existing conditions, the provincial clubs lose much of their independence, and have to submit in many matters to the dictation of the central and unsympathetic Club. In conclusion I may add that replies, favourable to our suggested scheme, continue to arrive, and these in numbers far in excess of our expectations.—Yours faithfully,

A. E. NEWTON

Hon. Sec., Reading A.C.

WATER HEATING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to H. P. A.'s query in last week's *Journal*, there can be no doubt that one of the pipes which lead from the engine to the cooler in the 8-h.p. Argyll has got stopped. The fact that one of these thermo-syphon coolers ran right through the Thousand Miles Trials without adding water, obviates any necessity for entering into technical explanation. The engine is either heated through too much petrol being used or one of the pipes being choked as suggested.—Yours truly,

B. J.

[Water-heating is very often an accompaniment of the state of things described in the first sentence of the reply, i.e. loss of power, namely leaky valves, valve seats or covers, or plugs. Sometimes a new engine boils badly till it has had a few hundred miles running, owing to imperfect finish of cylinder, probably, and then settles down all right. Another cause is sometimes that mixture cannot be made weak enough, and another air inlet, or a bigger one, will improve matters. It is assumed, of course, that the most obvious cause, namely stoppage in circulating system or deposit in cylinder jacket, is eliminated.]

TO THE EDITOR OF *The Motor-Car Journal*.

SIR.—Replying to H. P. A., *re* water heating, my car is a 8-h.p. Argyll, thermo-syphon system. I had similar trouble, but now I can run two hours and more and not use a quarter of a pint. The main point is to drive on smallest amount of weakest mixture possible. Make inlet valve so that when lever on steering column is pushed close to stud no vapour can be drawn into cylinder. By this means the smallest volume of vapour required can be found. On the flat, have advance spark full on, uphill, half on. Next, I always run with both doors of bonnet wide open, thus getting a secondary cooling effect on engine. These points have answered in my case, and now boiling water is an exceptional circumstance.—Yours truly,

G. E.

LOSS OF POWER IN MOTORS.—Replying to recent correspondence, there are many causes to which this may be due, but by far the most common is leakage in the neighbourhood of the valves. The first thing that usually occurs to the owner is to grind them in; but before this is decided on as necessary, the joints of inlet-valve seats and that of plug should be tested (a convenient method is with soapsuds) for gas-tightness. With mechanical valves it is, of course, the inspection covers that are most frequently the offenders, and more frequently than either, badly picked sparking plugs. Much power may be lost by this leakage before it amounts to a loss of compression perceptible at the starting handle. Leaky piston-rings, on the other hand, are evidenced by a loss of compression as soon almost as the loss of power is experienced; the cause is sometimes that they are stuck, when a teaspoonful or two of paraffin put in cylinder (when cold) and allowed to stand for some time will often clear them; sometimes that the slits in them have worked round in line, or that they have worn badly, for which the remedies are obvious. Other less frequent causes of loss of power that have come under our notice are: partially blocked petrol pipe (it is seldom that this fails to rapidly eventuate in total stoppage and consequent detection), accidental displacement in throttle-valve connections, so that the latter would not completely open, blocking of gauze covering air inlet to carburettor, and (though it is difficult to understand this failing to have been easily detected) brakes badly adjusted so as to be partially "on" when they were "off."

GOVERNING GAS AND PETROL ENGINES.*

BY DUGALD CLERK, M.I.C.E., F.C.S.

THE governing of a steam engine is a very simple matter compared to the governing of an internal combustion engine of any type. Steam engine governing is confined to two operations only—throttle or cut-off—and all the multitudinous gear which has been invented for controlling the various forms of steam engines differs only in mechanical detail and adaptation to mechanical conditions; but all conform to the two simple principles of throttle and variable cut-off. In explosion motors it was found that the attempt to govern by throttle of gas alone resulted in missed ignitions and the discharge of a large quantity of unburned combustible mixture from the engine. The Lenoir engine (1860) did not succeed on the market, and the first engine to make something of a success was the Otto and Langen, which appeared six years later. This was a very peculiar engine, in which a free piston was shot into the air, a vacuum was produced under the piston, and the atmospheric pressure forced the piston back and engaged a sort of free-wheel clutch arrangement on the fly-wheel shaft. This engine was governed by reducing the number of impulses in accordance with the work required. In time it gave place to the well-known compression engine operating on the Otto cycle, which was invented in 1876 by the late Dr. Otto, and introduced into this country late in 1877. This engine was also governed by missing impulses; that is, the governor operated to either admit the whole gas supply, giving a full explosion, or cut off the whole supply, giving no explosion. This method of governing has, up to now, been found to be the most economical for gas engines of moderate size, and it is the method which is most largely used in stationary gas engine construction. Most of the gas engines built in this country up to about 50-h.p. are governed in this way.

Although this hit-and-miss method of governing, as it has been called, is the best from the point of view of economy in gas consumption at light loads, yet it has been found to be mechanically inferior to other methods of governing when great steadiness of revolution is required. In using gas engines for electric light, for example, it was soon found that governing by this hit-and-miss method required fly-wheels of enormous dimensions to give any steadiness at all at, say, half-load. About 1894 Messrs. Fielding and Platt, of Gloucester, introduced into their electric lighting "Otto" cycle gas engines a method of governing which consisted in throttling both the air and gas supply in such a manner as to admit a gaseous mixture of uniform composition at all loads, so far as the proportion of gas to air is concerned, but allowing the engine to get a smaller and smaller volume of gaseous mixture as the load diminished. By this arrangement the compression in the engine cylinder was reduced as the load became lighter, and the number of impulses were kept up without interruption, and greater steadiness thus resulted. Messrs. Priestman, of Hull, also introduced this method of governing to control their heavy oil engines; and very many of the engines built by them govern in this way.

* Extract from a paper read at the A.C.G.B.I. on October 22nd, 1903.

When Daimler first produced his small petrol engine, he governed by missing impulses. This, of course, was the natural thing for him to do, as he had been engaged for many years with Dr. Otto, at the Deutz Works, near Cologne, in building "Otto" cycle gas engines. It was difficult for him to govern by cutting off the liquid fuel supply in the way that a gas engine cuts off the gas supply. As he had used an automatic admission valve to the engine cylinder, he therefore governed by means of the exhaust valve. He applied the governor to the exhaust valve spindle in such a manner that, when the speed rose the governor pulled out the knife edge opening the exhaust valve, and left the exhaust valve closed. In this way the piston of the engine simply compressed the gases within the cylinder, and compression and expansion went on alternately without opening the automatic inlet valve at all, and the pressure in the cylinder never fell below atmosphere until the exhaust valve was again opened by the fall in speed of the motor, and the consequent operation of the governor. This method of operation proved unsatisfactory, but it was the method of governing which was almost universal until about two years ago. The charge throttle method of governing was introduced a little before that time, and now it may be said to be almost universal. At the Glasgow Reliability Trials in 1901, when I acted on the Judging Committee, I noticed that some of the cars still adhered to the missing impulse type of governing, whereas at the recent Reliability Trials the throttle governor was practically universal. This method of governing has the great advantage of maintaining the full frequency of impulses, and graduating the power of the impulses within practically any required limits. Another method of controlling the impulse now in use consists in varying the moment of beginning the ignition. As a governing method this is an extremely bad one. If an engine be controlled by advance and retard sparking, the consumption of fuel remains practically constant for all loads, and no economy is obtained by running at light loads; and, further, the exhaust valve and exhaust pipe are liable to serious overheating. In order to discuss these matters intelligently, it is necessary to have some idea of the indicator diagram which is given by the petrol engine. To obtain an accurate diagram from a steam or gas engine is, at all times, a matter of considerable difficulty; but in the case of the high-speed petrol engine the difficulties become very great indeed. So great are the difficulties that as yet it cannot be said that we have obtained any really accurate indicator diagrams from high-speed petrol engines.

After giving a sufficient number of examples of the application of the various methods of governing to gas engines, the author said: I will proceed to deal with the petrol engine diagram. Before passing to the petrol engine, however, it is desirable to notice that in all gas engine diagrams, as the charge is reduced, not only does the explosion pressure become less, but the maximum pressure is attained later and later in the stroke. The reason of this is that, although the charge entering the cylinder is kept of constant explosive or combustible proportions, yet this volume is continually diminished. The exhaust products left in the compression space of the engine, however, remain constant in volume and very nearly constant in weight. Consequently, the diminishing weight of combustible charge is added to a constant weight of products of combustion, and thus, although the charge entering the cylinder is constant in proportions, the charge when mixed within the cylinder with the exhaust products becomes more and more dilute. In the Westinghouse, Crossley, Deutz, and Nurnberg engines, the last mixture entering the cylinder passes through a port of considerable dimensions; so that, although the cylinder itself and the combustion space is filled with somewhat dilute mixture, probably imperfectly mixed, yet the port itself always contains a fairly rich mixture. This renders the ignition certain when the hot tube is opened or the electric spark is passed. I may say that, in the really large gas engines of, say, 200-h.p. and upwards, the electric spark produced by magneto machine is almost invariably used now for ignition. The effect of the dilute mixture is to cause the combustion to be slower and slower, consequently in the Crossley diagrams we see the maximum pressure occurring at a longer and longer interval after ignition. In the Westinghouse card, where the engine is running quite light and the compression is only 25 lb., the combustion proceeds so slowly that the pressure practically never rises above the pressure of compression, and the card resembles in some respects the card given by a Diesel engine. In gas engine governing it is obviously necessary, to ensure accuracy of mechanical control, that for any given position of governor, or throttle, or cut-off lever, the impulse produced should be unvarying.

The evil of attempting to control for any length of time by retarding spark is readily seen in any four-cylinder petrol engine. If the engine be run with the throttle full open at a light load for even ten minutes, controlling the speed only by retarding spark, the exhaust pipe rapidly rises to a good red heat; and the exhaust valves, although one cannot see them, must be also red hot. I have observed in some engines, which evidently had been running for long periods with retard sparking, that the metal forming the exhaust valve spindle guide has actually been melted away round the spindle. It is not surprising, therefore, to find that much difficulty is experienced with exhaust valves when engines are run long with retarded spark. The retard spark method of controlling an engine is a most mischievous one, and all petrol engines should be designed so that the full range of controlling can be accomplished by throttling the charge. Variation in the timing of the spark should only be resorted to when it is desired to drop or raise the speed of the motor; and so it is necessary to retard the spark in order to avoid too early or late ignition.

I have taken a brake test from a 5-h.p. Wolsley engine in my possession, and find, although I have not yet indicated it, the actual brake pull requires a mean pressure of 72 lb. per square inch in the cylinder. Assuming

the efficiency to be 80 per cent., this requires an addition of 25 per cent. to 72 lb., which gives the mean pressure in the Wolsley cylinder as 90 lb.

Mr. Dawson has been experimenting with a petrol engine, four-cycle, cylinder $3\frac{1}{2}$ in. diameter, 5 in. stroke, and he has kindly sent me an indicator diagram which he has obtained by means of a special indicator made by himself. This indicator diagram shows a compression of 80 lb. per square inch, and a mean available pressure of 92 lb. per square inch.

Although the method of throttling the total charge is the easiest of application in practice, and perhaps at present the most satisfactory method of governing, yet it seems to me there is another method of operation which is superior to it in many theoretical and practical respects. The fall of compression required by the throttle method of governing results in an increase of petrol consumption per indicated horse-power obtained, and this would be avoided if the compression could be kept constant by admitting the air charge during the whole inlet stroke of the engine, and varying the time of admission of the petrol so as to come later and later in the stroke, as the engine became less and less loaded. Such a method of operation, however, introduces difficulties in maintaining constancy of proportion of petrol to air, and it requires care in shaping the combustion chamber so as to make certain to have mixture of standard strength near the ignition point. For such governing, a somewhat long combustion space is required. In governing of this kind, too, very effective proportioning of petrol to air is required, and a thoroughly effective mixing of the petrol with the air, however small the volume of petrol introduced. Governing of this kind, however, has the advantage that at light loads the mean temperature of the gases filling the cylinder is greatly reduced, and the economy of petrol for equal power would be as good at light loads as at heavy loads. Governing of this kind has been proposed for large gas engines, and an attempt is at present being made to introduce the system, but so far the other type of governing has proved more easy to handle. A governing cycle of this type is that followed by the De Dion engine. In that explosion engine the governing is performed by retaining a portion of the exhaust gases in the cylinder. A very neat arrangement is provided which closes the exhaust valve within limits at any determined part of the exhaust stroke, and so retains a portion of the exhaust gases in the cylinder. By this means the suction valve does not operate on the suction stroke until the exhaust gases compressed in the combustion space have again fallen to atmosphere. By this method the compression is kept up to a very considerable extent, and the volume of admitted charge varied. This control works very well, and gives and maintains impulse every cycle under very light loads. It seems to me, however, to have several objections, in that the hot exhaust gases are mixed with the incoming cold charge, and the mixture compressed is very hot to begin with. This, of course, leads to loss of petrol when running at light loads, as the added heat to produce a diagram area begins at a much higher temperature and therefore requires a larger heat loss.

Although the governing of the petrol engine is now fairly satisfactory, yet there is still much room for improvement. At very light loads throttle governing is apt to be somewhat unstable, and impulse changes occur in the cylinder independently of the movement of the controlling or governing lever. To produce the best possible governing, the first thing required is certainty of the proportion of combustible mixture at all speeds and loads. This is a question, of course, of the carburettor. The second appears to be certainty of ignition within the cylinder, not only as to firing or not firing, but as to firing exactly at the same time, and attaining the same maximum temperature at an equal movement of the piston. This requires good mixing, and at light loads as little mixing as possible of the combustible charge with the exhaust products in the combustion space of the cylinder. In the event of varying the speed greatly, it also requires some accurate mode of retarding or advancing the spark to keep the diagram always rising to a maximum at the compression end of the stroke at all speeds. In most cases this is done at present by a somewhat haphazard hand-operated arrangement. The best governing also seems to me to require constant compression and constant low temperature of the charge before compression. In addition to this, of course, to obtain a governor which does not "hunt," the mechanism of the governor must be arranged for stability, and possibly some dashpot arrangement introduced to prevent the governor acting too quickly. I have confined myself, however, to the heat fluid part of the problem to-night, and do not intend to enter at all into mechanical questions.

THE MOTOR CAR ACT.

IN view of the operation of the Motor-Car Act, several local authorities are suggesting to the Local Government Board the restriction of the speed of motor-cars passing through their area. In addition to those previously notified, the following have been brought to our notice:—

YORKSHIRE.—The circular from the West Riding authority asking the Holmfirth District Council to suggest any restrictions they desired under the Motor Car Act has been considered by a sub-committee, who suggested to the Council that, a restricted speed of ten miles an hour should be prescribed for the following portions of main roads:—Between railway station and Park Head Road (11 feet wide in narrowest place); between Lower Bridge and Prickleden (17 feet wide in narrowest place); and between Lower Bridge and Attorney Lump. The meeting altered the above to include the road from the bottom of Shaw Lane to the

boundary at Holme Banks, and from Ubberton to Attorney Lump. It was agreed to forward the above restrictions to the county authority with the recommendation that danger posts be fixed at dangerous places.

THE BARTON (near Leighton Buzzard) Parish Council has decided to ask the County Council to place a board at the south end of the village warning motorists to slow up when approaching that locality.

THE Portsmouth Corporation is among the few authorities who will place no restriction upon motorists under the new Act. The welcome piece of information was announced last week by Alderman T. Scott Foster, J.P., to a large gathering of motorists assembled at the George Hotel, Portsmouth, under the auspices of the Portsmouth Automobile Club. A resolution was passed on the motion of Mr. Foster, seconded by Mr. Vernon-Inkpen, expressing the thanks of motorists in the borough to the council and the police for their invariable courtesy. A suggestion contained in the resolution was that a caution board should be erected at the entrance to the borough.

HAMPSHIRE.—The District Councils of Eastleigh and Bishopstoke, near Southampton, have advised in favour of a ten-mile limit on all roads under their control.

THE Town Clerk of Liverpool points out that the duty of administering the Motor-Car Act so far as his City Council is concerned will naturally devolve upon the watch committee, and he proposes to include the Act in the duties of the committee when the new standing orders are under consideration. With regard to the licensing and registration of the cars and the licensing of the drivers, this will form part of the work of the town-clerk's department (public office). When the Act comes into operation the committee will probably find it convenient to refer the administration of it to the Hackney Carriages, &c., Sub-Committee.

CLUB NEWS.

MIDLAND.

THE Committee of the Midland Automobile Club have arranged with the manager of the Grand Hotel for the sole use of Room No. 4, as headquarters and club-room. This room will be open to members at any time, according to the hours of the hotel. A lock-up garage for as many as a dozen cars, with special stairway from same to club quarters, has been arranged for and the electrical engineer of the hotel will be in charge.

REPAIRING A MOTOR-CAR.

THE Motor Mart, Limited, has sued Chas. Gold, for £150s. 9d. in the Clerkenwell County Court. The claim was in respect of repairing a 4½-h.p. motor-car, which had been placed in plaintiff's hands for sale. During a trial trip the governor broke, and, at defendant's orders, they supplied a new governor and repaired the car.

Mr. Maynard, the engineer, who, with another man, did the work, said it was necessary to dismantle the whole of the car to get at the governor. Altogether he and the other man spent 16½ hours upon the car, for which they were paid 1s. 3d. per hour. Defendant said the only instruction he gave plaintiff was to put the governor right. This they said would only cost £5. On their undertaking to get the work finished in three weeks he agreed to the terms, but never gave instructions for any other work. Regarding this delay he counter-claimed £10 as damages. The Judge held that plaintiff, having done work beyond what was ordered, must suffer for it. He thought £5 was a reasonable sum for the work, and defendant having paid that into Court, the verdict would be in his favour, with costs. On the counter-claim, the verdict was in plaintiff's favour with costs.



The Up-to-Date Gipsy Van.

(Das Schnauferl, Munich.)

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Whitchurch	N. Booth	—	£5, etc.
South Shields	*A. Sergeant, Newcastle-on-Tyne	20	10s., etc.
Derby	*H. Albion, Derby	18	10s., etc.
Iluxton	F. Searle, Birkenhead	15	20s., etc.
Prescot	E. Surr, Huyton	25	£1, etc.
Brigg	D. B. Hall, Petworth	30	£5, etc.
Gosport	Capt. H. Meares	18	Dismissed.
Clonmel	Capt. Eustace	—	Adjourned.
Grantham	A. Dobson, Chelsea	20	£5, etc.
York	S. D. Eden	23½	£3, etc.
Newport, Mon.	R. Clay, Cardiff	—	£2 10s.
Downham	W. J. Crampton, London	—	20s., etc.
"	*F. P. Palmer	—	10s., etc.
Arundel	*G. Atkins, Arundel	20	10s., etc.
"	P. Lapworth, Arundel	—	10s., etc.
Stevinging	Lieut. R. L. Dawson, Coldstream Guards	31	£10, etc.
Lambeth	F. W. Headley, Peckham	18	40s., etc.
Barnstaple	A. Hammell, Fremington	25	Dismissed.
"	"	22	£6, etc.
Alton	W. C. White, Westminster, S.W.	—	40s.

* Indicates Motor-Cycle Cases.

LIEUT. R. L. DAWSON, Coldstream Guards, stationed at Chelsea Barracks, summoned to appear before the magistrates at the Stevinging petty sessions, on Monday, for driving a motor-car at a greater speed than twelve miles an hour and for not stopping when requested to do so by the police-constable who timed him, at Henfield, on October 3, excused himself for non-attendance on the ground that military duties intervened. He sent a letter from a superior officer to that effect. The chairman of the magistrates, however, declared that no military duty could override a summons to appear before them, and that in the event of a like plea being entered in the future a warrant would be issued. A penalty of £10 and costs was inflicted in each case; 31 miles an hour was the speed alleged. The defendant, who had got away from the constables on the 3rd inst., was concerned in an inquiry, which took place on the 6th inst., at Albourne, into the death of a girl who was accidentally killed through a motor accident on the 4th inst., and while there he was recognised by the constable who had timed him. Lieutenant Dawson pleaded "Not guilty" to both accusations.

POLICE TRAPS.

THE Town Clerk of Dover has informed the Dover Town Council that instructions have been given for a measured half-mile to be marked off at two or three of the principal entrances to the town, so that captures of motorists may be made by the police.

STOP watches and a measured quarter of a mile in Heyton Lane, near Prescot, are the latest adjuncts to the police equipment of that district.

At Acomb (York) is a measured distance of 599 yards.

A POLICE trap of 110 yards has been established on the Clapham Road, London, S.W.

BETWEEN Fremington and Tawstock, Devon, is a trap much used by the local police.

THE LIABILITY OF INNKEEPERS.

MR. WORSLEY-TAYLOR, K.C., M.P., and other magistrates have had before them at the Preston Quarter Sessions a case in which Arthur Earle, licensed victualler, surrendered to his bail to answer a charge that he, "being the keeper of a common inn, did, without sufficient cause, unlawfully neglect and refuse to receive as a guest in his house and find victuals and lodgings for one James Todd, a traveller, for which he was ready and willing to pay, at Lytham on June 25."

Mr. M'Nab for the prosecution said that it had long been the law that the keeper of a common inn was bound to provide accommodation for travellers so long as he had that accommodation and so long as a traveller was prepared to pay for it. In this case Mr. James Todd, who was accompanied by three companions, was returning on a motor-car from Rossall. Arriving at Lytham at midnight, they had a breakdown, and Mr. Todd went to the Clifton Arms Hotel, and asked for accommodation for himself and friend for the night. The boots reported to the defendant that two people wanted accommodation for the night, and Earle told him to tell the prosecutor there was no room. That was untrue, because the defendant subsequently admitted there was plenty of room. The explanation afterwards offered was that had Earle known it was Mr. Todd

he would have admitted him. Mr. Todd had taken this action in order that the public and publicans might know that hotels were intended for the accommodation of everybody. It was true Mr. Todd might have adopted another course and brought a civil action against Earle, but this was not a case of money, but of principle.

Mr. Todd gave evidence bearing out counsel's statement. He said that when he went to the hotel he first asked the night porter for a conveyance for the purpose of taking them to Preston. The porter replied that they could not have one, as the yard was closed. He then applied for accommodation for himself and friends. The boots went into the house and then returned and said: "You cannot stay, you cannot have the accommodation." Witness asked for the reason, and the boots made answer, "The house is full." Mr. Todd added that he told the boots to tell his master that he should bring an action against him. Subsequently they obtained a conveyance and drove to Preston.

Mr. A. W. Ladyman, solicitor and clerk to the Preston County Justices, who was with the prosecutor on the night named, also gave evidence. He added that he understood there had only been one such prosecution in Lancashire before.

The defendant said he was the licensee and manager of the hotel. On June 25th it was Lytham Club Day, and he and his staff had, in consequence, been kept exceptionally busy. Between 12.30 and 12.45 a.m. the boots came to the room where he was and said that a couple wanted accommodation. He ascertained that the couple had no luggage, and thereupon he said, "Will you tell them we have no accommodation?"

Ultimately the defendant was found guilty and fined 20s.

CLAIMS FOR DAMAGES.

MARK YEADON, of Bradford, has, at the Bradford County Court, been awarded £5 5s. damages against the Bradford Motor Car Company. He hired a motor from the company for three guineas, but it was alleged that it arrived too late, and would not work properly. Several times on the journey they had to stop and impede the traffic, and the claim was for expenditure caused by the breakdown. For the defence liability was denied.

At the Wakefield County Court, Ernest Bairstow, Earlsheaton, sued Henry Oram, New-street, Barnsley, for £5, compensation for the loss of his bicycle, rendered useless through defendant's negligence; and Oram counter-claimed for £3 10s. for damages to his motor-car. His Honour found for plaintiff for the sum claimed, with costs. The counter-claim was dismissed.

MOTOR-CAR ACCIDENT.

At the Commission Court, Dublin, last week, Richard Grainger O'Callaghan, of Swords, co. Dublin, was found guilty of causing the death of a boy named Brady in Phoenix Park by knocking him down with a motor-car. The boy was riding a bicycle at the time. Sentence of three months' imprisonment was passed.

WHILE Mr. George Turl, manager of a cycle works at Sunbury, was riding a motor-cycle with a trailer attached, in which were his two sons, a cow ran in front of the machine, upsetting the whole party. The boys escaped unhurt, but Mr. Turl sustained injuries that proved fatal. At the inquest on Saturday a verdict of "Accidental death" was returned.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

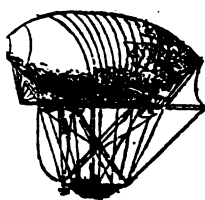
VOL. V.]

LONDON, SATURDAY, NOVEMBER 7, 1903.

[No. 244.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



SOME experiments with a new airship, built to the designs of Mr. W. Beadle, have been made at the Alexandra Palace this week. It is constructed on novel principles, and has two propellers, one propelling the airship forward, and the other being fitted in a frame which can be placed in any plane by means of a steering wheel. The capacity of the balloon is so arranged that the hydrogen gas will only lift it about forty feet from the ground, and it then depends on the steering propeller to rise, fall, or turn; by this means no gas is lost when coming down to the ground. The motive power is supplied by a Blake 12-15-h.p. 4-cylinder motor, which has been specially lightened by employing aluminium wherever possible. The framework is composed entirely of steel tubing. The cubic area of the balloon is 26,000ft., the length 93ft., and diameter 24ft. Both steering and driving are operated from a central compartment, which holds two passengers. Mr. Beadle has had excellent results from a model 12 ft. long, driven by india rubber bands, and could make it go in any direction and rise and fall by altering the position of the steering propeller, even when the gas was not sufficiently buoyant to lift the model off the ground, so that the experiments with the new airship will be followed with great interest.

The Scottish Club.

MR. J. WEIR and the Scottish Automobile Club have extracted an apology from the member of the Ayrshire County Council who recently raised his whip against the driver of a car in which Lord and Lady Ailsa were passengers. The incident was recorded in our columns a few weeks ago. Since then the Scottish Club took the matter up, and an apology has now been received from Mr. Inglis, who will probably recognise the rights of motorists when on the road in future. In this connection we would urge the need for all motorists to belong to their local clubs, and also congratulate the Scottish Automobile Club on its action in this matter, as well as on the recent accession of nearly a score of new members to its Western Section's ranks. The annual dinner of this branch of the Club will be held on the 7th inst., with Lord Inverclyde in the chair.

Marine Motoring.

THE topic of the weekly paper at the Automobile Club on Thursday, the 29th ult., was "Marine Motoring," the subject being dealt with by Mr. Bernard Redwood. The paper was a brief *resumé* of the rapid progress that has been made in this country with the new sport of marine motoring and the construction of motor-boats during the past twelve months, pictures of several well-known craft of this type being thrown on the screen. The author considered that the four-cycle petrol motor will supersede those of the two-cycle type, and that it is, in fact, already doing so in America. Owing to the necessity of

keeping the crank case compression tight, the method of construction will always make the two-cycle motor a comparatively heavy one, while the slightest amount of wear in the crank shaft bearings causes leakage and renders the motor inefficient. In concluding his paper Mr. Redwood gave an interesting comparison of the weight of a steam engine and boiler with a petrol engine of equal power, both intended for launch work. The weight of a 20-h.p. petrol engine, complete with reversing gear, batteries, etc., and petrol sufficient to take the boat sixty miles, is nearly 5 cwt. A 20-h.p. double-acting condensing steam engine and boiler complete would weigh about two tons, and coal and water sufficient to last for sixty miles would amount to 1 ton 3 cwt., making a total of 3 tons 3 cwt., or twelve times the weight of the petrol engine and fuel. The gain in weight and space is therefore considerable, and allows of greater comfort, or of a much larger number of passengers being carried.

The Discussion.

IN the discussion which ensued, several speakers, including Mr. S. F. Edge and Lieut. C. Mansfield-Cummings, urged the necessity of an immediate alteration in the rules relating to the Harmsworth Cup race, otherwise foreign marine motorists will be prevented from competing. Mr. Boverton Redwood pointed out that the rules were really only of a tentative nature and that the matter will be taken in hand without delay by the Marine Motor Association. He also dealt at length with the danger of petrol on motor-boats, and more especially auxiliary yachts, unless extreme care were taken in the way of ventilation and of preventing the vapour coming into contact with a light. He even considered it better for the permanency of the motor-boat movement that progress for some time should be slow, rather than that it should become a popular one before the extreme importance of the great precautions necessary were fully recognised.

Narrow Roads.

IT may be well to remind some of the local authorities that are now recommending the closing of certain roads in their area that they may ultimately be called upon to widen them, for by thus advocating the closing of the roads they are acknowledging their unsuitability for modern traffic and proving the difficulties of travel between one town and another. In the days to come the ordinary roads will be the great highways of locomotion, and the present narrow lanes in many country districts will have to be widened out to meet the needs of the time.

Motor Buses at Bolton.

HITHERTO the southern counties and the holiday resorts nearest London have been rather more enterprising than those in the north with regard to automobilism. True, Blackpool was a pioneer, and Lincoln had a line of public service vehicles some few years ago, but they have long ceased to travel and their engines are at rest. Now, however, Lancashire is moving in the matter, and the Bolton Corporation intends to run a motor bus service, the vehicles selected being from the Stirling

works at Edinburgh. It is to be hoped that the Corporation authorities will treat their automobiles intelligently and have them thoroughly overhauled as the railway companies have their locomotives inspected, so that economy in working as well as efficiency in running may be secured. Past failures have generally arisen from absence of care in this respect.



Mr. G. Taylor, the Hero of the Maidenhead Tollgate.

Motorists at the Meet.

THE hunting season having begun, the presence of motorists at meets has again cropped up, and it is evident that the automobile is gradually becoming recognised as a great convenience. Of course, old-fashioned masters of hounds are not likely to quickly accustom themselves to the disturbance of the traditions of the hunting field, and motorists can do much to make their way pleasant by driving carefully and not doing anything to upset the nerves of the hunters as well as of the huntsmen.

The Freeing of Maidenhead Bridge.

ON Saturday midnight the last toll-gate was removed from the Bath Road, the outcome of an agitation conducted by Mr. Gilbert Taylor, of Eton, who two years ago gave the sum of fourpence, under protest, to pass over the bridge. Mr. Taylor, who was successful in freeing Windsor Bridge, forced the hand of the Maidenhead Corporation, and as the result of the inquiry the Corporation were advised to cease taking tolls after the expiration of the lease. This occurred on Saturday night, and the people of Maidenhead celebrated the event by tearing down the toll-gate and throwing it over the bridge into the river. Mr. Taylor, who appeared on the scene at midnight, came in for a great reception, and was the first to pass over the free bridge in a motor-car driven by Mr. J. Fullbrook, of Slough, who has been closely associated with him in the struggle in connection with the Maidenhead toll-gate.

Into the Thames.

THE scene was a memorable one. Shortly after eleven o'clock a great crowd of nearly a thousand people collected. The Corporation had a cart ready to convey the toll-gate to somewhere or other, but just before midnight the people wrenched the gate from its hinges and threw it into the Thames. At midnight an improvised meeting was held,

Mr. Taylor being the chief speaker. Mr. Good, an ex-mayor of Maidenhead, expressed the view that the people of Maidenhead would soon regret Mr. Taylor's action, but Mr. Fullbrook reminded the burgesses that there was a valuable estate attached to the bridge, and that if they looked after the affairs of the town no great burden need fall on the rates.

Subscriptions Wanted.

THE expenses of the agitation have been heavy, and for more than three years the result was in jeopardy. Originally the toll was 2s. for motorists; successive reductions bringing it to 8d., 6d., and 2d., until now it has been abolished. The case of Taylor v. the Corporation of Maidenhead has yet to be heard, and motorists who recognise the good work that has been done are invited to contribute towards the cost. So far, the appeal for funds has produced £35, the Automobile Club, Dr. Bruce Porter, the Hozier Engineering Company, Mr. Mark Mayhew, L.C.C., and Mr. Maurice Egerton being among the subscribers. It is not too late for users of the road to show their appreciation of the work that has been done, and subscriptions may still be sent to Mr. J. Fullbrook, Slough; or Mr. G. Taylor, High Street, Eton.

Private Touting.

A LEADING motor-car firm in the Midlands writes us with regard to a matter upon which comment was made in these columns some time ago, viz., the attempts of individuals to obtain commissions from makers of or dealers in automobiles. We have heard of the ladies who draw attention to something in which they are interested, and, having secured a friend anxious to possess a similar article, make haste to the seller to secure commissions for what they have done. The same bad practice—bad for one's friends as well as for the trade—has crept into the automobile business.



Mr. G. Odell, a well-known American Tenor, who will shortly be seen in a new light opera, in his City and Suburban Electric Brougham.

Photo by]

[The Biograph Studio.

What the Trade should do.

EVERY motor manufacturer knows what a lot of "private touting" there is in connection with his business, and he is continually pestered with private individuals and tradespeople not in any way connected with the motor-car industry, for commissions on sales which are made or can be made on their recommendation. Many firms, wise in their generation, have strongly opposed the practice of allowing discounts or com-

missions to such persons, and they will naturally continue to refuse to do business except through the proper channels. Mr. H. Austin thinks it is quite time that the trade came to a proper understanding on this question, as it is not by any means a new difficulty, or one which it is impossible to overcome. It is also obviously unfair for a manufacturer to publish a net price list, and then take off discounts to individual clients. This is a matter which might perhaps just as well be discussed at the same time, and for which purpose our columns are open.

The Identification Mark.

ONE point about the Local Government Board regulations, a forecast of which appeared in our columns last week, is the insistence upon two marks of identification upon cars. This is generally regarded as contrary to the spirit and scope of the new legislation, and should the present intention of the Board be maintained, the executive committee of the Motor Union will take the matter to the High Court of Justice. It will be bad enough to have to submit to the one mark of identification, and there is certainly no reason to double the irritation. But evidently the Local Government Board regards "two plates" as "one mark."

regard to the erection of sign-posts denoting dangerous corners, etc. It is proposed at a later date to report in detail to the Council with regard to the various provisions of the two Acts, but the Committee thought that in the meantime the Council should decide upon the fees to be charged. The solicitor does not consider it necessary for the licences to be issued under the seal of the Council, as such a course would entail serious delay and inconvenience, and the Committee has accordingly arranged for the licences to be issued by the Clerk of the Council. At the meeting of the Council the report was withdrawn for a week by the Chairman of the Committee (Mr. J. Williams Benn). Asked the reason for his action by Mr. Mark Mayhew, Mr. Benn replied that there was a slight technical error which needed amendment. The report will be again presented next Tuesday.

The Irish Regulations.

ACCORDING to the regulations which the Irish Local Government Board is likely to adopt under the Motor Car Act, only the back number on the car will require to be illuminated—a course more commendable than the probable English requirement as to both numbers being illuminated. Motorists in Ireland will be allowed to obtain their own identi-



The North-Eastern Railway Company's Motor-Bus Service between Beverley and Beeford.—The two Stirling 24-h.p. vehicles at the Railway Station at Beverley. (See issue Sept. 5th.)

Index Letters.

WHILE our forecast of the Regulations may be altered in some minor details, as a result of the discussion of the matter by the committees of the clubs, it will be found that the schedules, etc., will be identical with those given, although the juxtaposition of certain letters in the proposed index signs will cause some amusement. Why the West Suffolk Council should be distinguished by the letters C.C., and that of East Suffolk be designated B.F., does not seem clear. There is a Metropolitan tinge about E.C., but this is given to Cardiganshire. The London County Council will be A. and the County Borough of Leicester, B.A.

The L.C.C. and the Motor Car Act.

AT the meeting of the London County Council, on Tuesday, there was to have been an interesting report from the Highways Committee on the subject of the administration of the Motor Car Acts, 1896 and 1903. The work entailed in registering cars and licensing drivers will, for a time, at any rate, be very heavy, and the Committee thought it was important that the books and forms which will be required for the purpose should be settled with as little delay as possible. It also reported that the maximum fees allowed by the Act should be charged. The Committee have given instructions with a view to ascertaining what action it is desirable should be taken with

fication plates instead of having to purchase them from the registering authority. Otherwise the regulations at present suggested run on much the same lines as those outlined in the *Journal* last week with regard to England and Wales.

The Closing of Roadways.

RUMOURS have been rife in automobile circles during the last few days as to the probability of the Local Government Board ignoring its power of closing roads to motor-cars and allowing the local authorities to do so on their own initiative. We cannot credit such an idea, as it would be clearly against the intention of the Act. The evident idea was, while allowing the local authorities to suggest roads to be closed, to protect motorists from the prejudice and intolerance of bucolic bigwigs. We were at least assured that merely local opposition would not have supreme sway in this matter, and rely upon the Local Government Board exercising a wise and tolerant prerogative in the matter.

The Organisation of Trials.

AT a meeting of the Committee of the A.C.G.B.I. on Tuesday, the following resolution was adopted: "That it is not in the interests of automobilism that road trials should be held except by the Automobile Club of Great Britain and Ireland, affiliated clubs, and recognised bodies, and that no permits be given for any events which disregard this principle, and that all persons taking part in such unauthorised trials be dis-

qualified from Club competitions." The wisdom of such a resolution will be apparent at first glance. The Club has experience, organising facilities, and the prestige of impartiality at its back to add to the value of the trials it arranges from time to time. Road tests under any other auspices must be unsatisfactory both to the public and the trade, and now that the Club intends to disqualify all participants in unauthorised contests from its own trials, the failure of other people in connection with such events is assured.

Progress in Australia.

A SERVICE of motor-omnibuses has been inaugurated at Perth, Western Australia, the Jenolan Caves being the objective point of the run. The idea should be extended, for the adoption of the automobile in Australia should encourage communication into directions where railway building cannot be continued—and there are said to be many such districts—for lack of funds.

Opening up Touring Counties.

THE success that has attended the Great Western Railway Company's motor-car service in Cornwall will probably lead to important developments next season. Already it has been amply demonstrated that the automobile is particularly useful in connection with touring work, and the combination of railway and motor-car by the companies serving popular holiday districts will increase their revenue in more ways than one. Already the G.W.R. has been inundated with applications for motor-car services in districts through which their line runs, and a great forward movement in this direction will give further prosperity to the motor-car industry. It is freely rumoured that the company has decided to place twenty-five motor vehicles into public service next season.

The Club Discussions.

MR. E. H. COZENS-HARDY is to give some criticisms of the rules and organisation of the recent speed and reliability trials in a paper to be read at the Automobile Club on the 10th prox. It is to be hoped that there will be a good attendance of members of the trade and of observers who participated in the events of September last, so that the discussion may be productive of some useful hints to the committee for future guidance. It seems a pity that these meetings do not commence until 9 o'clock and end at such a late hour as to make it impossible for those who live at a distance to attend. Why not commence an hour or two earlier and thus invest the proceedings with more of the practical and less of the post-prandial character?

Teaching the Police.

THE case of Mr. R. G. O'Callaghan, tried for the manslaughter of a boy by running over him with his motor-car in the Phoenix Park, Dublin, which resulted in a sentence of three months' imprisonment, suggests some points worth noting. It was made evident at the trial that the constable on fixed point duty in the middle of the road, seeing the car coming on at a high rate of speed, became concerned for his own safety and, stepping quickly to one side, got in front of the boy, who was obliged to swerve outwards in front of the motor, lost his head, and, failing to clear the car, came to his untimely end. To any motorist aware of the facts it will be evident that the constable was never in the slightest danger and need not have stirred an inch. No man accustomed to fixed point duty where motor-cars are in the habit of passing would have felt the least alarm, but seeing what did occur we strongly advocate the desirability of some training for constables likely to have the control of traffic in which motor-cars may figure. Occasional exhibitions might be given before the men in suitable places. These quickly teach them what a motor-car can do and how much under control it really is.

International Races in the United States.

THE second annual Winter Race Meet on the Ormond-Daytona Beach, Florida, will take place from January 25th to 30th, 1904, under the management of the "Automobile Magazine," with the patronage of the Florida East Coast Automobile Association. The Ormond-Daytona Beach is the most unique speed course in the United States, as it is completely level and is so hard that a large twelve-passenger bus with solid tyres leaves only the slightest impression on the surface. It is twenty miles in length, is as straight as an arrow, and at low tide is nearly 100 yards wide. English and Continental drivers are invited to take part in the forthcoming races, and all particulars in regard the tournament, which will be run purely as an amateur sporting event, can be obtained from Mr. J. Morgan, 1, Maiden Lane, New York.

The Floods.

THERE is no need to remind readers of the watery condition of roads and skies alike during recent days. The photograph on page 666 of our last issue depicted a familiar scene on the Great North Road during the last few weeks. The floods were particularly severe between Sandy and Biggleswade, where the road was impassable, and travellers had to make a detour of some miles *via* Caldicote.

A Legal Expense Fund.

ON a previous page we have referred to the intention of the Motor Union to take the opinion of the High Court as to whether the suggestion that motor-cars should carry two plates is in accordance with the Motor Car Act. We now learn that a special fund has been opened for the purpose of meeting the legal expenses which will be incurred in settling this and a number of doubtful points which will arise in connection with the administration of the Act. Any automobilist desirous of contributing to this fund should write to Mr. W. Rees Jeffreys, Administrative Secretary, A.C.G.B.I., 119, Piccadilly, W.

The Views of a Trade Association.

THE committee of the Automobile Mutual Protection Association, Limited, has forwarded some observations to the Local Government Board with reference to the Motor Car Act. They suggest that only one mark is desirable on cars, and that the provision of two plates was not contemplated in the Act. Further, that the identification mark should only be placed behind the car. Exception is also taken to some of the fees to be charged. With regard to the clause affecting traders, the committee urge that the keeping of a record of each occasion when a motor-car is taken out is impracticable. Other points of amendment are also proposed, but, the copy of the letter only reaching us at the moment of going to press, we are unable to give them in detail.

THE Taff Vale Railway has inaugurated a service of motor-coaches on some of its tracks.

MR. T. SILVER is making a long tour through South Africa on a 3-h.p. Quadrant motor-cycle.

THE Bishop of Winchester has been making a pastoral visitation through the Isle of Wight on a motor-car.

THE first annual dinner of the Motor Volunteer Corps will be held on Tuesday, December 8th, at the Trocadero Restaurant, W.

A MOVEMENT is on foot to form a Berkshire Automobile Club. Colonel Waring, J.P., Reading, and Mr. Shrapnell Smith, Lavender Cottage, Easthampstead, Bracknell, are the leading spirits in the movement.

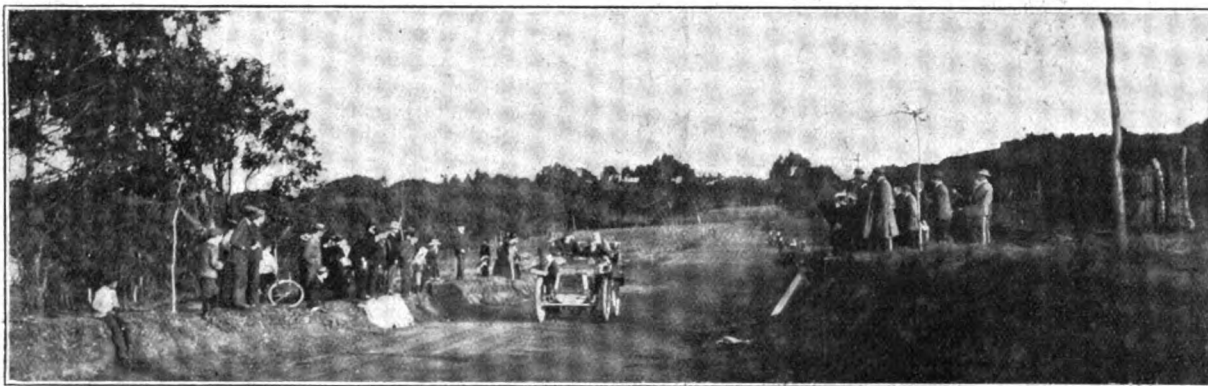
IN THE FENS.

AUTOMOBILISM is being strongly supported in Lincolnshire, and from the premier baronet of England, Sir Hickman Bacon, who resides at Gainsborough, to the most hard-worked country practitioner a general movement in favour of the motor-car is going on. In encouraging this trend the Lincolnshire Club has been an important factor, but unfortunately the agricultural depression—relieved in some districts by attention being given to the growing of potatoes and market garden produce—has lessened the demand for cars somewhat. Then, too, the bad weather of the earlier part of the season proved restrictive to the local industry, and complaints as to the absence of actual orders have been common, although there have been hundreds of unproductive inquiries and scores of hopes of orders unrealised. Still the public opinion in favour of cars is so general that only a return of prosperity is necessary to make the county of Lincolnshire an important customer to the British trade.

But with the discussions now taking place at meetings of the local councils in the county with regard to the Motor Car Act that will come into force next year, those engaged in the automobile industry in Lincolnshire are somewhat fearful. The other day the matter of prohibition by the Local Government Board of motor-cars going along roads of less than sixteen feet in width was considered by the Roads and Bridges Committee of the Hol-

cars therefrom. Already the Rev. Howard Hopley, the vicar of one well-known parish has been pleading that footpaths should be provided at the side of all roads for the safety and convenience of pedestrians, and that is a subject to which study will have to be given in the near future. In his district there are several roads four or five miles long which intersect one another and which have no refuge for the man on foot. Seeing that the market town is not far away and that historic scenery is within walking distance, it may easily be imagined that motor-cars are numerous visitants in his locality. Surely the local authorities should be persuaded to provide a path for the pedestrian, so that motorists and drivers of horse-drawn vehicles may know the limits of the legitimate roadway for their service, and that those who journey on foot may do so with the minimum of annoyance.

Of course, the new section of the Motor Car Act with regard to the 16 ft. roadway gives added interest to the subject. Had the Local Government Board decided to measure only the roadway under Clause 8, it would have been very easy for local authorities to have absolutely prohibited cars from the highways by merely widening the footpath to the restriction of the road for vehicles. But fortunately the question as to what constitutes a 16-ft. road has been determined and that the measurement is to be between hedges is a matter of supreme importance. Recently, in the Fen district of Lincolnshire, we found a state of things which is typical of much of our country. The width of the actual surface available for-



The Meet of the South African Automobile Club at "Groot Schuur." Dr. Jamieson's 22-h.p. Daimler in the Mile Speed Trial.

land. (Lincolnshire) County Council. Several prejudiced remarks were heard, one facetious gentleman declaring that he would want a notice board put up at every fifty yards' interval in his neighbourhood. Mr. Upsall quoted the case of the northern farmer who is reported to have put a bullet into a motor-car tyre, and added, "That is the only way to stop a motor-car driver." Fortunately such a prejudiced view is not general throughout the Fenslands, where both clergy and doctors are recognising the utility of the automobile.

One leading motoring firm in Boston believes that the result of the 16 ft. clause will affect many of the country doctors who use their vehicles solely in a professional way, and may, in fact, compel them to abandon motoring altogether. On the other hand, a Lincolnshire clergyman informs us that there is scarcely likely to be any difficulty in connection with this matter, as the feeling against motorists is extremely limited. "I give the North Holland and other local authorities in that part of the country the credit," he says, "of believing they are too sensible to suggest closing any of the roads. In that corner of Lincolnshire there are many motorists, and they have had nothing from the police and local authorities but kindness and courtesy. This is because, thanks to the Lincolnshire Automobile Club, the spirit of tolerance and courtesy to other users of the road has been fostered, and none of our members ever forget to be gentlemen."

We shall hear much during the next few months as to the width of country roads and the desire of many people to keep motor-

pedestrians and vehicles is about 14 or 15ft. On one side is a grass-grown bank sloping down to a dyke, beyond which is a hedge. On the other side of the road, a drain about 10ft. in width, separates the roadway from another hedge—the distance from hedge to hedge being about 30ft. Such a road cannot, by the provisions of the Clause in the Act relating to the 16ft. road, be prohibited, but had the roadway been regarded as the line of measurement it would undoubtedly have been closed.

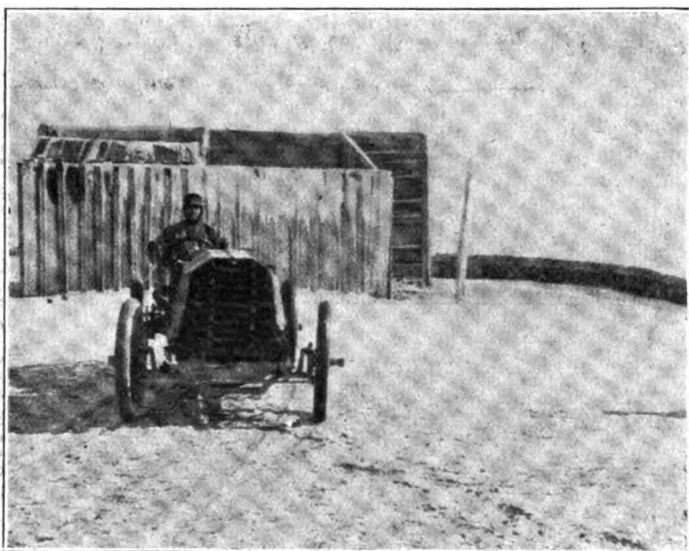
THE Automobile Club has decided to take over the whole governance of non-stop runs, an official record being kept by the Technical Secretary.

WE learn that Messrs. Moseleys, Ltd., of the Chapelfield Works, Manchester, have put down a plant for the repair of motor-tyres, and are now in a position to undertake repairs to all kinds of tyres at short notice.

A NEW acetylene headlight for motor-cars has been put on the market by Messrs. J. Bartlett and Company, of South Tottenham. The lamp, which is known as the "Bartlite," is claimed to possess a number of advantages, chief among which may be mentioned that the generation of gas can be stopped at once, thus preventing waste of gas; and, if the charge of calcium carbide has not been exhausted, the lamp can be put on one side for a week or a month, and relighted when required without recharging. It has no gas-bag or rubber connections, and will burn for twelve hours on one charge of carbide and one of water.

CONTINENTAL NOTES.

THE 1904 Gordon Bennett race continues to be the principal topic of conversation in motoring circles on the Continent. It would seem that the course in the Homburg district is likely to be adopted, seeing that Prince Henry of Prussia, the Kaiser's brother, went over it last week in a 45-h.p. car and reported favourably upon it. The Belgian Club has decided that its eliminating contest for the Belgian team shall be held a month before the big race and be over a distance of 500 kilometres. The three fastest cars in the trial will, it has been decided, represent Belgium in the contest. The Italian Club has already selected the drivers for the Italian team; they will be Signors Storer, Lancia and Felice, and each will drive Fiat racers of 70-h.p.



M. Rougier on his Turcat-Mery Car at the Summit of Mont Ventoux. (See last issue.)

FOLLOWING the example of Belgium, Austria, and Italy, it is possible that next year Holland will make its first appearance in the great international event, for it is announced that the Dutch Automobile Club will probably be represented by a Spyker car of novel design. It is stated that the vehicle will have a six-cylinder engine of about 60-h.p. Baron de Crawhez is spoken of as likely to be its driver.

THE result of the town and suburban motor-vehicle contest of the A.C.F. has now been announced. In the town vehicle competition De Dion gets a gold medal for the coupé, Gillet-Forest a gold medal for both the omnibus and the delivery van, Collin a silver medal for his *avant-train* or motor fore-carriage illustrated in the last issue, and Aries a bronze medal for the limousine. In the suburban vehicle contest De Dion secures a gold medal for the delivery van and a silver medal for the lorry, while a gold medal is awarded to the De Dietrich omnibus.

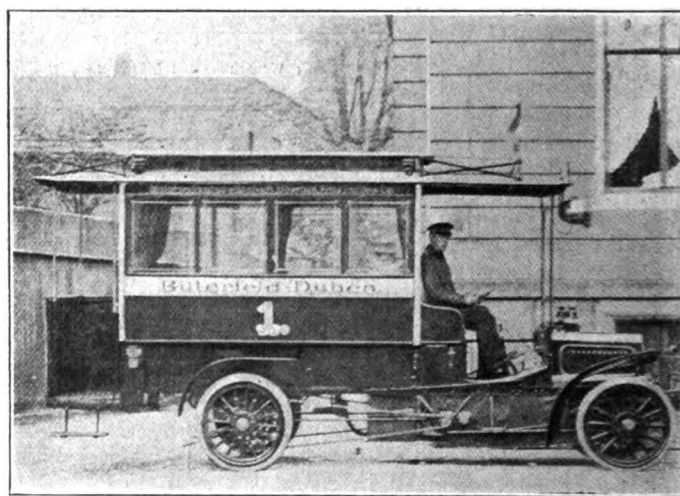
AN important proposal is just now occupying the attention of the members of the A.C.F. The Marquis de Dion and other members, with a view to alleviating the dissatisfaction with which a certain section of the public regard motorists, have conceived the idea of instituting a kind of espionage over *chauffeurs*. They have been moved to take this step because the police are powerless to prevent furious driving. The idea is for every member of the Club, when he sees a motor-car proceeding at too rapid a pace in dangerous places, to take the number of the car, and send it to a special committee of the Club, which will first of all administer a reprimand, and, in case of a second offence, exclude the owner of the car from the Club. If it is a very bad case, the committee will be given power to denounce the offender to the police. Although the scheme is conceived in the interests

of automobilists as a body, it does not commend itself to every member of the Club, and consequently it has given rise to an animated discussion.

It is definitely decided that the Gaillon hill climb shall take place on Sunday next. The hill is about a kilometre long, the average gradient being about 9 per cent. There will be the usual categories for both touring and racing vehicles, which will make the climb with a flying start, on a 500 metre level stretch. The entries so far include four Serpollets, two De Dietrichs, a Tony-Huber, a Boyer, a Mors, a 50-h.p. Wolseley, and a Vinot-Deguingand. It may be added that last year the event was won by Le Blon on a Serpollet steamer, who made the ascent in 30 secs.

It was reported some weeks ago that Gabriel was severing his connection with the Mors Company, and that he would in future be seen piloting Renault racing cars. The report proves to have been somewhat premature, as it has just been definitely announced that this well-known *chauffeur* has entered the staff of the De Dietrich Company, whose cars he will drive in future races. It is stated that he will take part in some of the American track races early in the new year.

MADAME LOCKERT, who is back again in Paris after her trip to St. Petersburg by road on the 14-h.p. Tony-Huber car, has kindly given me a brief account of her experiences. No great difficulties were encountered as far as Berlin, but after leaving the German capital, not only did the weather prove unkind, but much delay was caused owing to the trouble in obtaining supplies of spirit and lubricating oil. Arrived at the Russian frontier, Madame, although provided with passports, was refused admission on the ground that her papers did not permit of her entering the country by road. Fortune, however, favoured her the next day, for a lieutenant-colonel in the Russian army became interested in the trip, and after some delay the local chief of the Customs was prevailed upon to allow the car to enter, not, however, until a sum of 302 roubles had been paid. Slow but steady progress was made across Poland towards the Russian capital, and, notwithstanding the bad roads and the snow, only one puncture was experienced in a journey of 500 miles. Madame Lockert,



The Benz Public Service Vehicle.

while not being prepossessed with Russia, considers as a result of her journey that an excursion—not a race—from Paris to St. Petersburg is quite feasible, provided that the cars employed are not too heavy nor yet too speedy.

AMONG the firms which have recently taken up the construction of public service vehicles is Messrs. Benz and Company, of Mannheim. The above illustration shows a sixteen-seated vehicle lately completed by this concern for a service between Bitterfeld and Düben, a distance of twenty-six kilo-

metres. The car, which has to make two round journeys per day, is driven by a 16-h.p. horizontal double-opposed cylinder engine. The transmission is by a single belt, gear, and chains.

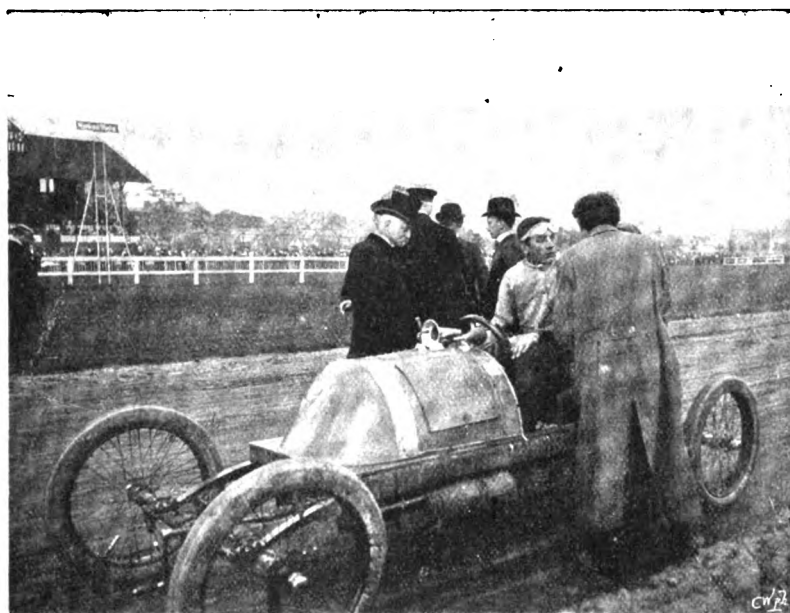
THE battle between the burgomaster of Brussels and motorists in that city has taken a new phase, and this time victory lies with the burgomaster. On appeal, the Correctional Tribunal of Brussels has reversed the decision of the police-court judge, who held the burgomaster's regulations limiting the speed of motor-cars in certain thoroughfares to five kilometres per hour to be illegal, because made *ultra vires*, and dismissed all cases brought against *chauffeurs* under it. The Correctional Tribunal, in upholding the burgomaster's regulations, imposed a fine of five francs on each of the motorists, against whose acquittal at the police-court the Procureur de Roi had appealed. It is hardly likely that the matter will be allowed to rest, and the action of the A.C.B. on the subject is being anxiously awaited.

THE awards in the reliability trials held by the Dutch Automobile Club have just been made known. The maximum number of marks was 1,450, and the following five cars went through without losing a single mark:—A 4-h.p. Daimler, two

A GERMAN motor-car concern—the Berlin Motor-wagen-fabrik Tempelhof—is reported to have just completed an order for no less than sixteen petrol cars for use by the Royal family of China between the summer and winter residences in Tientsin. Three of the cars, those intended to convey the King, Queen, and the Ex-Queen, are most sumptuously fitted up; the remaining thirteen, which are intended to carry the Royal suite and attendants, are arranged as omnibuses. The vehicles are driven by double cylinder petrol engines and have cardan shaft transmission and solid-tyred wheels.

SOME interesting experiments in connection with the regulation of the speed of motor-cars were carried out on Monday morning before members of the extra-Parliamentary Committee in the Bois de Boulogne, Paris. On a wet and slippery road, whilst a cab and a two-horse brougham, travelling at the rate of $7\frac{1}{2}$ and $11\frac{1}{2}$ miles an hour, could only pull up in an average of 40 ft. and 49 ft. respectively, the motor-cars were able to stop in the first case within 10 ft., and in the second in 18 ft.

MESSRS. R. AND H. LANE, High Street, Peckham, S.E., have a plant for re-charging motor-car batteries.



The Cudell Racing Car "Torpilleur," which took part in the recent track races at Frankfort-am-Main. [Allgemeine Automobil Zeitung.]

12-h.p. Darracqs, a 7-h.p. Panhard, and a 20-25-h.p. Peugeot. A good many cars lost marks owing to punctures, which were somewhat numerous.

MESSRS. DE DION AND BOUTON have at last brought out a four-cylinder motor, a car fitted with it being seen in Paris the other day. The engine has separate cylinders 100 mm. dia. by 110 mm. stroke, mounted on a large crank case, and is stated to develop 32-h.p. The new engine is apparently not yet out of the experimental stage, and will probably not be put on the market for some time.

ON Sunday next the Moto-Club de Marseille is holding a touring competition for motor-cycles of all kinds. The course is over a distance of about 100 kilometres. The speed of the machines has not to exceed thirty kilometres nor be less than twenty-five kilometres per hour.

THE Russian Postmaster-General is reported to have just given out an order for twenty-four special motor-cars for use in connection with the postal service. The cars will not only be employed in the delivery of letters, but will also collect parcels in all parts of the Russian capital,

AMONG new members of the Motor Union we notice the name of Mr. W. S. Ross, of Melbourne, Australia.

WE hear that the Humber Company are bringing out still another new car—a $7\frac{1}{2}$ -h.p. two-cylinder vehicle to carry four persons.

At the annual meeting of Joseph Lucas, Limited, at Birmingham on Tuesday, Mr. H. Lucas said the profit made on the year's business was rather more than in the preceding year, and this was the more satisfactory because during the year the company had been developing a new branch of business, "motoralities," and were now getting the thin end of the wedge into the motor trade.

THE employees of the Hoxier Engineering Co., Ltd., makers of the "Argyll" car, held a successful supper and dance on Friday of last week. Probably the most interesting feature of the function was the speech made by one of the workmen in proposing the continued success of the company, in which he asserted that the failure in a number of the trades was due to the fact that the masters had not supported the men in providing them with the most up-to-date tools. He called on all British employers to provide the British workmen with the best tools, and he asserted that Britain would then be sure to maintain its supremacy.

SOUTH AFRICAN NEWS.

[FROM OUR OWN CORRESPONDENT.]

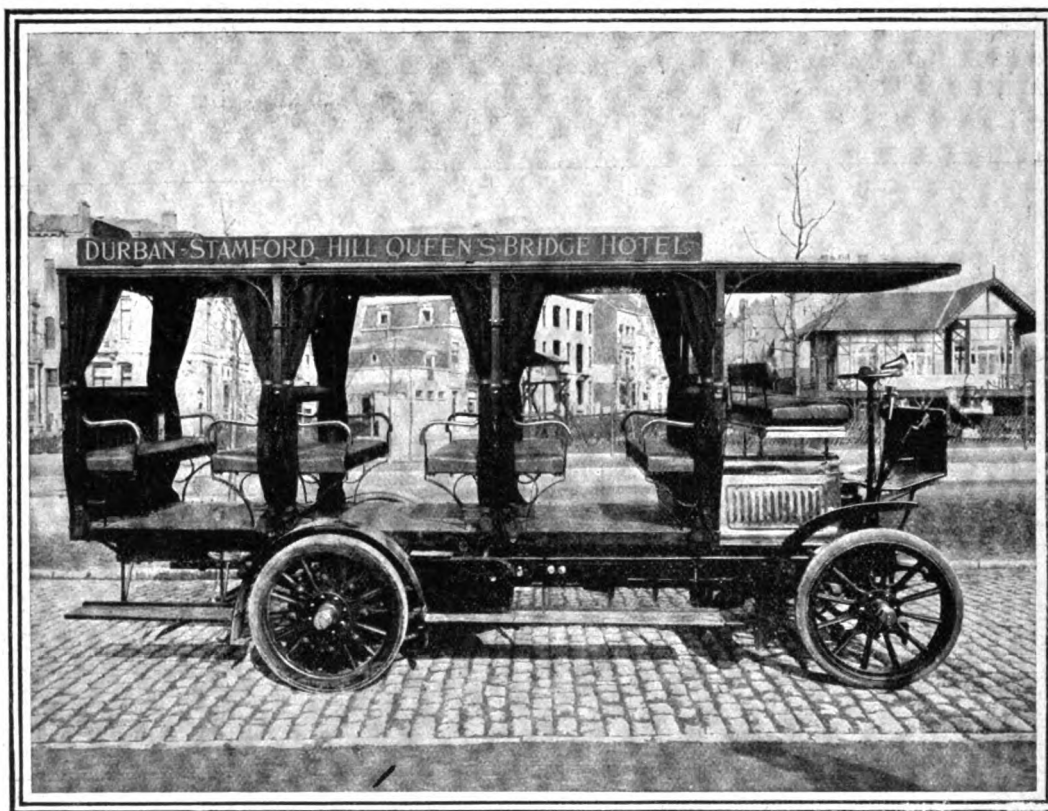
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CAPE TOWN, October 7th, 1903.

A LINE of omnibuses will shortly be started in the district of Simon's Town. I understand that the 'buses are Milnes-Daimlers. The company is known as Kommetjes Limited, Kommetje being a place near Simon's Town.

A PUBLIC service of motor-cars has recently been started between Durban and the suburb of Stamford Hill, the distance being about four miles. Two Germain cars are at present on the service and I hear that they are giving every satisfaction, and that although only built to carry eighteen passengers, they nearly always have double that number, and with this load make the journey in twenty minutes. As will be seen

Railways, and for this level crossing they made, Mr. Garlick at the wheel and the mechanic in the tonneau. Owing to the road crossing the rails at an angle, they could not see that the gate on the far side of the track was shut, and before anyone could dismount to open it the Johannesburg night mail for the north came roaring around the curve only a few yards away. Before the reverse could be thrown in, the locomotive struck the near side of the car with a tremendous impact, hurling the occupants in all directions, the vehicle itself being thrown a distance of forty yards. The driver and mechanic picked themselves up, bruised and shaken, but not seriously injured; matters had gone worse with Mr. Markham, who was found insensible, with his left hip crushed. Together they picked him up and were about to carry him to a house near by, when Messrs. Menzies, Adams and Kingswell drove up in a Panhard, and helped to convey him to the Somerset Hospital, where he now lies in a precarious condition. The fact of the



The 15-h.p. Germain Public Service Car at Durban.

from the photograph, the "body" of the vehicles is on somewhat different lines, so far as motor-cars are concerned. The motive power is supplied by a Germain 15-h.p. four-cylinder engine, four speeds forward and reverse are available, the maximum being about twelve miles per hour. The front wheels have solid rubber tyres, while those on the hind wheels are iron. The extreme length of the vehicles is 17½ ft., while the tare weight is 2 tons 13 cwt.

I HEAR that Mr. George Wilson, Deputy Commissioner for the Protectorate of Uganda, is bringing to Africa a 25-h.p. car which he proposes to utilise on his tours of inspection throughout Uganda.

NOTHING of much interest to the trade has occurred since the last meet of the South African Automobile Club.

AN accident in which a motor-car was involved occurred at Maitland, near Cape Town, last week. A mechanic took the 24-h.p. Darracq belonging to Mr. J. Garlick for a run, intending to go as far as Durban Road. From Mowbray to Maitland the road crosses the main line of the Cape Government

railway people leaving a level crossing not only half open and half shut, but utterly unattended, is a state of affairs which would not be tolerated in any civilised country.

THE Cape Town Metropolitan Fire Brigade have received their petrol motor hose truck from Messrs. Merryweather. It is fitted with a 12-h.p. Aster engine, and on its trial trip proved itself eminently efficient, carrying 1,200 feet of hose up the steepest incline in Cape Town with ease. It is in charge of an old Daimler hand.

It has been decided to form a Northern Districts of Natal Automobile Club. The gentlemen chiefly interested are Messrs. F. Coppen, D. Grove, A. V. M. Suter, O. S. Challenor, A. von Levetzow, Edridge, Hollingsworth, Morgan, Edley, Obermayer, and W. E. G. Gould, who has been appointed secretary *pro tem*. The new club will be founded with 1,500 shares of £1 each, 1,000 of which are to be paid up, no member being allowed to apply for more than ten. A provisional committee has been appointed, and Mr. Calthrop, the honorary secretary of the Automobile Club, will be asked to act as honorary consulting engineer. The headquarters are at Vryheid.

DOGS AND CARS.



DOGS are disappearing items so far as many households are concerned; and motorists are being regarded by their fond owners as canine murderers. The impeachment must be acknowledged in many instances, although the cases of alleged dog destruction are greater than the actual assassinations. But what is the motorist to do? He is proceeding with due regard to the preservation of human life, when suddenly, without warning, a small quadruped rushes from the pathway and its shrieks and its carcass become mixed up with the throb of the engine and the details of machinery. That is the end of the dog; but not the conclusion of the matter, for the owner comes along with exalted views of the value of the animal, whose lifeless form is a mute appeal to the hearts of the jury.

Motorists do not destroy common dogs. The owners always declare their pets to have had exceptional points and, with a certain class of dog, their loss to be irretrievable. Money only can assuage their wounded feelings, although it cannot restore the pieces of their deceased doggies to a homogeneous whole. A friend was once motoring in Scotland when he inadvertently ran across a dog that lay still as though in the last long sleep. The owner rushed up to the driver and demanded recompense. The animal was worth anything between ten and twenty guineas; but ultimately a five pound note seemed to afford a solace to the apparently dogless owner. The car drove on, the dog recovered consciousness, and not until some days later was it clear to the motorist that the object of his solicitude was alive and well. The question arises—to whom does the dog now belong, the man who compensated its owner, or the man who took the money under the impression that the animal was dead? Verily the ways of canine owners are as peculiar as the antics of their pets are distressing.

The Local Government Board issues regulations regarding motor-cars; the Board of Agriculture is supposed to be responsible for the behaviour of dogs in our public streets. That department muzzled them some time ago; cannot it provide for their proper control at all times? Dogs are a nuisance; they are a positive danger when allowed to frolic at their own erratic will on the highway, and stern repressive regulations will have to be enacted in the near future. For motorists are not the only complainants. Cyclists have vainly declared a paper war upon them for years, and some have attempted to ride with determination over their worrying forms—with dire results to the venturesome cyclists. But with the advent of the motor-car the owners of dogs have become almost as annoying as their animals themselves. And yet there should be no feud between the respective parties, for when properly trained to the automobile dogs are as docile as when in the kennel. A thought of the Reliability Trials with Mr. S. F. Edge's sweet creature on the Marshal's car, or Mr. F. F. Wellington's "toy" spaniel mounting guard on his vehicle, will confirm this view.

It might be suggested to students of natural history that the effect of motoring on canine intelligence should be studied, even unto the third and fourth generation. It has been noticed that small birds lingering too long in the roadway often take flight from the oncoming motor-car too late to escape a blow from the bonnet. And similarly dogs have not yet become accustomed to the speed of automobiles. As these come more generally into use men and animals will have to quicken their appreciation of motor-car speed, and unless the coming generations of both realise that, the destruction of the human and canine races may be at hand. Seriously, however, the subject is within the pale of motor politics, and the position of the dog fully defined. Will the Motor Union consider the matter? Surely it is unfair to make motorists responsible for the wanton excursions into the roadway of untrained quadrupeds which are no respecters of motor-cars.

W. H. B.

THE "CHELIN" ACCUMULATOR.

A NEW accumulator, known as the "Chelin," has lately been brought under our notice by Mr. R. Melville, of Brussels. It is stated to be especially suitable, not only for ignition purposes, but also for electric traction, and where a minimum of weight, combined with a maximum of power, is concerned, together with small volume and easy upkeep. The inventors claim for it, amongst others, six distinctive improvements; absolute prevention of short-circuiting, considerable reduction in weight and volume, increase of capacity and staying power, ease in handling, and preservation of the charge for an indefinite time. The accumulator consists of two electrodes (Fig. 1 representing the active, and Fig. 2 the negative), the active terminating in four (or more, according to size required), upright leads encased in and isolated by square ebonite cells, the walls of which are perforated with numerous small holes, while the negative culminates in lead cells (corresponding in number with the upright ebonite encased leads of the active electrode) the walls of which are also perforated with small holes. By means of this arrangement of perforated isolating

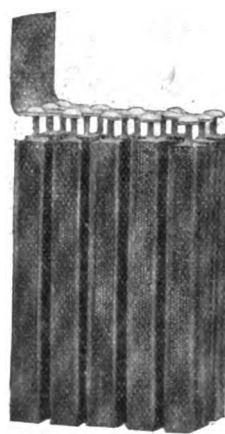


Fig. 1.

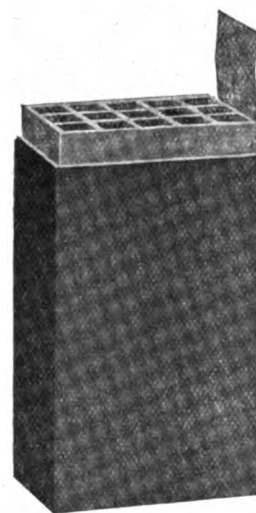


Fig. 2.

covering of the active electrode and of the perforated lead cells of the negative electrode the generating acids have free access and communication, while the perforated holes are too small to admit of the passage of any solid matter which might create a direct current between the electrodes, thus preventing the possibility of short-circuiting. Indeed, the holes are so small that only the minutest particles of solid matter could pass. Furthermore, the square perforated ebonite coverings of the positive leads are provided at each corner with a wing or shoulder of the same isolating material, and these shoulders alone come into contact with the perforated lead chambers of the negative electrode and then only at the four corners. With a view to reducing the time necessary for the formation of, and to increase, the electro-chemical reactions, the lead of the two electrodes is worked up chemically to an extreme porousness, which, together with the novel mechanical arrangements, constitutes, the inventors claim, a considerable advance over other systems of accumulators. We understand that the Chelin battery has been submitted to exhaustive tests, and that, as a result of the same, it has been adopted by one or two large builders of motor-cycles in Belgium.

THE Czar of Russia made a number of trips in a 14-h.p. Adler car last week in the neighbourhood of Frankfort-am-Main.

THERE is a law in Germany to the effect that drivers must not approach too near the hedgerows, but must leave a distance of two feet clear for pedestrians.

C

The "Robertson" Steam Wagon.

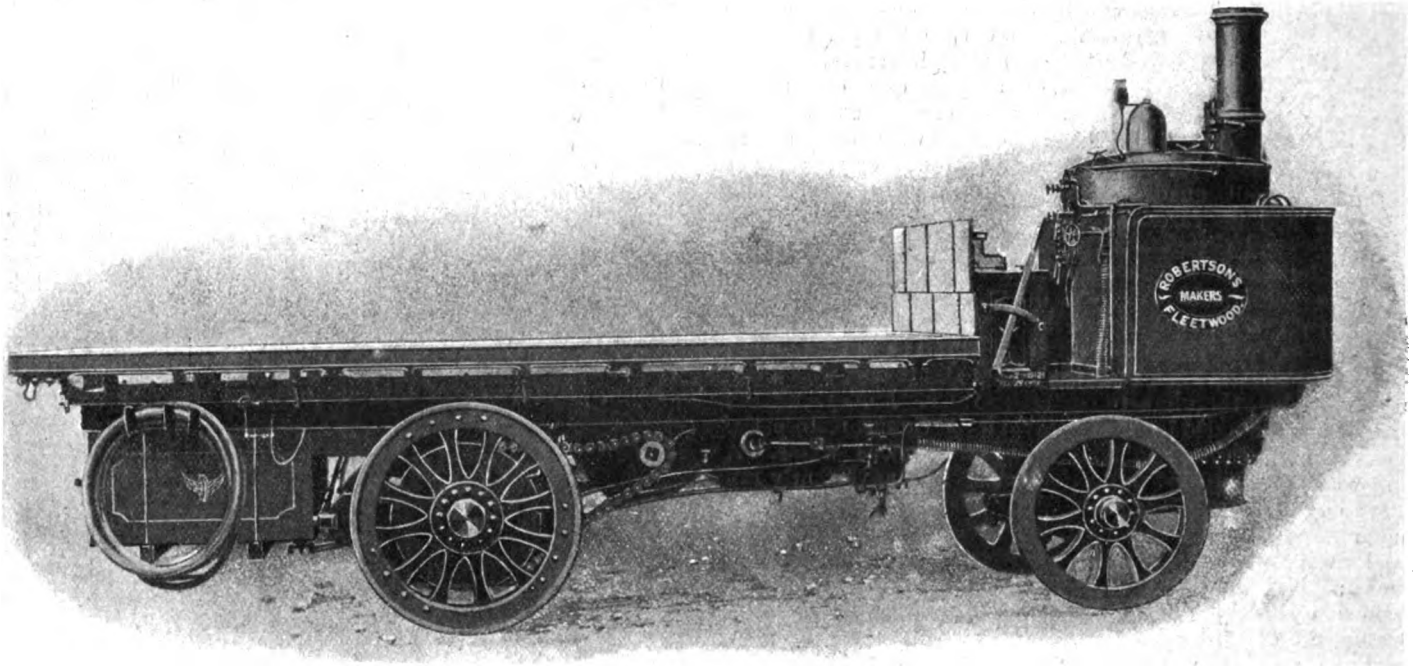


Fig. 1.—General View of Wagon.

WE are this week able to give an illustration and some brief particulars of still another heavy steam wagon of British manufacture. It is the production of Messrs. James Robertson and Son, of Fleetwood, Lanc., and is designed to carry a load of five tons. A feature of the vehicle to which the firm has given special attention is the boiler, which is of a patented multitubular fire-tube design. As will be seen, it is located in the fore part of the wagon; it is built of mild steel with seamless steel tubes, and is centrally fired; gas coke is used as fuel, the carrying capacity being sufficient for a run of about 30 miles. The boiler is constructed for a working pressure of 200lbs. per square inch and tested by hydraulic pressure to 400lbs. per square inch. The grate area is 2.6 sq. feet and the heating surface 80 sq. feet. The design of the boiler is such that all the tubes are completely under water and are fixed radially between the fire box and the outer shell. The latter being almost completely enclosed by the smoke box casing, the boiler is practically all heating surface and at one uniform temperature both inside and out, the arrangement also ensuring a supply of dry steam to the cylinders. The outer casing is easily removed and all the tubes can be readily got at for cleaning or for repairs. The firebars, with the ashpan, are slung by wire ropes or chains under the boiler, and are raised or lowered as required for lighting and cleaning purposes by suitable worm gearing. This arrangement eliminates the fire door with its objec-

tions and facilitates cleaning fires, etc. The feed water heater is of special design with aluminium body, brass tube plates and Row tubes, and is capable of heating the feed water to 190 deg. Fah., the condensed steam being filtered and returned to the tank. The main feed pump is situated alongside the engine casing and is driven by the crankshaft through gearing enclosed in the engine box and running in oil. Although it is amply sufficient for supplying the boiler, a separate auxiliary feed pump is provided, having separate steam and water connections.

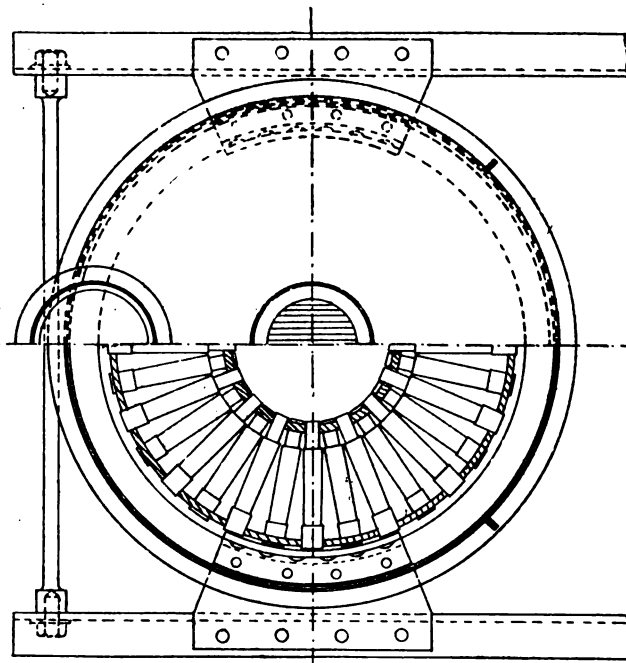


Fig. 2.—Part Cross Section of Boiler.

The engine is of the horizontal compound reversing type with cylinders 4 in. and 7 in. dia. by 5 in. stroke, and runs normally at 435 revolutions per minute, developing 25 b.h.p. It is enclosed in an oil-tight box, thus ensuring constant and thorough lubrication of all parts. The crankshaft is of forged steel, the balanced cranks and eccentric sheaves being solid with the shaft and all machined together. The engine can be run independently for boiler feeding purposes by moving the change speed lever by the driver's seat to the middle position. An auxiliary cock is also fitted admitting live steam to the low pressure cylinder, giving additional power when required for getting out of difficult positions. The gearing is of steel with machine cut teeth, the ratios provided being 10 and 17.8 to 1. The crankshaft outside the engine box is of square section, on which slides a steel double pinion, moved into mesh with the steel

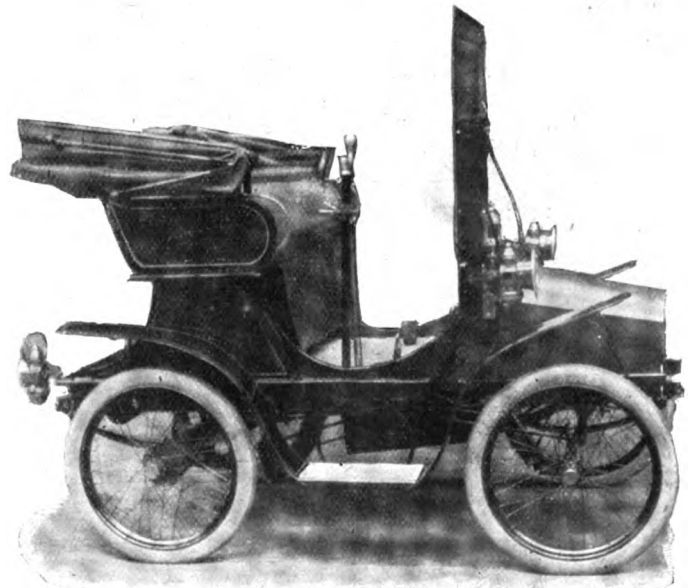
wheels on the differential gear shaft by a lever. The second motion shaft carries the differential gear, and from this shaft, with a sprocket wheel at each end, the power is transmitted to the large sprocket wheels by specially large roller chains with hardened steel bushes. The large chain wheels are carried by steel brackets attached to the felloes of the driving wheels. The differential gear can be locked by a steel clutch which is moved

an efficient brake is provided, worked from the driver's seat. A water lifter is fixed direct on to the water tank, and is fitted with thirty feet of hose with strainer attached. The water tank has a capacity of 190 gallons, and is provided with three trial cocks and hand-filling attachment.

Messrs. Robertson's first wagon was turned out in February last, and since then has been and is still working between Fleetwood and Blackpool, a distance of about eleven to twelve miles. The roads in the district are noted for being soft, very little metal having been used in making them, and in the wet weather of the past season they have been exceptionally heavy. Notwithstanding this, we are informed that the wagon has travelled fully 6,000 miles with loads varying from 4 tons to 5 tons 5 cwts., often doing two journeys each way per day. The special boiler has been found to give every satisfaction, no difficulty having been experienced in steaming in any or every sort of weather.

THE "BIJOU" LIGHT CAR.

AN interesting little two-seated car named the "Bijou" has lately been introduced by the Express Motor Co., of Liverpool, with a view of meeting the demand for an automobile at the popular price of about £100. The motive power is supplied by a 5-h.p. water-cooled single cylinder engine, having the usual accumulator and coil ignition. The cylinder cooling is on the thermo-syphon system. The brass water-tank of about 2½ gallons capacity serves both as a bonnet, tank and radiator, as it is pierced from front to back by a number of brass tubes through which the air is driven when the car is in motion; it is claimed that the loss of water does not exceed one quart in a 100 miles run. Two speeds are provided by separate expansion clutches operated by pedals, intermediate speeds being obtained by manipulation of the levers on the steering standard, which control the sparking and the air inlet to the carburettor.



From the clutch shaft the power is transmitted by chain gearing to the rear live axle. The makers state that the car will carry two passengers seated comfortably side by side at an average speed of from 16 to 20 miles an hour, and that it will easily mount ordinary hills. We may add that the engine is arranged to be started from the seat and that it is exceedingly steady in operation, little or no vibration being experienced by the passengers. The car is comparatively powerful, light though strongly built, simple, and easily managed, and will therefore appeal to the large class of would-be motorists who have been debarred from the sport of motoring not only by the initial price of a car, but by the cost of running and upkeep.

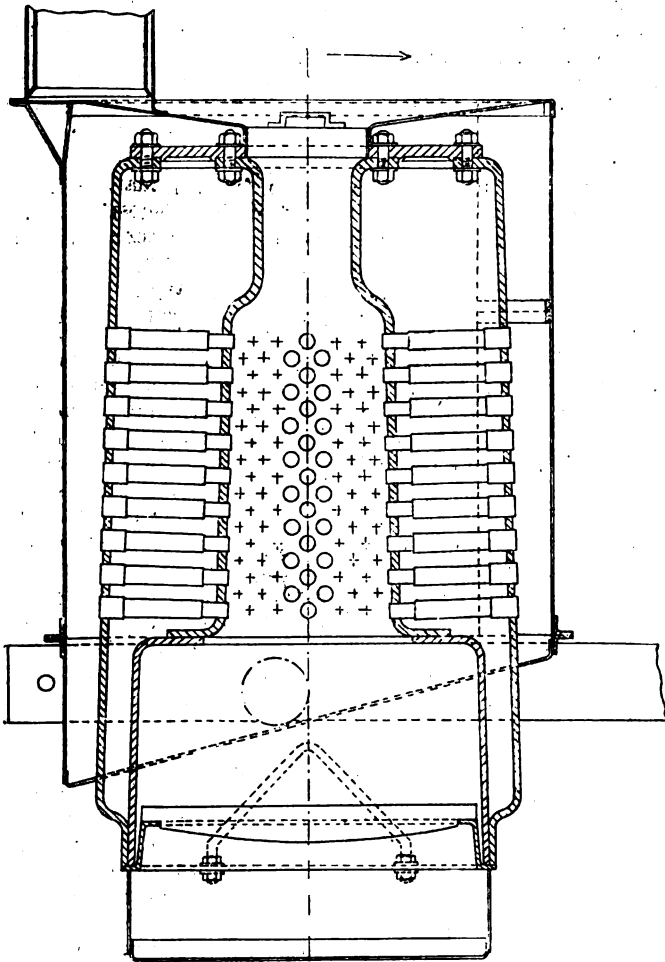


Fig. 3.—Sectional Elevation of Boiler.

into position by a small steam cylinder operated from the foot plate.

The approximate dimensions of the vehicle are:—Total length 18 ft. 9 in., over all, width 6 ft. 5 in. The wheel base is 9 ft., and the wheel gauge (centre to centre of driving tyres) 5 ft. 8 in. The platform, which is of the ordinary lorry type, has a useful area of 78½ sq. ft., the length being 13 ft. 4 in. and the width 6 ft. 5 in. The driving axle is of a special design and is constructed of rolled mild steel of girder section, with forged steel ends accurately machined and rivetted at each end, and it is held in position by strong radius rods attached to the steel pedestals of the second motion shaft. The back part of the vehicle is carried on strong laminated springs, the ends of which work in steel shoes having hard brass liners. The forward end is carried by the front axle, which is guided by steel horn plates, the weight being taken in the centre by a strong laminated spring, thus giving to the whole framing a three-point support which relieves it from any undue twisting strains. The front axle is a mild steel forging specially designed with long bearings and hardened pins. The road wheels are of the artillery type, having ash felloes, oak spokes, with steel or cast malleable naves, with hard gun metal bushes and weldless steel tyres 5½ in. wide on the front wheels (2 ft. 9 in. diam.), and 7½ in. wide on back wheels (3 ft. 3 in. diam.). The steering gear is worked on the Ackermann principle, and actuated by a vertical screw. In addition to the reversing lever

SOME USEFUL NOTES.

THE storage of a motor-car is a serious problem to many private owners, especially those living in large cities and towns where the nearest garage may be a mile or more away from their residence. In the country automobiles are usually kept in a



Fig. 1.—General View of Motor-Car Turntable.

stable, but this is not advisable, and special "automobile houses" are frequently erected. Unfortunately these houses are not always large enough to permit the necessary manœuvring of a car. A device which cannot fail to commend itself to owners of motor-cars desirous of economizing space is the Elliot turntable, illustrated herewith, and which will accommodate any vehicle weighing up to 26 cwt.; it is made in three sizes, 10, 11 and 12 feet in diameter, and its total weight is 750 pounds, exclusive of the plank platform. The manufacturers, the Gibbs-Brower Co., of New York, find that it is necessary to supply the iron work only, as the wood platform can be fitted by any carpenter. The use of the turn-table renders a large automobile house unnecessary, for the car can be driven directly on to the table and the whole turned round during cleaning or when it is desired to drive out.

ACETYLENE lamps are now so largely employed in connection with motor-cars that a few remarks on their use may not be out of place at the present time. The first and principal condition on which an acetylene lamp will consent to work is cleanliness, and unless it is suitably attended to after, rather than before, every period of use, trouble is likely to ensue. There are, however, lamps and lamps, and the principal sources of disorder in

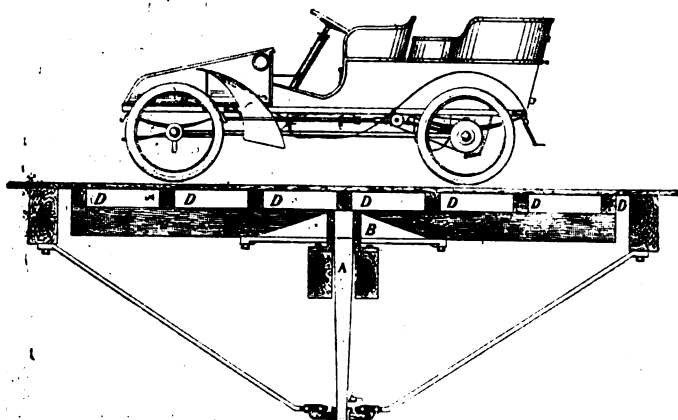


Fig. 2.—Sectional Elevation of Turntable.

them may be separately considered, most of these being far more evident in small lamps than in large ones.

IN the first place, the burner has necessarily a very small aperture, and is therefore very liable to obstruction, the materials for which are plentifully provided by many systems of generation. This may be conveniently cleaned by the fine hard brass wires sold for hypodermic syringes, while the larger bore often terminating the jet should be cleaned out by a drill that

fits it. Air apertures in the burner, if present—for some of the best jets act on the principle of a miniature pair of Bunsens—equally require to be kept free from obstruction.

CLOGGING of the burner occurs to a very variable extent with different lamps, several causes contributing to it. First, the reaction between calcium carbide and water generates heat, often sufficient to cause polymerisation of the gas, with consequent production of benzine and similar compounds. Some of these are of a tarry nature, causing an adhesive deposit in the burner. Generators like the Bleriot, in which the water rises and falls round the carbide according to the consumption of the gas, would be liable to this, were it not avoided by the use of "acetylithe," which is a calcium carbide made partially "water-proof" by treatment with some water-repelling material. Hence it is comparatively unaffected by the moist atmosphere inside the apparatus, unless directly in contact with water. The action is thus rendered more gradual, and the liability to overheat diminished. Soaking ordinary carbide in heavy paraffin oil has a similar effect, but is apt to mess up the generator.

THE action between the carbide and the water is always accompanied by the production of lime, some of which, especially in "drip" generators, is carried over with the gas in the form of a fine powder, which would rapidly choke the burner were it not filtered out. The filter for this purpose, usually a pad of cotton-wool in a tube or chamber, requires occasional renewal. This pad also serves to retain moisture, unless there is a special carbide filter for this purpose. If a lamp of the "drip" type is allowed to burn itself out, the pad will probably get wetted, and cease to work. Few lamps will bear turning down much without smoking and consequent clogging, and hence, if the generator works unevenly and there is no rubber bag to equalise the pressure, the effect is similar, and troubles occur. If a burner has once got thoroughly dirty, it seems to have a great tendency to do so again after cleaning, possibly owing to the material of the jet absorbing some of the tarry products, and it is best in such cases to substitute a new one.

THERE are not many lamps that will burn well after being turned out for some time, without recharging, as the used portion of the charge—in addition to retaining moisture often sufficient to decompose the unused part during disuse—also shields the latter from the water when turned on. It is often an advantage with such lamps to intersperse a few strips of porous material—such as blotting-paper—with the charge, but, except with the lamps using "acetylithe," it is always advisable to clean them out after every time of use. With "drip" generators the used charge is apt to become hard and difficult to remove, unless this is done while a partially used charge of ordinary carbide continues to give off gas, which acts by no means beneficially on the brass parts of the apparatus. For this reason, and also on account of gritty lime particles, the taps of lamps are very apt to become leaky, unless well greased. It is always advantageous that the passage from generator to burner should be as long and tortuous as possible, thus assisting the gas to deposit impurities; and with some of the smaller lamps that have a rubber connection between the two, improvement will follow the adoption of a longer piece of tube.

A POINT that should not be forgotten is that carbide expands very considerably during decomposition, and generators must therefore not be over-filled. Where there is any likelihood of recharging being necessary during a drive, it should be attended to before the old charge has got thoroughly wet, and the flame begins to fall off. At this stage the used charge can be shaken out in a fairly dry state; but if it is soaked, the insertion of the new one into the damp generator will be a wasteful and aromatic process.

WHEN frost is feared, brine can be substituted for water in the lamp, but it should be made, if possible, from pure sodium chloride, free from magnesium chloride, the latter acting on metals, and being often present in common salt.

AUTOMOBILISM IN GUERNSEY.

RECENTLY, in seeking fresh sources of taxation, the States of Deliberation, the insular legislative assembly, decided to impose an annual tax of £1 on motor-cars and motor-cycles, and 2s. 6d. on ordinary bicycles.

Guernsey, the second largest of the Channel Islands, is, in relation to its size and population, the most commercially flourishing of the group, and there are a considerable number of motor-cars and especially of motor-bicycles in the island. Owing to its hilly nature motor-bicycles are superior to the bicycles propelled by foot power; the island, too, is intensely cultivated, and the rural districts contain many groups of glass houses for growing tomatoes, grapes, and other market produce for exportation to England, and this and other insular industries explain the increasing use of motor-cars and motor-cycles in getting about the island.

by an efficient driver, experimented with the car in the town and country.

One difficulty which local motorists have to face is the existence of a local law, made before motor-cars were introduced, restricting the quantities of mineral and vegetable oils that may be kept in stock by one individual. In consequence of this restriction at least one local enthusiast, who imports large supplies of petrol, has to keep his stock in reduced quantities in different parts of the island. One advantage of this system is, however, that he can charge his petrol tank at any of his stations without returning home. This law is now undergoing revision, largely at the initiative of motorists, so that even the restriction that now exists to the complete liberty of the motorist in Guernsey is likely soon to be removed.

Besides being used for commercial purposes, several motor-cars are used by private residents, whilst Dr. H. P. D'Elsey Benson was the first medical man to adopt this new form of



(La France Automobile.)

M. Gaste, on the 20-h.p. Automotrice Touring Car, on which he won the 2540-£1,000 class in the Deauville Speed Trials.

Although the insular authorities have decided to tax motor-cars and motor-cycles, this cannot be regarded as a conservative move in the direction of placing restrictions upon the use of these up-to-date methods of locomotion, for the legislation locally adopted some time ago for the regulation of this new form of traffic shows a welcome toleration of the innovation and a true appreciation of the commercial advantages of motoring in the island.

The local ordinance, framed in 1902, restricts speed to four miles an hour in certain narrow and steep streets of St. Peter-Port, but with respect to the other thoroughfares of the island the only rule laid down is that motor-cars shall not be driven at excessive speed in a manner that might imperil others on the road or be to the common danger, under a penalty of a £10 fine. Lamps are also required at night and motor-cars may not be left in the public roads unattended. Finally, each motor-car must be numbered, a registry being kept by the constables of each parish for purposes of identification.

When this ordinance was being framed the local magistrates who formed the Committee hired a motor-car, and, accompanied

locomotion, and he and Mr. A. L. Davis, the manager of the Guernsey (Electric) Railway Company, may be described as the pioneers of motoring in Guernsey. Dr. Benson has travelled upwards of 21,000 miles on his Singer motor-bicycle. Their examples were quickly followed by others, and automobilism is now progressing rapidly.

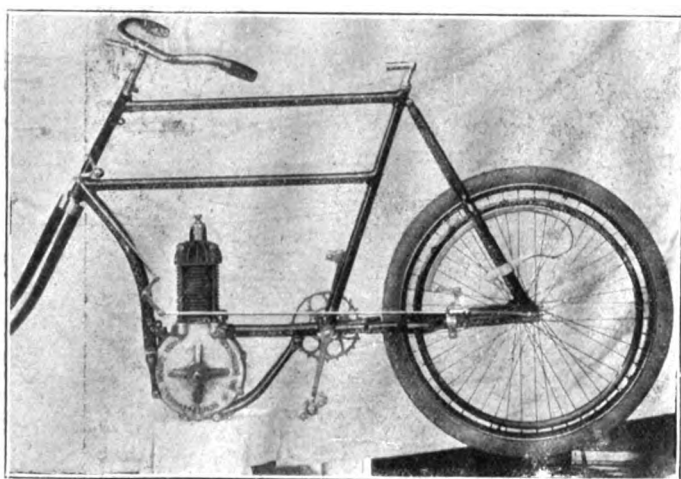
IN the course of a case at the City of London Court last week, Judge Lumley Smith said that apparently there is no law as to what two vehicles ought to do when proceeding along cross roads. In his opinion the man who reached the middle spot first was entitled to go on, and the other must wait for him.

WE are reminded of the progress of the automobile movement in India by the arrival of a well-got-up catalogue of motor-cars and automobile accessories from Messrs. Turner, Hoare and Company, of Bombay. The list comprises nearly forty pages, and includes petrol, steam, and electrical cars, of both English, Continental, and American construction.

MOTOR-CYCLING NEWS.

THE final round of the Motor Cycling Club's contest for the Edge trophy was to have been run off over the 200-mile course in the Hatfield district on Saturday last, but had to be again postponed as there was a lack of checkers, while one of the three competitors overslept! The officials present at Hatfield decided to postpone the actual test for the trophy until to-day (Saturday), but Jones (De Dion tricycle) and Milligan (2½-h.p. Bradbury motor-bicycle) elected to carry out the run as a reliability test simply, the distance to be 100 miles, concluding at mid-day. This they did successfully, making a non-stop run.

THE Lion Cycle Company, of Lowestoft, have recently introduced a new brake for motor-cycles, as shown in the accompanying illustration. It is termed an expansion brake and is designed for use on belt-driven motor-cycles furnished with a driving rim secured to the back wheel of the machine. The system consists essentially in arranging within the driving rim a large shoe of steel or other suitable material, the shoe being made the same shape as the driving rim, lined with leather, and made flexible either by a spring or a joint. The brake is secured to the two back stays of the machine, and by means of a lever controlled from the handle-bar it can be expanded so as to bring the outer surface into contact with the inner periphery of the driving rim. In this manner an extremely large brake surface is secured. The



makers inform us that they have fully tested the device and proved that it will securely hold a motor-cycle and fore-carriage, with two heavy riders, on the steepest of hills.

MR. J. VAN ZWIETEN, one of our South African subscribers and an enthusiastic motor-cyclist, writes us as follows:—"As a constant reader of your useful journal I would like to interchange experiences with British cycle sportsmen, in the line of motor-cycling, especially as regards the side-car attachment. I will give mine in a few lines, and I hope that I may get some useful advice in the matter. I purchased a new and I dare say a very good motor-cycle, and, although I had no previous experience whatever of motor-cycling, I judged that, with my machine converted into a tricycle by the side-attached little carriage, nothing serious could occur, and consequently I obtained one. I went off like a shot, had my motor well in hand, and by slowing speed turned round sharp corners to the right, and to a nicety, the attachment being to my left. I mention this as, when I wished to turn to the left, my machine, with its new side vehicle, objected; instead of answering to the steering, it rushed against a tree to the right and turned over, sending me spinning on to the pavement. I came off all right and so did my obstinate bicycle with side carriage. Not to be beaten, I made another attempt to turn to the left, but with worse results (perhaps because I gave it a little more speed)—bicycle attachment and self made a combined somersault such as would be worth seeing in a circus! I did not come off so badly, but my

cycle broke down so much that I had to wire for a man from the makers with new parts and tools. I would like to know if this is a peculiarity of these side attachments—i.e., its objection to turn to the left, or say inward? Can it be that the horizontals by which the vehicle is attached to the machine are inclined to bend, springlike, inward and out at right angles with the machine? I must say that I like the attachment very much, but it ought to obey orders. I had no passenger with me at the time—thus no weight in the basket seat—for the simple reason that I did not like to risk anyone's head besides my own. Would a solid tyre to the wheel of the attachment not improve its capability of turning round left hand corners?"

THE cause of Mr. Van Zwieten's trouble would appear to be due to his riding the motor-bicycle with side-carriage without a passenger in the basket. When the side-carriage is fitted to a motor-bicycle it is naturally intended to be used by two riders; if used by one rider, ballast should be carried in the basket to prevent the same tilting. After a little practice it will be found quite easy to sit and steer from the basket.

TOWARDS the end of the month the Motor Cycling Club will hold a dinner at the Royal Hotel, Slough, the intention being that the guests will travel down by road after meeting at the Marble Arch.

THE police in the Aldershot district have lately been unusually vigilant concerning the speed of motor-cycles and also against those who ride their machines on the footpath.

A 25-KILOMETRE motor-cycle race for the championship of Austria was held by the Automobile Club of Austria on the Bubur track at Prague last week. The first three places were secured by the Laurin and Klement machines, the winner being Herr Wondrich, who covered the distance in 22 m. 22 3-5 sec.

THE Sheffield and District Automobile Club's motor-cycle non-stop run was successfully carried out on Saturday. Eleven competitors started from Tinsley to follow a course by Barnby Moor, Bawtry, and Tickhill to Worksop, a distance of about forty miles, and out of the number the following eight completed the course without a stop and qualified for the club certificates:—Messrs. J. Lee, 2½-h.p. Broomhall; A. T. Dewhurst, 2½-h.p. Lloyd; W. James, 2-h.p. Fairfield; J. T. Thompson, 3-h.p. Quadrant; P. H. Dodds, 2-h.p. Minerva, and W. B. Davy, 2½-h.p. Minerva (motor-bicycles); and J. Thompson, 2½-h.p. De Dion, W. S. Gilder, 2½-h.p. Royal Enfield (motor-tricycles). The competitors were divided into three sections, with a marshal car to observe each section. Messrs. E. F. Coupe, E. H. Pickford, F. G. Smith, P. R. Thompson, B. Hind, J. E. Evans, James Barber, and J. R. Wade officiated as marshals.

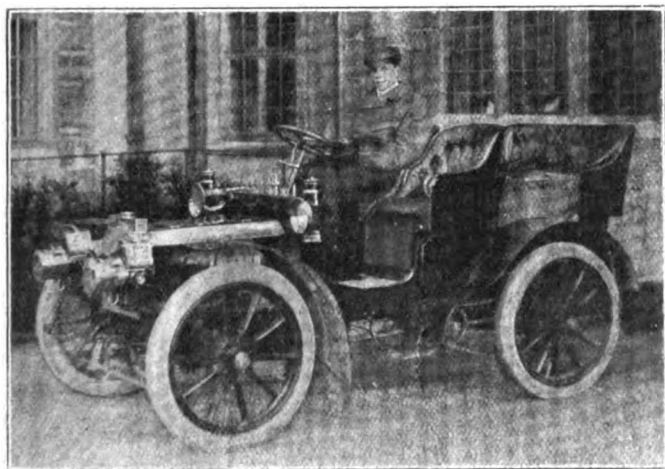
WITH reference to the proposed regulations of the Local Government Board given in last week's *Journal*, the Motor Cycle Trades Association suggest that (1) the expression "motor cycle" shall include any vehicle running on three or less wheels and the weight of which shall not exceed 2½ cwt. (2) That the best place for the plate to be fixed is at the rear of a cycle, the plates not to exceed three inches in height nor five inches in width, the corners to be rounded to prevent injury to the rider. (3) That to illuminate the identification plate of a cycle is impracticable and dangerous. (4) That as the Motor Car Act does not instruct the Local Government Board to charge for identification plates, it is respectfully suggested that the registration fee include the plate without further charge. (5) That it should be made absolutely clear that the holder of a motor-car licence is at liberty to also drive a motor-cycle.

DURING the past financial year the Caledonian Motor Car and Cycle Co., Ltd., of Aberdeen, sold fifty-three motor carriages, and the results of the year's working were a total turnover of £21,557 and a profit of £369, permitting a dividend of 5 per cent. on the capital of the company after allowing for depreciation, etc.

HERE AND THERE.

GUERNSEY has imposed an annual tax of £1 on motor-cars and 2s. 6d. on bicycles, reference to which is made on another page.

THE London and District Westrumite Company, Ltd., has been registered with a capital of £50,000.



Mr. T. Lloyd, of Bowden, on his 8-h.p. Peugeot.

THE New Zealand Customs authorities have decided that steam motor-wagons imported into the colony must pay a duty of 20 per cent. *ad valorem*.

THE Cape Town Fire Brigade have supplemented the motor steam fire engine which they possess already by a petrol motor hose wagon built by the same firm—Messrs. Merryweather and Sons. The new machine has a steel frame, mounted on horizontal springs and wrought iron axles. The engine is a double-cylinder, with battery and coil ignition, located in the fore part of the frame under a bonnet, in front of which is placed the radiator for water cooling. Pump circulation is provided, and the engine drives through a clutch to a gear box which gives three forward speeds and a reverse, the rear wheels being driven from the countershaft, which carries the differential gear, by chains. The road wheels are of the artillery pattern, with steel rims and solid rubber tyres. The machine has been designed as a chief officer's buggy and hose carrier. It provides seats for four men and standing room for two more on the footboard at the rear. Behind the driver's seat is a large rotating reel carrying over 1,000 feet of hose for use with street hydrants or steam fire engines. Standpipes and branch-pipes are also carried, as well as two hand chemical fire engines for putting out small fires, and a pair of light scaling ladders. The whole apparatus has been built to serve as a "first aid" fire appliance, able to turn out immediately on an alarm, and to travel at speeds up twenty-five miles per hour.

MESSRS. J. C. FULLER AND SONS, of Bow, E., have just issued a new edition of their booklet dealing with the Fuller batteries and accumulators. Special attention is devoted to the Fuller mercury-bichromate battery intended for use in connection with the charging and ignition accumulators, and complete instructions are given for setting up and operating the same. Volt-meters, induction coils, and a useful test lamp are also included in the electrical accessories dealt with in the booklet.

MR. ARTHUR J. HERSCHMANN recently made a proposal to the Automobile Club of America for the holding of a winter contest for commercial vehicles, urging as his reasons that vehicles of this kind, to be really successful, must be able to cope with all kinds of weather conditions, and must carry a

reserve of power sufficient to enable them to sustain a contest with the elements for an almost indefinite period of time.

THE Wolseley Co. have just completed a 10-h.p. tonneau for the Earl of Sandwich.

THE usual quarterly 100 miles non stop trial of the A.C.G.B.I. will be held on Friday, the 13th inst.

MR. S. F. EDGE suggests entries for the Harmsworth Cup race for motor-boats should be allowed up to February 1st. Challenges should be sent to the A.C.G.B.I.

A SERVICE of electrical omnibuses taking current from an overhead conductor, similarly to electric tramcars, is about to be started at Monheim-am-Rhine by the municipal authorities of the town.

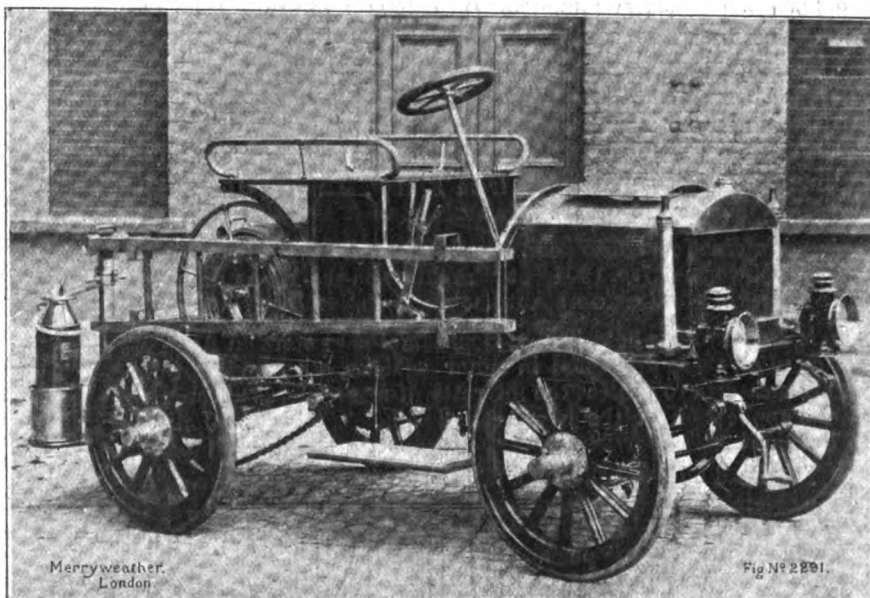
THE Highway Commission of Massachusetts has granted 3,806 licences to individuals to run automobiles or motor-cycles in the State, and has issued 3,201 licences for motor-vehicles.

LADY WINNINGTON, whose accident while motoring was chronicled recently, is the mother-in-law of Mr. Andrew Fletcher of Saltoun, the winner of the Mayor's cup at the Southport automobile race meeting.

MESSRS. WILLIAM STEPHENS AND COMPANY, of Wood Street, E.C., who are making a speciality of motor goggles, and also of masks, veils, and hoods for the use of lady motorists, have sent us copies of circulars in which a large variety of these useful articles is shown. It may be of interest to add that Messrs. Stephens undertake the repair and reglazing of motor goggles.

WITH reference to the report that Messrs. Schneider and Company, the great French gun-building firm, were taking up the construction of motor-cars, it appears that, while the report is correct, they are not building them on their own account, but for a new company which has been formed, to be known as La Société des Automobiles Eugene Brillié. The cars will be built at the Havre works of the Schneider Company.

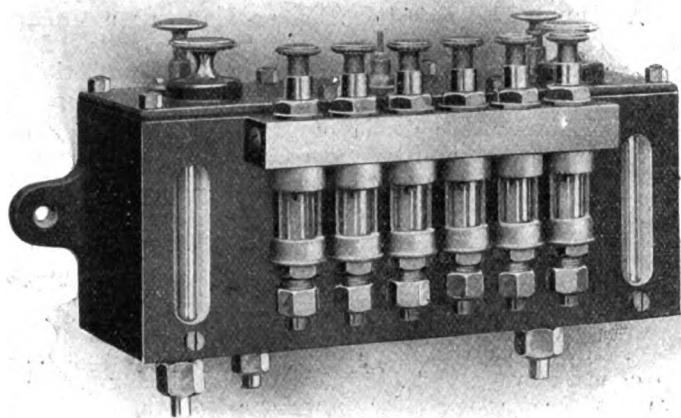
THE Mayor of Ripon (Councillor Moss), Aldermen Spence and Lee, Councillor Hall, and the Town Clerk (Mr. Kirkley)



The Motor Hose Wagon for Cape Town.

have visited Beverley for the purpose of inspecting the new motor-car service introduced in Holderness by the North-Eastern Railway Company. Accompanied by Mr. T. Tennison, chief passenger agent, Mr. Newton, station master, and Mr. Kirby, deputy mechanical engineer, they rode to Leven and back. The visitors' impressions of the buses, which are illustrated on page 683, were highly satisfactory.

THE Coventry Motor Fittings Company, which is devoting much attention to the manufacture of motor fittings, such as lubricators, tanks, radiators, has lately introduced a neat and compact automatic pressure lubricator, of which we give an illustration herewith. The apparatus, which is actuated by means of a branch pipe from the exhaust, is made with either aluminium or brass reservoir. It is constructed in several sizes,



and with any desired number of oil outlets from 2 to 12, while, where required, a small paraffin compartment with pump for cylinder cleansing purposes can also be fitted. As will be seen, the lubricators have a neat and compact appearance, and care has been taken in their manufacture to prevent any annoying leakage of oil.

THE charge against a motor-car driver for driving backwards was heard at Beaconsfield on Saturday, when Mr. Percy Brennan was fined £10.

FOR allowing his motor-car to remain for more than an hour outside the historic Guildhall at Exeter, Mr. A. Hummell, of Bristol, has been fined 20s. and costs.

In the side slip competition organised by the Automobile Club, the first prize will be £200 and a gold medal, a silver medal being awarded as second prize.

A CYCLE and motor show is to be held in the Engineers' Drill Hall, Claypit Lane, Leeds, from Friday, January 15th, to Saturday, January 23rd, 1904, inclusive.

AN international automobile exhibition will take place from March 19th to the 27th, 1904, at Frankfort-on-the-Main, under the auspices of the Frankfort Automobile Club.

A MEETING has been held at Southampton to start an Association of all those interested in motor vehicles, with a view to taking measures to protect the interests of motorists, as affected by the application of the new Act. The hon. sec. is Dr. John E. Ransford.

THE Reading Baseball Club, of Reading, Pens., is having built a special motor car to accommodate fourteen persons, and has placed an order for it to be fitted up on the same plan as a Pullman sleeper, for the purpose of transporting the club members from place to place.

THE County Chemical Company, Limited, have lately introduced a new puncture-proof device for motor tyres. The arrangement, which is known as the "G.B.," consists of an ingenious application of electrically-cured mule hide to the inner lining of the outer cover. The hide possesses great resistive qualities, and as two sections of it have to be punctured before the inner tube is reached, punctures are reduced to a minimum. The device adds about eight ounces to the weight of each tyre, and is easily applied, no vulcanising being necessary.

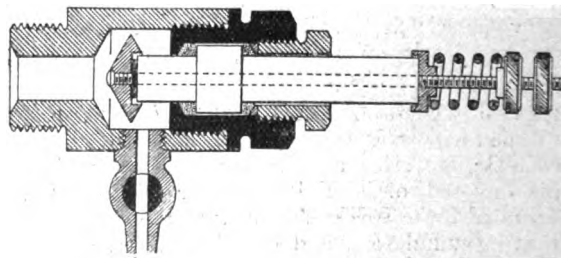
WHEN nearing Withington, on Saturday, Mr. Owen Griffiths and Mr. Robert Macdonald, in avoiding a lorry overturned their motor-car, and the two gentlemen and the driver were thrown into the roadway, sustaining serious injuries.

THE Griffon Motors, Limited, has been registered with a capital of £1,000 to adopt an agreement with the Star Motor Agency, Limited, for the purposes of acquiring the benefit of an agreement between Mr. P. Surleau and the said Star Motor Agency, Limited, whereby the last-named parties were appointed sole agents for the United Kingdom for the sale of Griffon motor bicycles and parts, and to carry on the business of dealers and agents, etc.

Now that the duller lights of winter drive the photographer from P.O.P. to gaslight papers, the little volume on "Bromide Printing" with which Messrs. Hodder and Stoughton's series of photographic handbooks opens is particularly *apropos*. The Rev. F. C. Lambert and other authorities write easily and explicitly of the various processes by which good results can be obtained, and the editor is to be congratulated on the appearance of the initial volume of what should be a very useful series.

DR. H. NELSON JACKSON, who recently made a trip across the American continent on a Winton car, favours an annual endurance run from ocean to ocean. He says in regard to the idea:—"Such a race would be the greatest thing that has yet happened in automobilism. Its progress would be watched by the whole world during the thirty days or less I estimate the run across the country would take. The prize should be raised by subscription from makers, clubs and individuals. It should be a cash prize of not less than £6,000. I should favour the race being from New York to San Francisco, for the reason that the cars would have a clear run to Omaha. Each car should carry two people and each competitor should be allowed to choose his own route."

MR. A. W. KING, of Maywood-Hackensack, N.J., U.S.A., has lately introduced a new sparking plug, of which a sectional illustration is given herewith. It is known as the "Non-Stop," and has been designed to eliminate the necessity for removal of the plug while on the road, for ridding it of any foreign matter which might form a bridge from one terminal to the other, rendering the plug inefficient. The insulated terminal of the plug is surrounded by a protecting chamber which at the same time constitutes the opposed or earthed terminal. The sharp edges of the button-shaped inner terminal are located at an equal distance all round from the interior wall of the surrounding chamber, leaving but a 3-64 inch space, this having been found the most suitable for the production of a good spark. Should bridging or short-circuiting ever occur in the plug owing to it becoming sooted the vent cock attached to the chamber is opened, when the contents of the cylinder are forced through the spark-gap to the exclusion of any other passage, tearing loose and ejecting through the opening of the vent cock any obstacle which may have lodged between the terminals. The vent-cock is intended to also be employed as a compression relief cock, to insure



clean terminals from the start and without recourse to any other means. A pressure of from sixty to ninety pounds per sq. in. is stated to be a most efficient means for clearing away obstructions from between terminals. When it is desired to remove the inner terminal, the chamber with the vent cock may remain on the motor and the inner terminal alone detached.

THE WINTER USE OF MOTOR-CARS.

THE commencement of settled cold weather is the signal for "turning out to grass" a very large proportion of all self-propelled vehicles. Wheels are jacked up, tyres deflated, tanks drawn off and a canvas cover thrown over the retired vehicle, not to be removed in many cases until the spring overhauling. The noble army of winter users deserve credit, for they are helping to create a public belief in the all-the-year-round usefulness of the motor-car. If stored in heated stables, one may say with confidence that almost all automobiles are capable of giving good service all winter.

The technical difficulties of operating a motor vehicle during cold weather are, remarks Mr. A. L. Clough in the "Horseless Age," four in number:—1. Difficulty of securing correct "mixture" at low temperature. 2. Irregularities of lubrication due to increased viscosity of oils at low temperature. 3. Danger of freezing of pipes, jackets, tanks, etc.; and 4. the alleged increased tyre troubles due to changes in resilient qualities of rubber when cold, and other causes.

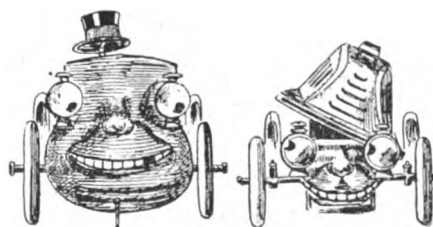
The capacity of air for petrol vapour at low temperature is small. The lower the temperature of the air the less petrol vapour it will hold, and a point is finally reached when it will absorb so little as to render the mixture imperfectly combustible. When it is attempted to operate a petrol engine at such a temperature it is found impossible to secure proper explosions. However, at almost all temperatures commonly met with in this climate, petrol is sufficiently volatile to give practical results, especially if the air be heated artificially before entering the carburettor. Petrol cars for winter use should have some provision for heating the air used in forming the explosive mixture. This is accomplished ordinarily by making use of the heat of the exhaust. The air intake pipe may be jacketed by a portion of the hot gases from the exhaust or the vaporizing chamber may be jacketed in the same way. A carburettor so provided will furnish a proper mixture to its engine after it is fairly in operation, but it is sometimes difficult to secure the first explosion of a motor which is cold and taking air at a low temperature. It is obvious that the heat necessary to vaporize the petrol for the first explosion must all come from the metal of the carburettor or from the surrounding air, and when both are in a cooled condition there is little tendency for a proper evaporation of the liquid, which is chilled by contact with the cooled metal. After the carburettor does give a good mixture it may, under some conditions of low temperature, be condensed in the cold cylinder, and if the air happens to be warmer than the engine, moisture may be condensed upon the sparking plugs and even affect the sparking. An engine which cannot be started on account of the cold can sometimes be made to operate by filling the water jacket with hot water and by pouring hot water over the carburettor, air inlet pipe and the mixture pipe, or by laying cloths wrung out in hot water upon these parts. Such treatment is generally successful. After the car has been in operation for some time it may be left standing out of doors for a considerable period with the engine shut down and still no difficulty will be found in starting it up. If the water and the metal have been quite thoroughly heated they part with their heat slowly. One can say, in general, that there is no difficulty in keeping a petrol engine which is suitably supplied with warmed air in continuous operation at any winter temperature, after it is once started, and that there is no difficulty in starting an engine, no matter how cold it may be, if the procedure recommended be followed.

There need be no very serious trouble in the lubrication of an automobile kept in a heated stable, because the vehicle starts out with its lubrication normal, and under all ordinary conditions the heat developed by the engine prevents the chilling and stiffening of the lubricants. With the mechanical lubricators now so much used the thickening of the oil due to cold is of comparatively little moment, for about the same amount of lubricant is fed in a given time, whether it is thick or thin. With the sight-feed cups, however, the amount of oil flowing depends entirely upon its thickness. The automobilist who has no

heated stable will have a sorry time with his cylinder lubrication. The oil in the various bearings will be so thick that the engine will work with difficulty, the oil in the engine base will be something like vaseline, and the cylinder oil cups if adjusted to feed properly in their cold condition will flood the cylinder when the engine becomes warmed up. On the whole, it may be said that a motor-car equipped with a system of forced lubrication, if kept in a heated stable (which is the *sine qua non* of the winter use of automobiles) and oils of the proper character are made use of, there should be no serious troubles with lubrication.

The season has arrived when the users of petrol cars should be substituting for the cooling water in their tanks some anti-freezing solution, but there will probably be unfortunate and belated individuals who will neglect this until on some sharp night their radiators freeze and crack, or—what is infinitely worse—the water in the engine jacket freezes and splits the cylinder casting, necessitating an expensive renewal of the damaged part. Fortunately we have means to make Jack Frost a harmless foe as far as the cooling systems of petrol motor-cars are concerned. Calcium chloride is a cheap chemical product, but it is variable in respect to the amount of water of crystallization which it contains and also somewhat variable as to its neutrality, and it is thus a little hard to tell what one is getting when calcium chloride is called for at the chemist's. It is plain, from accounts which have been published, that some so-called chemists have deceived their customers into taking chloride of lime instead of chloride of calcium—two compounds which are hardly more alike than chalk and cheese. Calcium chloride is generally marketed in the form of the fused salt and is of a dirty white colour, with a fracture somewhat resembling marble. It is generally very moist and covered with its own saturated solution. If the calcium chloride be slightly alkaline, as it should be, there will be no danger of the corrosion of the metals with which it comes in contact. The quantity of the salt that should be used per gallon of cooling water depends upon the amount of water of crystallization that the particular grade of chloride contains. The probable amount required will be from three to five pounds per gallon, but one may have to do some experimenting unless the quality of the salt be exactly known. While there may be no fear of corrosion when the salt is properly used, it is possible that some trouble may be experienced in the lubrication of the circulating pump when calcium chloride is used. If the lubricant employed be animal oil or grease and the cooling solution can come in contact with it, the result will be a formation of a lime soap which will destroy the lubrication. If graphite or other purely mineral substance be used for the lubricant, there should be no trouble from this source. It would be for the benefit of all concerned if users of the calcium chloride cooling solution would send us the results of their experience.

There is a generally credited belief that rubber is more subject to deterioration when used in cold weather than in warm. Probably this is true, but one would like to know upon what experimental data the belief rests. One thing is certain, that the frozen ground upon which tyres are required to run during the winter season brings about excessive wear. A run over country roads with their frozen ruts is equivalent in point of tyre wear to many times the same distance during the summer season.



"Is my Bonnet on straight?"

CORRESPONDENCE.

ACCUMULATOR QUERIES.

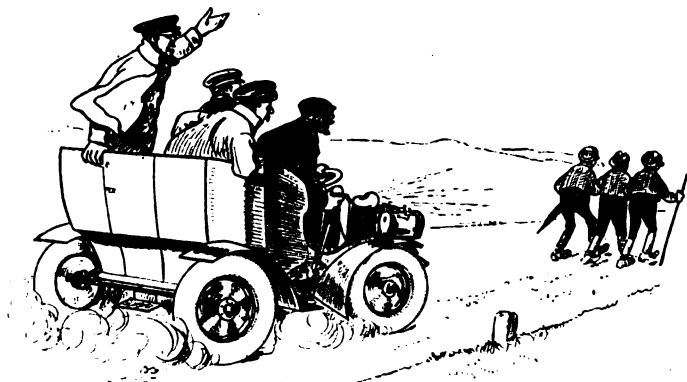
TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Mr. Thos. Hallowell's letter in yours of the 24th ult., he is perfectly correct in most of his statements, but the following experience may be useful. When an accumulator is exceedingly well charged, and has sufficient current in it to give its fullest capacity of discharge, the plates are then in such good condition that the voltage after charging will be at its highest, 4.5 to 4.6 volts.

Accumulators should certainly be charged once in six weeks, if possible, but a good accumulator will do useful work for three months, though you must not expect to get the full capacity out of it; it is quite correct to only add distilled water to make up loss in electrolyte, as the effect of charging splits up the water into hydrogen and oxygen, and it is only water, which consists of these gases, that is required.

You cannot get much more into an accumulator after it starts to boil, unless the boiling is due to an excessive charging rate, or unless you greatly reduce the charging rate, and continue to charge at a very low rate of current.—Yours truly,

AN EXPERT.



Chapter 1.



Chapter 3.

cardan transmission, but with a Richard carburettor and accelerator. I want this car to travel at from 15 to 24 miles up inclines of 1 in 10 to 1 in 8.

Can this be done? And if so, would you kindly tell me the name of a likely firm who would undertake the job.—Yours faithfully,

L. M. LILLY.

Lisbon.

[We have had no experience with a Richard carburettor and accelerator in conjunction with a De Dion two-cylinder engine, and we should not feel inclined to experiment in this direction.]

THE LIGHTING OF CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—One among the many points requiring elucidation, and which to my mind will be a source of danger created by the new Act, is that lamps will require to be fixed so that the plates on the car shall be illuminated in a way sufficient to secure the letters and figures being legible in front and behind the automobile. One knows too well the importance of proper lights to rule the traffic of the roads by night, but



Chapter 2.



Chapter 4.

[Dus Schnauffer], Munich.

A GUY FAWKES STORY IN FOUR CHAPTERS.

THE MOTOR CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In view of the new Act coming into force, I would suggest that those who wish it should be able to submit their cars for examination by the authorities, and, on their being satisfied that the gearing will not allow the limit being exceeded in driving, those cars should have a distinguishing mark placed on them in a conspicuous position, so clearing them of police interference. It is also possible that, in these cases, the dimensions of the number plates might be reduced from the sandwich-board size at present suggested.

Having been trapped twice in one week, I am anxious to be free from worry, and twenty miles an hour is quite fast enough for—Yours truly,

A TOURIST.

CARBURETTORS FOR DE DION CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Being a regular reader of your paper I take the advantage of consulting you on the following:—I should like to have a two-seated car with a De Dion two-cylinder engine, De Dion's system of gearing and

the introduction of other lights will surely tend to make confusion worse confounded.

May I say I agree with your correspondent "J. H. A. Macdonald" in his suggestion that we should name our cars, as some small compensation to the needless, ugly, disfiguring identification plates to be attached.—Yours truly,

CHARLES J. E. SPARKE.

ACETYLENE MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have pleasure in sending you some particulars of the experiments that I have recently been making in connection with acetylene motors. I have, at last, been entirely successful in using acetylene gas as fuel in explosive engines. I started with motor-bicycles and the results have been surprising. In the first place no vibration is felt, and secondly, it not being necessary to find the right mixture, the engine starts off instantly, and there are no pannes to fear on account of carburation troubles. The carburettor is replaced by a doseur-mélangeur, or quantitative measurer of air and gas, which forms

the principal feature of the system. The gas generator takes the place of the petrol tank, and also contains the accumulator and the oil pump. There is, subsequently, no change in the form of the machine. One kilogramme of carbide is sufficient for a run of 100 kilometres, and even more. The generator is charged with carbide cartridges, which can easily be replaced when they become exhausted; the manipulation of the machine is, therefore, very clean. For motor-cars, the form of the gas generator will be on practically similar lines, but the working is simplified, the generator being of larger dimensions and more easy to work than those of motor-bicycles.—Yours truly,

A. BOUCHET.

St. Cheron, France.

WET AND DRY BATTERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will any of your readers be good enough to give me their opinion of the relative merits of wet and dry batteries for ignition purposes on a 2½-h.p. De Dion engine? I am using the latter, but they appear to run down quickly.—Yours truly,

L. H. H.

[We would recommend our correspondent to try accumulators, instead of dry batteries. The great advantage of secondary cells over dry cells is the constant, or practically constant, voltage. Of course an accumulator on no account should be "shorted" with a wire across the terminals to see if they are charged, as permanent injury may in this way be done to the plates. Accumulators will run practically as long as any dry cell, and, instead of being thrown away, can be recharged at a small cost.]

IGNITION TESTING.—Answering several correspondents, the ignition testing device and switch illustrated in our last issue can be obtained from Messrs. J. Lacoste and Co., 176a, Shaftesbury Avenue, W.C.

ALUMINIUM WIND SHIELDS FOR MOTOR-CARS.—We have an enquiry for the names of makers of aluminium wind shields for motor-cars. Will manufacturers of such articles communicate with us?

A CORRESPONDENT asks if there is any means of repairing the water jacket of a petrol motor cylinder which has become cracked. He has been recommended a method of rusting together the cracked portions by means of sal ammoniac and iron filings. While this has been found satisfactory to a certain extent, there is still a slight leak.

DIMENSIONS OF INSPECTION PIT.—Replying to W. Corbett, who enquires as to the dimensions of an inspection pit, we would recommend the following:—Length, 6 ft.; width, 2 ft.; and depth about 4 ft. It should be furnished with a cover of stout boards fitting into a ledge, so that it can be closed flush with the floor when not required. If the pit is out of doors, or water is otherwise likely to penetrate, a drain should be provided.

THE MOTOR-CAR ACT.

YORKSHIRE.—At a meeting of the Settle Rural District Council, suggestions have been considered from the representatives of the various townships for the restriction of the speed of motor-cars. The Council eventually decided that on certain roads the speed should be limited to ten miles an hour, and in passing through villages to eight miles per hour. It was recommended that danger-boards be erected at a number of places.

The Selby Rural Council decided on Monday not to seek to prohibit motor-car traffic on any of their roads, but to have the speed of cars limited on going through villages and past schools.

WILTS.—The Westbury Rural Council has decided to put up sign-boards warning motorists at "Bratton Bash," near Bratton, on the Devizes road.

HEREFORDSHIRE.—Mr. H. G. Morgan points out that there are many roads in Herefordshire the macadamised portion of which is under 16 ft. wide, but very few of which are under 16 ft. from hedge to hedge.

CLUB NEWS.

HEREFORDSHIRE.

THIS club arranged to have a Reliability trial to Shrewsbury and back on Thursday week, but the weather which has been experienced of late curtailed the entries considerably, and it was thought of postponing the interesting innovation. However, Thursday morning opened favourably and the more ardent motorists assembled at headquarters in Broad Street, Hereford, and decided to make the run. About thirty took part, and on arrival at Shrewsbury luncheon was enjoyed. The return journey was commenced at 3.15, Hereford being reached about 7.30 at night. With the exception of a drawback at Leominster, where the cars were compelled to go through two feet of water, the run was a very pleasant one. The machines kept strictly up to scheduled time, breakdowns were at a discount, and everything was thoroughly satisfactory.

SOUTHPORT.

A MEETING of the Southport Automobile Club has been held, at which Mr. Frank Hough (secretary) read a letter from the Reading Club re proposed automobile federation of provincial motor clubs. It was resolved that the Secretary write stating that the club viewed with the greatest satisfaction the action of the Reading Club, and hoped they would be able to bring the proposed automobile federation to a successful issue. They also promised to give the Reading Club every assistance that lay in their power. The Secretary was instructed to write to the Automobile Club asking why Mr. C. H. Threlfall should be suspended. It was stated that while Threlfall was suspended for changing over his machine another competitor in the same race was allowed to do the same thing, and they also wished to know why the matter was given to the Press before the general committee had sat and considered the subject. The meeting protested against the action taken in respect of Mr. Rignold, of New Brighton, who entered for the Lancashire Handicap, and whose case was treated in committee and disposed of at Southport without intimation to the secretary. The Secretary stated that there were now forty-four members on the books of the club, and there was a sum of nearly £30 in hand.

THE SPEED OF TRAMCARS.

At the West London Police-court on Saturday four drivers in the employment of the London United Electric Tramcar Company appeared to answer the adjourned summonses taken out by Mr. Moffat Ford for driving their cars at a speed exceeding ten miles an hour, the limit laid down in the Board of Trade Regulations.

At the first hearing Mr. Ford said that he timed the cars over a measured distance of a furlong, and he found they were travelling from 15½ to 17 miles an hour.

Mr. Muir, who appeared on behalf of the company, suggested that an independent test might be made by the Board of Trade. An adjournment was ordered for that purpose, and when the hearing was resumed Col. M. H. Purcell, of the Royal Engineers, said he was the officer nominated by the Board of Trade to make the tests. He posted an assistant at the generating station, and Mr. Parker, of the London Athletic Club, took the times. He measured off a distance of one furlong at Goldhawk Road, and then tested the cars; watching the driver who had charge of the vehicles.

With a flying start the following times were made by the cars:—No. 272, first trial, 34 3-5 secs.—13'006 miles an hour; second trial, 34 4-5 sec.—12'93; third trial, 32 secs.—14'06. No. 75, first trial, 34 2-5 secs.—13'08; second trial, 32 2-5 secs.—13'47; third trial, 36 secs.—12½. No. 60, first trial, 35 1-5 secs.—12'78; second trial, 36 3-5 secs.—12'29. No. 173, first trial, 33 3-5 secs.—13'39; second trial, 30 2-5 secs.—14'8. Those figures showed the highest speeds attained by the cars. Mr. Ford came up soon after the first test was taken, and he said that unless the car was in exactly the same condition—number of passengers, etc.—it was no test at all. Mr. Ford then withdrew. The statement that Mr. Ford was not admitted to the test was untrue. The witness also tested two other cars that came along, and the highest speed was 14-5 miles.

After other official evidence the magistrate said his difficulty was that evidence had been given as to the speed, which was over the limit.

Mr. Ford then obtained permission to call Colonel Crompton, as an expert, who said that, seeing there was no instrument on the car he was in to test the speed, he advised Mr. Ford to withdraw. He had tested the cars on other occasions, and they had exceeded the figures given. Mr. Evershed, an electrical engineer, of Chiswick, was of opinion that after he passed Young's corner on the day the tests were made the voltage was abnormally low, and the next day he communicated with Mr. Ford, whom he had not previously known. He judged by the speed and the lights. An adjournment was then ordered.

Two electric car drivers in the service of the London County Council were summoned at the Lambeth Police court on Tuesday by Inspector O'Sullivan for driving their cars furiously. In the first case Police-sergeant Gunn stated that at five minutes past ten o'clock on the morning of the 19th ult. he was in Camberwell New Road, when he saw an electric car being driven at a furious rate. With a stop-watch he timed the car over a measured distance of 110 yards, and found that it covered the distance in 15½ seconds—equal to a speed of fourteen miles and 908 yards an hour. In regard to the second case, Sergeant Gunn stated that a car covered a measured distance of 110 yards in the Clapham Road in 13 4-5 seconds—equal to a rate of 16 miles and 125 yards per hour. Mr. Hopkins ordered each of the drivers to pay a penalty of 5s. and 2s. costs.

MOTOR-CAR ACCIDENT.

AN inquest was held by Dr. W. Westcott, at Hackney, with regard to the death of Thomas Alliston, of Mildenhall Road, Clapton, who died from the result of injuries caused by being knocked down by a motor-car. Police-constable Crayford said he saw the deceased leave the kerb at the corner of Cornthwaite Road, and walk a few yards in the road, evidently with the intention of passing a tramcar which was going in the direction of Clapton. As he stepped out from behind the tramcar the

witness heard the motor-car horn blow and several persons shout. It was travelling about eight miles an hour. A verdict of "accidental death" was returned, the jury exonerating the driver of the motor-car from all blame.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED, M. P. H.	RESULT.
Lewes	H. Livesey, Rotherfield	28	£5, etc.
"	A. Brown	—	Adjourned.
Mansfield	A. F. Houlton, Mansfield	—	Dismissed.
Neston	F. D. Taylor, West Kirby	25	£3, etc.
Guildford	*F. Crocker, Wandsworth	24	£3.
"	F. G. Barnes, Godalming	21	£3.
"	J. F. White, Southsea	20	£3.
"	G. F. Halsall, Victoria, S.W.	20	£3.
"	G. Shepstone, Long Acre, W.C.	22	£3.
Chertsey	P. Brydone, Surbiton	—	40s., etc.
"	J. H. Parrott, Sonning	—	£5, etc.
"	W. Jolly, Kensington	—	40s., etc.
"	*M. Stone, Twickenham	—	£3.
Horsham	V. G. Morris, Queen Victoria St. E.C.	27	£3, etc.
"	T. Holt, Harrington Garden, W.	25	£2.
"	*W. Oakley, Hove	—	£1, etc.
"	*H. Harrison, Walton-on-Thames	—	£1, etc.
"	*A. J. Campbell, London	—	£1, etc.
Kingston	E. Ingleton, Gower St. W.C.	20	Dismissed.
London	C. W. Siebert, Fulham	21	40s.
Marlboro St.	S. Keeble, Stepney	23	40s.
"	F. Thacker, Chelsea	24	40s.
"	N. Damaros, Herne Hill	21	40s.
Worcester	T. N. Blackburne, Malvern	25	£3, etc.
Southam	J. H. Templecombe	25	£5 6s. 6d.
Snaith	Viscount Ingestre, Royal Horse Guards	—	£7 7s. 6d.
"	*J. Blayney, Snaith	18½	£1 7s. 6d.
Aldershot	J. G. Bultell, Slough	—	£3.
"	F. Cudlipp	21½	£5 9s. 6d.
"	G. Grant	—	Adjourned.
Denbigh	C. E. Spurrier, Wolverhampton	20	£1, etc.
St. Neots	J. Paddison, Aldenham Abbey	27	£7, etc.
"	E. Morse, London, W.	20	£5.
"	A. Henderson, Glasgow	25	£6.
"	W. Lewis, Southsea	24	£6.
Havant	F. T. Jane, Portsmouth	—	5s., etc.
Llangollen	W. Lair, Llanarmon	32	£1, etc.
Thetford	B. Walter, driver to Mr. T. Baring	—	10s., etc.
Shoreham	J. G. Bower, Norwood	27	£5, etc.
"	J. Watson	—	Adjourned.
Knaresboro'	J. J. Oddy, Birkinshaw	24	£3, etc.
"	J. Ambler, Baildon	22	£3, etc.
Fareham	T. Mattinson, Southsea	22	£2.
Littlehampton	F. Wigley, London	30	£5, etc.
"	J. Bourgeres, London	36	£6, etc.
Lambeth	W. G. Williams, London, W.C.	—	£2.

* Indicates Motor-Cycle Cases.

CLAIMS FOR DAMAGES.

IN the King's Bench, Dr. Alfred Grosvenor, of West Hampstead, has been awarded £150 damages against the Kannenbeer Supply Company, Limited, one of whose motor-vans had frightened his horses and caused his brougham to be wrecked. Counsel for the plaintiff said that on each side of the van was a huge dummy jar or jug. It made a noise like the rattling of jars and the rumbling of machinery. It was a weird and untamable vehicle. The Judge, in summing up, remarked that the noise made by the motor was different from anything that he had ever heard before, and he left it to the jury to decide whether it was a nuisance, and whether there had been negligence on the part of the defendants. The jury found in favour of the plaintiff on the first question and awarded the damages stated.

AT the Portsmouth County Court, the South Hants Motor Company have brought an action against Mr. F. T. Jane. On their behalf Mr. Blagg explained that his clients were the patentees of a motor bicycle, and during last summer employed a man to ride it about the town for purposes of advertisement. While it was being ridden along Osborne Road, the defendant's car swerved quickly round and collided with the bicycle, throwing the rider to the ground and doing damage to the machine to the extent of £5 10s., which was the amount claimed. After hearing the evidence, his Honour intimated that he was satisfied that the defendant's car was not going at an excessive speed, and the only other suggestion of negligence was that it was on the wrong side. He

believed that plaintiff was going at an excessive speed under the circumstances. He therefore gave judgment for the defendant with costs.

EARL EGERTON OF TATTON has claimed damages in the Altrincham County Court from Mr. H. V. Kilvert, a magistrate of Ashton-on-Mersey, for the negligent driving of a motor-car by the defendant and for injuries caused to a horse and trap. It was stated that on the morning of July 1st defendant and two fellow justices were going to Knutsford in a motor-car for the purpose of attending the Knutsford Quarter Sessions, when they met a young horse attached to a trap belonging to his lordship, in charge of a groom. The groom held up his hand as a signal to the driver of the motor-car to stop, but with the exception of slightly slackening, it was alleged, they went straight on. The horse became restive, and started to kick. One of its legs got over the shaft, with the result that the animal fell over, and the vehicle was overturned, doing considerable damage.

For the defence, it was contended that the car was going at about twelve miles an hour all the way, and as soon as the signal to stop was observed Mr. Kilvert slackened, and ultimately came to a dead stop within twenty-five yards of the trap. He stopped there for about one and a half minutes, and as there was no further signal he took it for granted that the driver of the trap wished him to pass. He restarted the car at about two miles an hour, and when he got opposite the trap the horse began to get restless on account of the roughness of the grass at the side of the road on which the trap was.

Judge Bowen Rowlands gave judgment for the defendant. He considered that the motor-car had stopped, and also that the groom should have made further signals for the car to be stopped if he had wished it to do so.

LIABILITY IN HIRING CARS.

AT Marylebone County Court, on Monday, Mr. G. M. L. Keham brought an action against Automobilia, 532, Oxford Street, W., claiming £12 12s. in respect of alleged breach of contract of warranty. The plaintiff stated that he had hired a motor-car explaining that he must be driven to Chalfont St. Giles' by half-past twelve noon. There was great difficulty in getting the car to start, but worse troubles followed. After running on only one cylinder for a while, and being pulled and pushed about all over the road, the car landed them at Hayes, about three miles the London side of Uxbridge. Plaintiff was then so disgusted that he sent on to Uxbridge for another car. As this car could not take them beyond Uxbridge, he was obliged to hire a carriage, and he and his friends were six hours late. Mr. Albert Mansell, secretary to the defendants, explained that the Automobilia was a French syndicate, duly registered according to French law. When the plaintiff hired the motor-car no contract was given. When sending out motor-cars, it was impossible to give such a warranty. The judge: It was a contract of hiring, and in that there is an implied condition that the thing hired should be reasonably fit for the purpose for which it is hired. The driver of the car stated that he ultimately discovered that one of the oil taps had become loose, and that was the cause of the whole trouble. The judge eventually found for the plaintiff for five guineas with costs.

THE CONSUMPTION OF SMOKE.

A TEST case has been heard in which the London County Council issued a summons against Mr. Earp for driving a light locomotive which did not then consume, so far as practicable, its own smoke, and the summons was taken out under the Locomotives Act of 1878.

The contention of the County Council was that as smoke was emitted from the locomotive, it could not come within the definition of the Light Locomotives Act of 1896, and was therefore subject to the penalties laid down by the Locomotives Act of 1878, which applies to traction engines and steam rollers.

Mr. Staples Firth appeared for the defence, and pointed out that the smoke was emitted from a temporary or accidental cause, and that the car was so constructed as not to emit visible vapour or smoke, and he called evidence on the question of construction. The magistrate dismissed the case.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notices will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, NOVEMBER 14, 1903.

[No. 245.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

A MOTORING resident having been asked to be local correspondent for the Motor Union at Epsom, quickly got in touch with the Urban Council and arranged to take the members with their surveyor and clerk round the local roads at any speed they might wish in order to see if any regulations under the new Act were necessary for the public safety. Cars were kindly lent by Messrs. H. J. Mappin (14-h.p. Daimler), W. Marden (16-h.p. Clement), E. H.

Renton (12-h.p. Darracq), A. S. Harrison (7-h.p. Panhard), and G. T. Langridge (11-h.p. Clement), and they duly met at the Council's offices on Saturday afternoon, when fifteen passengers besides the drivers and their friends embarked. Three of the cars were driven by their owners, and two by engaged drivers. About forty-three miles were covered in a little more than two hours, including the High Street (several times) and many other very narrow and tortuous roads. A large amount of traffic was encountered—as might be expected on a Saturday afternoon—including several young thoroughbred horses and the Surrey Stag-hunters, but all were safely passed. From the general expressions gathered afterwards, it would not appear that any unreasonable restrictions will be asked for at Epsom. The absolute control the cars were under, and the acute angles they so easily negotiated, surprised many of the voyagers. It is to be hoped that in other districts motorists will endeavour to do their duty in a like manner and save the local rates from the unnecessary expense of notice boards, and themselves from undue and irrational restriction of speed.

Progress in Hampshire.

THE Southampton and District Motor Union is the full title of the association of local motorists which was established at the well-attended meeting at Southampton referred to in last week's *Journal*. Col. Frank Willan, J.P., was elected to, and has since consented to accept, the position of president, the remaining members of the executive committee being Drs. Norman E. Aldridge and J. E. Ransford, Messrs. S. Tebbutt, A. Hendy, C. F. Keller, hon. sec. (ex-officio), car owners; Messrs. C. P. Trippe, Webb and Wride, motor-cycle owners. Colonel Willan, Mr. W. G. Beatty, and Dr. Aldridge have been selected as delegates on the executive of the Hampshire County Motor Union, recently formed at Winchester. Since writing the foregoing we learn that the County Council have decided not to schedule any roads under Section 8 of the Act.

Legal Dicta.

JUDGES and magistrates seem incapable of hearing cases in which the automobile figures without expressing their views on the motor-car. Recently, Judge Emden testified to the value of his experience as a motorist in deciding cases dealing with street accidents and the like. Now Mr. Rose, at the West London Police Court, declares that he has never

travelled in a motor-car—an omission that ought to be remedied without delay—nor has he ever suffered any inconvenience from such vehicles. Mr. Justice Bigham, too, has been making confessions. He does not like motor-cars; he does not drive one; and he does not enjoy being driven in one. Really the legal gentlemen belonging to the A.C.G.B.I. ought to see to the motor-education of the Bench.

The Proposed Federation.

THE discussion on the proposed Federation of the Automobile Club has now been fully launched, and while the circular letter sent out by the Reading Club has been warmly approved in many quarters, it has elicited a sharp answer from the Nottingham Club. It is, perhaps, unfortunate that already considerable heat has been introduced into the question, and we would deprecate any utterances likely to discourage free discussion with a desire to do the best that is possible for the welfare of the movement generally.

Motors and Voters.

MOTOR-CARS have become so indispensable at election times that their presence is not usually recorded in our columns, but, in connection with the bye-election in the Chorley division of Lancashire last week, an incident occurred which is significant of the universal interest in automobilism. Rumours were afloat a few days before the election that there was to be a great number of motor-cars, and the result was that in the mining districts many men refused to go to the poll unless they had an opportunity of testing this new method of locomotion. In the afternoon a horseman galloped into the party headquarters from Coppul Moor with the information that fifty miners threatened to abstain from voting unless a motor-car was provided for them. They were subsequently accommodated, and appeared to enjoy their experience.

Damages after Accidents.

ON a later page we report a trio of claims for damages resulting from accidents in which motorists have been interested parties. Actions against motorists secured damages of £200 and £250 respectively; that in which the motorist was the plaintiff, and the defendant a driver of horses, was followed by a verdict for £35. Motorists exercise reasonable care as a general rule, but it is evident they cannot be too solicitous as to the way in which their vehicles are negotiated through traffic, for the lawsuits that may follow any mishaps are a substantial addition to the expense of the pastime.

Dogs and Cars.

FOLLOWING the contribution in our columns last week with reference to dogs and cars, a suggestion from Capt. Kenneth Campbell seems *apropos*. This is to the effect that riders of motor-cycles should carry snuff or pepper to dust on the heads of dogs that worry riders. This is a remedy he has usually found efficacious, but one which the editor of the *Field*

deprecates as being likely to blind the animal, and only a little less dangerous than the use of diluted ammonia. Evidently the most humane solution of the matter has not yet been found.

Fair-Weather Vehicles.

THERE are many critics of motoring who regard automobiles as fair-weather instruments with limitations of usefulness to business or professional men who would try to substitute them for horse traction. The critics, though not quite correct, have still some grounds for their objections, and it remains for designers to go more thoroughly into the matter of producing vehicles which will give constant satisfaction in such a variable climate as ours. Cars provided with electric ignition always run a certain amount of risk in wet weather owing to the chances of short circuiting or some other electrical trouble, which is very difficult to locate in a downpour of rain when stranded by the roadside. Users of pneumatic tyres have ever the bogey of sideslip before them, while many drivers after a few thrilling skids have not nerve to face the roads on a greasy day. Solid tyres, though much less prone to skidding, are still far from being free from it.



Mr. Windsor T. White on the White Steam Car which acted as Pilot in the Recent American Reliability Trials.

Faults and Remedies.

THERE is no doubt that many motorists have painful feelings on this matter which the actual dangers really do not warrant. A properly built car can be driven slowly over the greasiest surface without extreme risk if the driver knows his business and understands the dangers of improper use of the brakes. Still the fear exists, and it is quite enough to dissuade a nervous man from motoring on a wet day. Furthermore, a motor-car driven in bad weather picks up an immensity of dirt, and, if the owner has no servant to help him in cleaning, he finds that the job involves a great amount of time, and becomes tedious if it has to be performed frequently. We have heard of a man who at first started out with the intention of motoring every day, but after a few rainy weeks the task of cleaning became such a constant and tedious one that he relinquished the idea of keeping up the game daily. He was rather irrational in his objections, of course; for if he had a pony and trap he would most likely have got a boy to do most of the cleaning up work. He also forgot that in motoring one is tempted even in wet weather to pursue a higher average of speed than in horse driving; and on a muddy day every increase of pace adds to the amount of mud flung up. Makers should study this matter carefully, and, by a better system of protecting the working parts from mud and wet, render the operation of cleaning as simple as possible. No doubt in time we shall come to

such improvements in tyres as will make the motor-car quite reliable on grease; and then—if it is not too near the millennium to have critics about—there will be no one dissatisfied about the rough weather capabilities of the automobile.

Cabs.

VARIOUS causes have contributed to the present discontent among the London cabmen. It is, however, freely suggested that the growing popularity of motor-cars has been one of the factors in reducing the number of "fares," and there is no doubt that the competition of "tubes," etc., and the adoption of the motor-car by the aristocracy, has told heavily upon a class of men who have rendered considerable service to the community, to say nothing of their enrichment of the ordinary work-a-day vocabulary. But where are the motor-cabs!

Track Racing in America.

THERE is much that is mysterious in regard to racing cars now in course of construction. Providing all the mysterious reports be true, remarks the "Automobile," there will be seen in America next season a great aggregation of American and European racing cars, and programmes containing so many entries in each class that a number of heats will have to be run for each event. Closer racing and faster racing is certain to result. Several American makers are known to have in process of completion some wonderfully fast and very powerful cars. Doubtless many of the new racers will be seen at the Florida race meeting at Daytona and Ormonde Beach early next year.

On the side of the Police.

EVIDENTLY dismissals of cases against motorists are not popular with everybody, and we learn that Major J. C. Gant, of Chiddingfold, has suggested that the Lewes police should take a case they have lost to the quarter sessions. Should they do so he will contribute £10 towards their expenses, and if it should be necessary to carry it to the High Court he will give £20. The defendant was driving Mr. E. E. Robb, who is now mayor of Tunbridge Wells, and Mr. Boot, the electrical engineer of the borough. According to the police they travelled over a measured furlong in eighteen seconds—a pace sufficient to take them outside the favour of the Chief Constable, who allows motorists to go twenty miles an hour in the district. But the defendant and his witnesses assured the Bench that their speed was not more than twelve miles an hour, while it was also shown that when the electrical engineer wanted to test the timing apparatus employed it would not work. Naturally the Bench decided to dismiss the case; hence the wrath of Major Gant.

"An Act of God."

A CURIOUS claim was made at the recent meeting of the Carmarthenshire County Council. Mr. W. J. Maybery, of Llanelly, put in a claim for £74 17s. 6d. for damages to his motor-car caused by the subsidence of the main road near Llandefeilog Hill. Mr. Mounsey, the Surveyor, stated that he did not know of the subsidence until four days after the date of the alleged damage to the motor-car. It was caused by water from the adjoining fields completely flooding the road. The thoroughfare had since been closed. He did not consider that the accident was due to anything but an "act of God." Mr. J. Johns said he knew the surveyor had received similar letters, and he moved that the clerk (Mr. Nicholas) reply that the Council were sorry for what had occurred, but that the circumstances were due to the weather, for which the Council could not be held responsible, as it was an "act of God." Dr. R. L. Thomas seconded this, and the motion was adopted.

A Motor Wagon for Westminster.

THE City of Westminster is about to adopt motor wagons for the collecting of refuse, and Mr. J. W. Bradley, the engineer to the Council, has issued an outline of the proposed specification, from which we learn that the vehicle to be tendered for is to be petrol driven, to have three forward speeds of four, seven, and ten miles per hour, and one reverse at about three miles per hour. The net load to be carried is not to be less than two tons, but may occasionally be up to three tons. A b.h.p. of fifteen will have to be developed at a maximum speed of 800 revolutions per minute. The tyres will have to be of solid rubber and the car is to be gear driven, and not by belt or chain. Alternative tenders are being invited (a) for the supply of one motor van on these lines, (2) for the supply of not less than six vans, and the maintenance of the same for seven years, the vehicles working an average of 125 hours per week.

"A Stand By."

IN connection with the latter requirement of the Westminster City Council the contractor will be required to keep on the Council's premises during the continuance of his contract a car of similar design as a "stand by," so that should any one of the cars get out of order its place may be

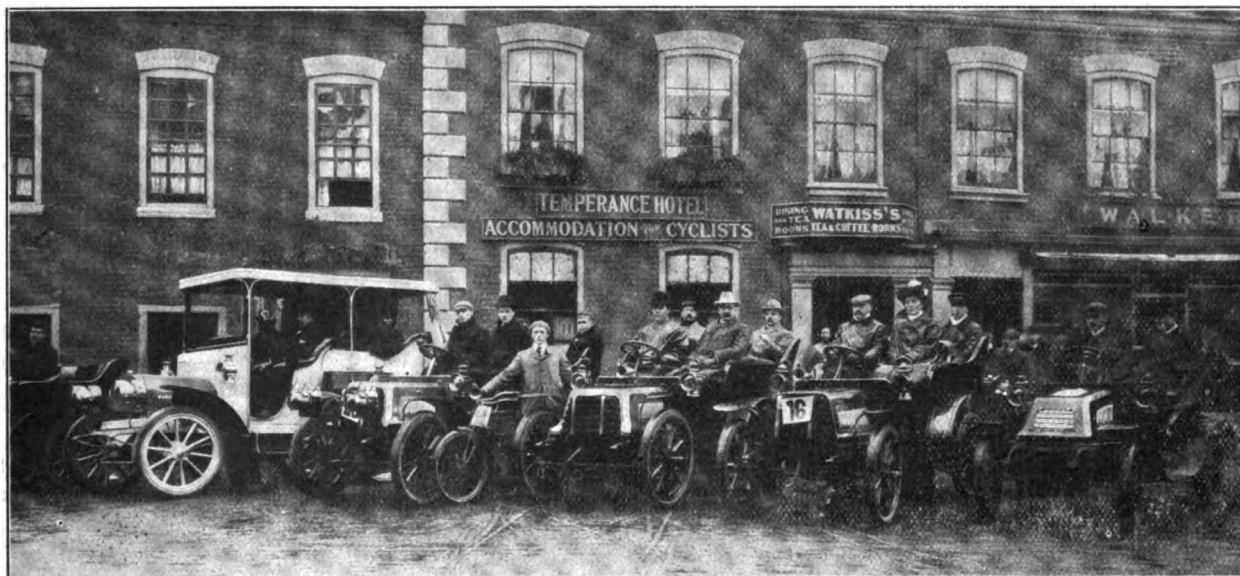
Aero Club have been invited. The Aero Club now numbers nearly 200 members, and premises have been taken at 110, Piccadilly, W., which will be ready shortly.

Ingenious but Impossible.

AN interesting suggestion comes from a well-known medical man in the West End of London. He queries whether anyone could read the identification plates to be put on the car, if above or below the plates were fixed Bleriot lights to shine in the daytime. The idea is ingenious, but we are afraid the police would, in such a case, manage to find some excuse for hauling the enterprising motorist before the magistrate for attempting to drive his motor-car through the Act of Parliament.

The Motor Car Act.

THE education of local councillors with regard to automobile matters should be rapidly pressed forward by owners of cars in every part of the country. As will be seen from our reference to the last meeting of the Barnstaple district council, on another page, representatives of the public on local bodies have not yet got over their fears with regard to motor-cars, and prejudiced views are likely to be



A Group of "Star" Cars at Bridgnorth, on the occasion of the Wolverhampton Automobile Club's Hill-Climbing Competition.

taken without delay, the said car remaining the property of the contractor and being kept in working order at his expense. Other regulations will have to be borne in mind, and, altogether, it is very clear that the City Engineer of Westminster is determined to look after the interests of his Council.

The Aero Club.

THE monthly dinner of the Aero Club took place on the 3rd inst. Among the members present were Mr. Roger Wallace, K.C., Mr. Graham, M.P., Mr. Frank Butler, Mr. C. F. Pollock, Mr. Schneider, Mr. Martin Dale and Mr. E. O. Pope. On the 21st inst. and the succeeding Saturday two balloons will leave the Crystal Palace at 1 o'clock precisely, open to members of the Aero and Automobile Clubs and Motor Volunteer Corps. Prizes will be given to those automobilists who first succeed in a capture by touching the balloons in their descent. The third annual dinner of the Aero Club and the anniversary of the Santos Dumont dinner will take place at the Carlton Hotel on November 25th. Several prominent members of the French

taken where a little knowledge would secure to motorists some liberty of action, consonant, of course, with common sense.

Motor-car Imports and Exports.

THE imports of foreign automobiles into this country show a further tapering off. The number of cars and cycles imported last month was 301, the value of the same being returned at £98,570. The value of the "parts thereof" is given as £21,495, so that we get a combined total for October of £120,065 as compared with £160,279 in September last and £102,817 (representing 293 cars) in October, 1902. Some of the imports were of only a temporary character, being re-shipped to foreign destinations. Thus last month the re-shipments comprised 45 vehicles, amounting in value to £14,989, bringing down the net imports in October to £105,070. For the first ten months of the year, the net import of motor-cars, cycles, and parts stands at no less than £1,656,150 (representing roundly 5,410 vehicles), practically double those during the same period of 1902. As regards the exports of automobiles of home manu-

facture, the shipments during the past month amounted to 100 vehicles, of a value of £24,999. Of parts the exports attained a value of £3,335, making a combined total for October of £28,334, compared with £15,619 (representing 38 vehicles) in October, 1902. To the end of October, 723 vehicles of British manufacture had been exported this year, these, together with the "parts," representing a sum of £283,302.

Steel Tyres for Racing Cars.

WHY not use steel tyres for racing machines, asks a St. Louis motorist in one of our American contemporaries, who points out that the recent numerous fatalities on the track, caused by overloaded or defective tyres, are evidences that something better is required than the present pneumatic tyres for high speed work. The same gentleman remarks that "pneumatics have given excellent results upon low-powered machines, but when it comes to cars of 80 or 100 horse-power and running faster than a mile per minute upon a curved track, they are dangerous unless more carefully made and fitted to the wheel. Even then they are liable to burst if pumped up too hard. Most drivers of heavy machines keep their tyres pumped so hard that they would favourably compare in hardness to a steel tyre, so far as effect on the road and vehicle is concerned." The suggestion he makes is that all high-powered racing machines should be fitted with flat steel tyres with quite a wide face, depending upon the weight of the machine. "A steel tyre could be securely bolted in position and could not possibly fly off the wheel, no matter how high the speed might become. Another advantage of the steel tyre would be its flat surface, as it would not cut into the track like round tyres do. If necessary, the tyres might have their edges flanged inwardly in order to present round surfaces at the edge, but they should have a large flat bearing surface between their edges. There is no reason why the speed of an automobile should be limited by its tyres, so that steel tyres, such as I have above described, and the application of sufficient power to the vehicle, would necessarily cause the vehicle to exceed the recent world's record of 125 miles per hour attained by electric cars in Germany." What have our readers to say to this?

Headgear.

NOT only are fashionable tailors realising the changes that are taking place in the raiment of the people, but hatters are complaining with even more bitterness of the decline of the silk hat. Motoring is said to be responsible to a considerable extent for the rapid fall in the use of the tall hat. "Many people," says Mr. Wilson, of the firm of Messrs. Glyn and Co., of Bond Street, W., "come to town in their cars, and transact their business in a tweed suit and a motor cap. There are some, however, who drive up to Bond Street, walk into their hatter's, and call for their silk hat, which is always kept ready for immediate wear. Underneath the heavy motoring coat they wear a frock coat. In an hour or so they return, and the silk hat is put on to the shelf until the owner comes to town again. No wonder," laments Mr. Wilson, "the hat never loses its glossy appearance or its shape, it never gets a chance."

Post Office and Place Names.

PASSING through villages, the pleasures of the journey are often minimised by the difficulty of ascertaining the exact location. Sometimes a local tradesman may identify his hamlet with himself, and across the front of his premises may boldly proclaim the name of the village or little town. But often the sense of location which is so finely developed in the motorist is the only assistance available for the traveller. In Surrey most of the post-offices are sufficiently clearly indicated to avoid confusion, but in many counties the geographical aids are among the sins of omission rather than of commission. If the new Postmaster General wants to introduce a necessary, harmless and

unobjectionable reform, he might issue an order that all post-offices have the name of their village or town plainly painted in a conspicuous position.

A Motor-Wagon Users' Association.

ELSEWHERE we give a synopsis of the paper on heavy motor traffic read by Mr. Shrapnell Smith at the A.C.G.B.I. last week. During the discussion that followed two important announcements were made: one to the effect that Mr. Long had expressed his willingness to appoint a departmental committee to inquire into the weight question; the other that the time had come for the formation of a Heavy Motor Wagon Users' Association. The appointment of such a committee would be welcomed not only by the makers of vehicles, but also by the users, while the necessity for the latter to combine to protect their interests is becoming increasingly apparent in view of the growth of the traffic.

Some Experiences.

ON the invitation of the Chairman, Lieut.-Col. Mayhew opened the discussion on the paper—the leading points of which deserve serious thought—and expressed the view that it would be a long time before the ordinary labouring man of the south would become an expert driver of a motor vehicle. Only experienced men should be engaged. Very few makers of lorries had been able to put a good tractor wheel on the market. He, as a commercial user, wanted a wheel that would last at least a year without repair. The tare weight was the fulcrum of the problem. As to fuel, there was nothing like using the best. Mr. Douglas Mackenzie's experience was that 240 working days per year was the limit for a motor vehicle. Heavy motor transport was largely a question of management and supervision. In conclusion, Mr. Mackenzie hoped an association of motor-lorry users would be formed.

In Praise of Petrol.

MR. G. H. BURFORD put in a plea for the petrol lorry, and thought it would be used in connection with the heavy motor transport of the future; and Major Lindsay Lloyd endorsed his view. It had been made clear to the military authorities that the internal combustion motor was the engine of the future for military purposes. Of course there were difficulties in the way, but they hoped shortly to get an engine using ordinary petroleum available in any country. Mr. Roger Wallace, K.C., in moving a vote of thanks to Mr. Smith, referred to a recent decision of Mr. Justice Grantham with regard to the ugliness of a motor-lorry, and said it ought to be upset. In seconding the motion Mr. Rees Jeffreys made the interesting announcement with regard to a Motor Van Users' Association and the departmental committee already referred to.

Mr. Smith's Reply.

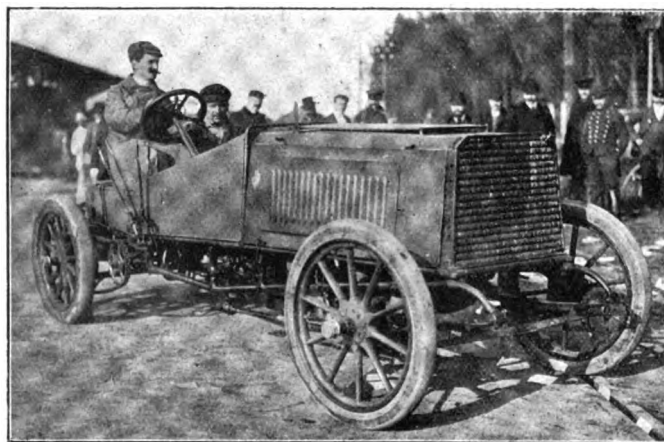
REPLYING to the discussion Mr. Smith dealt with the points raised by the various speakers. With regard to the petrol motor it had to be remembered that the internal combustion engine had not reached the stage where it could be universally adopted, and they had to deal with heavy motor traffic as it existed to-day. The difficulties of the hiring business were great indeed compared with those of firms employing their own vehicles. There was encouragement in the fact that the military authorities were giving attention to the subject, and they could thus materially benefit the commercial world. One point of detail mentioned by Mr. Smith was with respect to obtaining water for motor-wagons when on the road. Speaking generally this was not a troublesome matter, but it is one of those things in which the influence of a Users' Association could be well directed.

HILL-CLIMBING AT GAILLON.

THE annual hill-climbing contest on Sunday over the classic Gaillon course, organised by the "Auto," was unfortunately preceded by two fatal accidents. The attempt to lower the record for the kilometre with a flying start up the famous hill had attracted no fewer than eighty-eight entries. The start had been fixed for 9 a.m., but, as at that hour a dense fog prevailed, it was decided to postpone the trials until it disappeared, which it did about an hour or so later. Although urged by the authorities not to go over the course in the fog, a number of competitors immediately set out to take advantage of the postponed start to make a trial spin over the course. Among those who adopted this very injudicious proceeding, as the thick fog made it impossible to see more than a few yards ahead, was Danjean, who on his Georges Richard car did so well at Dourdan last week. He went up and down the hill without accident, but when he was ascending it for the second time he suddenly saw another car ahead. In order to avoid crashing into the automobile in front, Danjean swerved off to the side, and in endeavouring to pull the car round again, struck a mound of earth, which caused the vehicle to turn over with Danjean and his mechanic Chocholle beneath. Both were seriously injured, and Danjean expired about an hour afterwards. The mechanic was quickly conveyed to the hospital, and according to the latest reports is in a serious condition.

Just about the same time a second accident occurred a few miles away at Bonnières. Six foremen of the Serpollet works had obtained permission to attend the trials in a 15-h.p. Serpollet, and were making their way to Gaillon. Just before reaching Bonnières a sharp turn had to be encountered, and unfortunately until too late the driver did not see a large

automobile trials and races, experts agree that in both cases it was sheer foolhardiness to be attempting anything like speed in a mist which, although the sun was just visible (two hours later during the contest it was as clear as midsummer), made it impossible to see any object a few yards in front of them. Neither accident occurred during the course of the trials themselves, which indeed were carried through without the slightest untoward incident.



Rigolly on the Gobron-Brillie Car which made the best time at Gaillon.

The event of the trials was a repetition of the success of the Gobron-Brillie cars, Rigolly making the best time, climbing the hill in 33 3-5 sec., or equal to over 65 miles per hour, and beating last year's record by 2 2-5 sec. Duray took second place in the same heavy car category and in the general classification, on a similar vehicle in 35 1-5 sec. The third place was secured by Pelzer on a Serpollet steamer, in 36 4-5 sec. In the racing section Wagner on a Darracq won the voiturette class in 40 sec. Tavenaux on the Passy-Thellier being second in 58 1-5 sec. The light-car class proved a victory for M. Clement's new Bayard car, driven by Hanriot (time 38 sec.), Osmont on a Darracq coming next on the list in 43 sec. In the motor-bicycle class Demester on a Griffon, and Carreau on a machine of his own make, both made the climb in 41 sec. In the tourist section the winners were:—Cars the chassis of which cost less than £160, Eachet on a 6-h.p. Boyer, 2 min. 37 4-5 sec.; cars between £160 and £320, Menager (8-h.p. De Dion), 2 min. 12 sec.; cars between £320 and £480, Pelzer on a new 15-h.p. Serpollet steamer, 1 min. 2 3-5 sec.; cars between £480 and £720, Renaux (16-h.p. Peugeot), 1 min. 36 3-5 sec.; cars between £720 and £1,000, De la Rochette (Georges Richard), 1 min. 36 2-5 sec.; cars over £1,000, Heath (60-h.p. Panhard), 49 4-5 sec.; 16-seated omnibuses, Sorel (De Dietrich), 3 min. 15 2-5 sec.; and motor-bicycles, Momo on a Peugeot, 1 min. 2 4-5 sec. For about 600 metres the hill has an average gradient of 9 per cent., followed by a stretch of 10 per cent., and finishing with a piece averaging 7 per cent.

The only "foreign" car entered was a 36-h.p. Wolseley, which met with bad luck. The conditions of the contest permitted the cars to have 500 metres in which to "get up speed," and they were then timed for the flying kilometre up the hill. The Wolseley car, which was started last but one, had the misfortune to break the chain which transmits the power from the motor to the gear box after traversing 300 metres from the point of departure.

Notwithstanding the fact that a spare chain was at hand and could have been fitted in a very short time, the officials in charge refused to allow the car to compete again. Even if this decision was in accordance with the regulations, under the circumstances—particularly as the Wolseley was the only foreign car competing—we certainly think the authorities might have relaxed them to such an extent as to allow the vehicle a second trial.



Danjean's Car after the Accident.

wagon loaded with hay standing at the turn. In endeavouring to quickly steer the car round the vehicle, it struck a tree and collapsed. Two of the passengers, Cultin and Alek, were found to be dead, while of the others, one is seriously injured, and three met with slight injuries. While the accidents are unfortunate and regrettable, and may be expected to once more raise a cry on the part of the public for the suppression of

THE RELIABILITY TRIALS, A.D. 1953

A PROPHETIC REPORT.

EIGHT a.m. was striking on the nearest electric clock to the Crystal Palace Parade, as, in the capacity of Hon. Observer, I took my seat on the great 20,000-h.p. automobile for its first trip to New York and back in eighteen hours. As I looked along its glistening length of steel and aluminium I could hardly realise that its great engines were running, so still and free from vibration was it. The driver soon appeared, and while awaiting the signal to start saw that everything was in order. Five other monsters had already departed, and in a minute or two we were speeding after them. So I opened my record book and noted that, in passing through towns and villages, the motor was to rise in the air to avoid the traffic; also that failure to maintain an average speed of 200 miles an hour on the road and 300 while in the air might lead to disqualification.

In this year of grace all makes of cars had become standardised as to shape, which was something like a huge torpedo. Petrol as a motive force still held its own against all comers, experiments with electricity having proved abortive (a few Americans still held to steam). It was only in the engines and transmission gear that inventors had any scope for originality. To enable the car to rise in the air at will, huge fans were driven with enormous velocity, and came into action automatically when a given speed was exceeded (the police regulations forbid a greater speed than 100 miles an hour even on the special motor roads which spread all over the country) and as nearly all the cars could run at a good 400 miles an hour when required. This novel method had been adopted to enable motorists to gratify their taste for speed and avoid the attentions of the "Man in Blue." The whole of the mechanism of the great car was controlled by a few stops, arranged like those of an organ, on a board by the side of the driver.

The arrangements for dispatching the cars were very simple. By the use of a radiograph the starter could see at a glance the position of each car over the entire journey and constant communication could be kept with each competitor by means of Marconigrams. My book informed me that 150 miles an hour was to be the limit for the first twenty miles of our journey, which would take us well clear of London, so on receiving the signal to start the driver pulled out the stop marked "150 forward." Before we had run the length of the parade the speed indicator showed we were travelling well over 100 an hour and the car at once rose gracefully in the air and we were off on our 6,000 miles journey. I should have mentioned that each car was compelled to carry one of these indicators, which registered up to 500 miles an hour and marked on a tape the actual speed at any given point of a journey.

Lord Sarum's house at Hatfield was the end of the control, and was passed in seven minutes from the start, and as the next stage—Hatfield to Londonderry—was timed at 250 miles an hour, and might include several descents to the road level as tests (we were to be liable to these at any moment when not in the controls), the driver pulled out the "400 miles" stop and the hum of the engines at once took on a deeper note, while the hand of the indicator steadily crept round the dial until it pointed to 400, when the motor was at once automatically governed. The speed of the flying car was most exciting and delightfully free from vibration, and after a few minutes we sighted some of the competing cars and overhauled them rapidly. Just as we were about to pass the foremost and could feel the vortex of his whirling fans a Marconigram from headquarters ordered us to descend to the road and travel the next ten miles at 97 miles an hour as a test. We had just passed Marlborough as we dropped down to the road level and crawled over the ten miles at just under 100 an hour. Once in the air again we soon regained our former speed, but the competing cars had gone too far ahead for us to catch them unless something unforeseen happened. For the next hour or so we hummed along uneventfully, taking a diagonal route across Wales, and presently the Irish Sea was beneath us. I should have mentioned that our eighty foot road

wheels were fitted with great fans which expanded as we rose in the air and became like big paddle wheels, while our double sprag developed into enormous twin screws working on a universal joint and acting as a rudder. This last was a special patent and in use for the first time. Most of the other cars had sail rudders.

We passed over Londonderry two minutes ahead of time, the engines running grandly, and our progress had elicited the wireless signal "Well done!" from headquarters. For our 2,500 mile burst over the Atlantic there was no speed limit, so the driver gave a quick pull at the stop marked "Full speed forward." The needle of the indicator quickly pointed to 500 and then stopped useless, but our speed still increased until the noise of the whirling screws and wheels sounded like a shriek. The wind pressure was enormous, but encased in our house made of "Asmath," a new substance, tough as glass and quite as transparent and capable of resisting enormous strains, we made light of it.

About 200 miles from the American coast we sighted a flotilla of cars sent out to escort us to New York by the A.C.A. (Automobile Club of America) and as we were well ahead of time and had received warning from headquarters that we were travelling too fast, we slowed down to about 300 miles an hour. It was a beautiful sight to see the escorting cars describe a wide curve and form up behind us. Half an hour after this we were close to New York, so we slowed down and dropped towards mother earth. We took to the road again at the Battery and ran through the crowded streets to Central Park, where the trial cars were taken charge of by officials of the American Club. We had done the journey in 7 hours 12 minutes from London, and were none the worse for the trip.

A compulsory stop of one hour gave us time for a welcome luncheon at the Waldorf Astoria. Feeling much refreshed we watched some speed trials got up in our honour by the American Club, and then at 4.15, in company with the other competing cars, started again for England, home, and beauty. We were accompanied for the first 100 miles or so by a few of the American cars, but as most were steam driven, they were unable to keep up with us for any distance; so, playing a few bars of the "Star Spangled Banner" on our hooters, we bade them good-bye, and were soon travelling a steady 600 an hour over the vast Atlantic. The run home was uneventful save for one of the cars, No. 17, getting his rudder jammed when half-way across. We slowed down to render assistance, and stood by until one of the 150-knot Cunarders coming up he dropped quietly to the surging billows and was taken in tow by the big ship.

So far our run had been non-stop, but when about 200 miles from the Irish coast we noticed that our speed was steadily decreasing until the indicator stood at 170. A moment's examination showed that only fourteen of the twenty cylinders were working, and we came in for a torrent of chaff as the other cars rushed by us. But a few moments' suspense and we were running as strongly as ever, and could only conclude that oil had leaked on to the sparking plugs. A message from headquarters told us that we were seven minutes before time, so the driver ran very cautiously until certain that all was going well again, when we once more got up our speed to just over the 350 mark. The Club now signalled to us to make a detour round Glasgow and home over the Midlands, as a police trap had been discovered by one of the scouts near Bristol and three cars caught. We were allowed twenty-five minutes' extra time for this, but were still well within our normal time of eighteen hours as we passed over Birmingham. Our great search-lights cut a wide path through the darkness as we rushed along at 400 an hour. My record book was nearly blank, so devoid of incident had the journey been, when the glow of the lights of the Metropolis appeared in the distance.

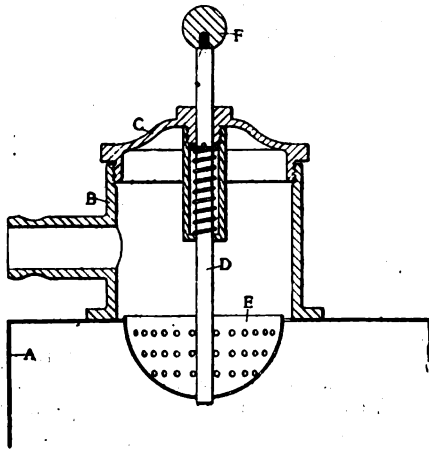
Just as we passed over Barnet I told the driver to slacken speed. He tried to do so, but as he altered the stops there was a terrific explosion; a fearful burst of flame; I felt myself falling, falling, falling through darkness towards the earth—and woke up to find myself in bed at my hotel, the room almost dark, and

the boots hammering on my door and shouting "Five o'clock, sir." I sat up and rubbed my eyes, the memory of my strange dream still with me, and it was some minutes before I realised that I was still in A.D. 1903 and due to journey to Eastbourne and back at less than 20 miles an hour according to present-day notions.

W. F. HICKS.

SOME USEFUL NOTES.

A CORRESPONDENT in the "Automobil Welt" describes a novel circulation indicator he has fitted to his car, which is shown in the sketch herewith. A represents a portion of the water tank, to which is secured the casting B, serving as a connection piece for the pipe through which the water returns from the cylinder jacket and also to receive the filling cap C. The latter is drilled centrally to receive the rod D, to the lower end of which is attached a perforated tin cup E. To the upper end of the rod is fastened a metal ball F. When the water is not circulating the rod is held in a certain position by a light coiled spring surrounding it just below the cap C. The ball F is then at a certain height above the cap C. When the water is being



circulated in the system it returns through the pipe connecting to the casting C and flows into the cup E and through the perforations into the tank. As the perforations are small, there is always a certain amount of water in the cup, which compresses the spring and draws the ball F nearer the cap C. The stronger the circulation the greater will be the amount of water in the cup and the lower the position of the ball.

WHEN terminal nuts are found to be set with corrosion do not use force to undo them. By so doing, the terminals may be twisted off the plate inside the accumulator. To loosen the nut, wrap around it a rag dipped in hot water, and keep the rag as hot as possible by repeated immersion. After a quarter of an hour or more, according to the degree of corrosion, the nut will come away fairly easily, but the lower part of the terminal should be firmly held with pliers as a precautionary measure whilst the nut is being unscrewed.

CONSIDERABLE damage is done to the inner tubes of pneumatic tyres by the nipping of the same owing to faulty attachment of the outer cover. Although, if proper care is taken, no difficulty should be found in putting the cover in position properly, the Continental Guttapercha and Caoutchouc Company state that, on the average, 48 out of every 100 tubes sent to them for repairs have been nipped and burst owing to faulty attachment. There are two different ways of nipping, either between the edges of the cover and the rim (Fig. 1), or between the edges of the cover and the studs (Fig. 2). In both cases the tube is subject, when the car is being driven, to friction which it cannot stand for any length of time, and finally is bound to burst with a loud report. Special care should therefore be taken to place the tube properly in the rim.

THE best way to ascertain whether the inner tube is properly put in is to push the studs, before their nuts are

tightened, inside the tyre and then pull them back again. If this can be done easily, it shows that the tube is in its right place. If, on the contrary, there is some resistance to the stud, it is a sign that the tube has been nipped or the cover improperly put on (Fig. 3). This can easily be remedied by slightly lifting the edge of the cover, whereupon the cover or the tube, as the

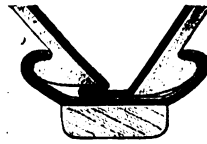


Fig. 1.

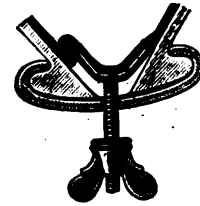


Fig. 2.

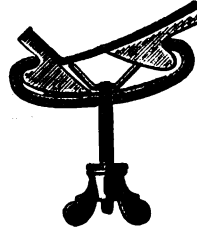


Fig. 3.

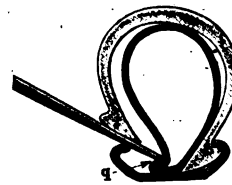


Fig. 4.

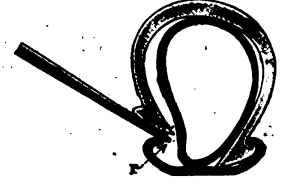
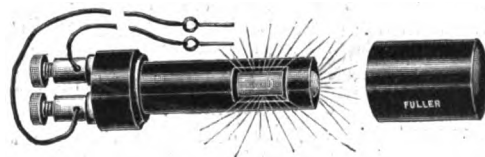


Fig. 5.

case may be, can be put in the right position. If these precautions are neglected, one runs the risk of having a tyre accident whilst on the road. It is, therefore, better to make sure that everything is all right immediately after putting on the cover, and in case of some defect, to remedy it at once before it is too late.

It frequently happens that the tube is nipped by the lever by which the outer cover is detached. When taking off or putting on a cover, special care should be taken not to push the lever too far under the tyre, as otherwise the tube may get under it and be nipped between the lever and the rim as shown in Fig. 4. The correct way of using the lever is shown in Fig. 5.

A VERY useful combination accumulator test lamp and search light has lately been introduced by Messrs. John C. Fuller and Son, of Bow, E., and of which an illustration is given herewith. This lamp affords a reliable test of the state of the accumulator, because it is constructed to take a heavy current, and the filament being under view against a dark background, its colour is a guide to the voltage and vitality of the cell. This is indicated as follows:—The lamp wires are connected to the terminals of the accumulator, and the filament is examined after a lapse of about a minute. If the light is still bright—not yellow, but white—the accumulator is well charged up. If the light is yellow the cell is "fair," and would be safe for a short journey. If the light is red, the accumulator is nearly exhausted, and requires charging. Sometimes on connecting the lamp the light is at first bright, and then rapidly drops away in brilliancy. This is an indication that the accumulator requires charging. The cell in this case would probably have given a good reading on a voltmeter, but after a mile or two would have given up

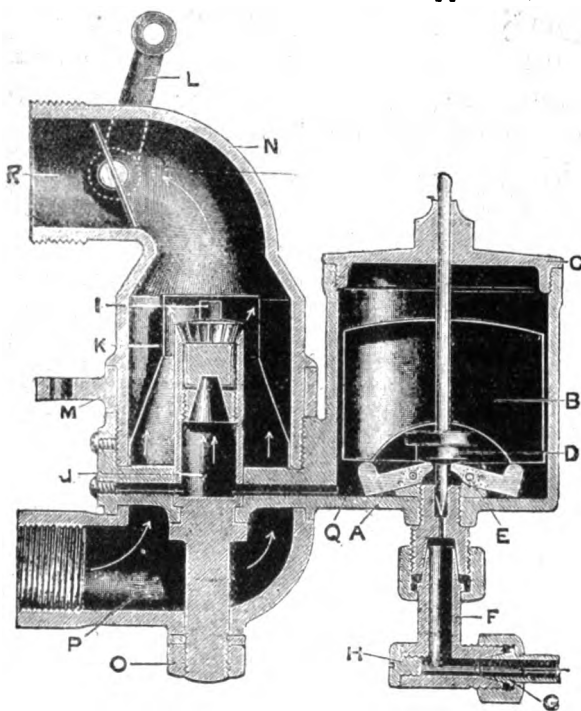


altogether. The filament is examined against a dead black background, and can be used equally well in the day time or at night. The lamp can be used as a searchlight by covering the side "window" with the thumb and projecting the light from the end. The apparatus is fully protected against mechanical injury, and can be carried without risk in the tool bag or in the coat pocket, while another advantage is that no unscrewing is required to bring it into action.

MOTOR CYCLING NEWS.

THE Auto-Cycle Club is asking the President of the Local Government Board to have it made perfectly clear that the limitation of the speed of a motor-cycle drawing a "trailer" will not remain in force after January 1st. Other recommendations include the desirability of defining a motor-cycle as being any motor-car designed to travel on three or less wheels, and which does not exceed, unladen, 3 cwt. in weight; the inclusion of the charge for the plate forming the identification mark in the registration fees; the reduction of the size of the identification plate for motor-cycles to one quarter the size of that for cars; that the position for the number be at the rearmost part of the cycle, and that an illuminated stencil plate be carried in front of the front lamp, so placed as to clearly show the number. The Club also asks that the license to drive a motor-car should give power to the holder to also drive a motor-cycle.

FOR the 1904 season the Minerva Company are adopting a float feed spray carburettor made under licence from the Longuemare Company, and in which a number of modifications have been introduced. A sectional view of the apparatus, which is



Section of Minerva-Longuemare Carburettor.

- | | |
|----------------------|---------------------|
| A—Float chamber. | J—Spraying tube. |
| B—Float. | K—Copper funnel. |
| C—Cham. | L—Throttle lever. |
| D—Needle valve. | M—Air regulator. |
| E—Weights. | N—Head. |
| F—Filtering chamber. | O—Screw. |
| G—Entry tube. | Q—channel. |
| H—Cleaning plug. | R—Exit for mixture. |
| I—Spraying cone. | |

known as the Minerva-Longuemare, is given in the accompanying illustration. The petrol flows from the tank through the pipe G and channel F into the float chamber above. As the float B rises, the needle valve, by means of the levers E, falls, and so shuts off the supply of petrol. The latter is thus always kept at a constant level in the float chamber. From the latter the petrol is drawn into the opening J and up through the nipple I into the mixing chamber. Warm air is sucked from around the engine through the pipe P, and drawn through orifices at the base of the mixing chamber. The air is intimately mixed with the petrol as the latter is sprayed through the nipple, the mixture thus formed passing to the engine along the pipe R, in which is a throttle valve controlled by the lever L. The quality of the mixture can be varied by admitted extra air through openings in the adjustable sleeve M. In the pipe F wire gauze serves as a filter for the petrol. The carburettor is

made so that it can be readily taken to pieces for cleaning purposes. The cap C can be removed to give access to the float and float chamber, while the air inlet pipe can be detached by removing the nut O. To prevent dust being carried to the interior of the mixing chamber the mouth of the hot-air tube is fitted with fine gauze. The carburettor is made in two sizes—one for 2 and 2½-h.p. engines and the other for the 3½-h.p. motor.

THE final contest for the Edge trophy took place on Monday over the usual 200 miles course at Hatfield, under the auspices of the Motor-Cycling Club. The first trial was held on June 27th, when thirty competitors started. That and subsequent trials have resulted in a gradual weeding out until last Saturday, when only three—Cowles, Jones, and Milligan—were left in the contest. Cowles broke down on Saturday, leaving Jones and Milligan to settle the matter on Monday. Jones on his De Dion tricycle experienced a punctured tyre, Milligan, on a 2½-h.p. Bradbury, alone completing the journey without an unofficial stop, and therefore becomes the first holder of the trophy.

UNDER the name "Strictor" Messrs. Salsbury and Son, Limited, have recently brought out a new driving belt for motor-cycles. It is made in two qualities, the best being of four-ply buff coloured leather with one row of copper stitching. It is exceedingly soft and pliable. The second quality is in black leather, three-ply, metal stitched. Both qualities have been submitted to independent tests by Messrs. David Kirkaldy and Sons and have shown some noteworthy results. For instance, the tensile strength of the best quality was shown to be 6,616 lbs. per square inch, while that of the second quality came out at 5,801 lbs., both figures being much higher than is usually obtained. Anyone interested in elongation tests of motor-cycle driving belts will find the tabulated results of Messrs. Kirkaldy, issued by Messrs. Salsbury, worthy of close study.

THE 1,000 kilometre reliability trial of motor-cycles organized by the Moto-Cycle Club de France started on Tuesday. In the *quart-de-litre* category there are twenty-two entries, and in the *tiers-de-litre* class thirteen competitors. The trial is divided into six daily runs, and will come to an end on Sunday next. No English machines are competing.

THAT motor-cycling is making headway in Germany is indicated by the announcement that the German Motor Cyclists' Union, which was only formed five months ago, has already over 1,000 members.

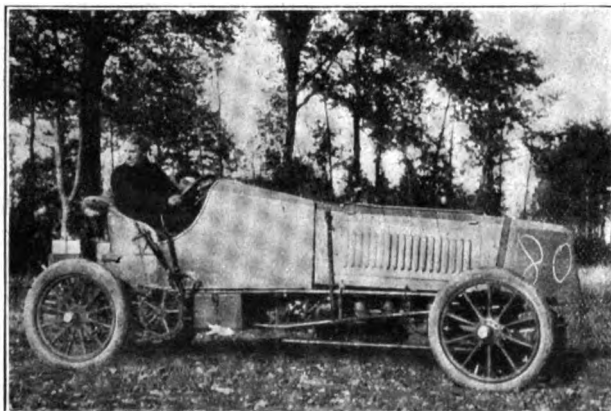
THE French firm of motor-car manufacturers, Gobron-Brillié, whose 100-h.p. car holds so many records, have decided to place motor-cycles on the market, and have selected the Minerva motor to fit to their machines.

THERE is no firm engaged in the motor-cycle industry that has shown a greater confidence in the future of the motor-bicycle than the Rex Motor Manufacturing Company, Limited. They were one of the first companies to arrange for a large output of this class of machine. Up to the present they have marketed four successive models, starting from 1½-h.p. to the 3-h.p. of the past season. Following the tendency of the times, the horse power for next season is to be increased to 3½. In the new model the front forks are of an improved design to give increased strength with the additional weight of the machine. The engine is placed in a vertical position in a registered design of cradle. The wheel base has been slightly lengthened, and the weight of the rider is now distributed in a way that the makers claim will obviate any tendency of the machine to side-slip even on the greasiest of roads. Another new feature is the air draught device incorporated in the cylinder design, giving a clear passage between the exhaust port and chamber and cylinder wall. It is claimed that the air passage mentioned will keep the engine perfectly cool under all conditions. In deference to the demand for handle-bar control, as far as possible, the new Rex is fitted with an exhaust valve lift lever, entirely independent of the ignition lever, manipulated from the handle-bar.

CONTINENTAL NOTES.

THE event of the week is the interest the Kaiser has evinced in the 1904 Gordon Bennett race. In the course of a conversation with Freiherr Baron de Brandstein, general secretary of the German Automobile Club, at Homburg last week, His Majesty recommended the greatest care in organising next year's Gordon Bennett Cup race, and referred to the arrangements of the English Automobile Club in Ireland as a model for preventing accidents. His Majesty suggested that a series of contests should be held independently of the Cup race, one of which should be confined to motor-cars using alcohol as fuel, and he offered to present a prize for this event. So far no definite route has been selected, but the one most favoured is that in the Homburg district, starting from and finishing at Saalburg. From this town the circuit passes through Oberursel, Koenigstein, Esch, Idstein, Neuhoef, Limburg, Weilburg, Usingen,

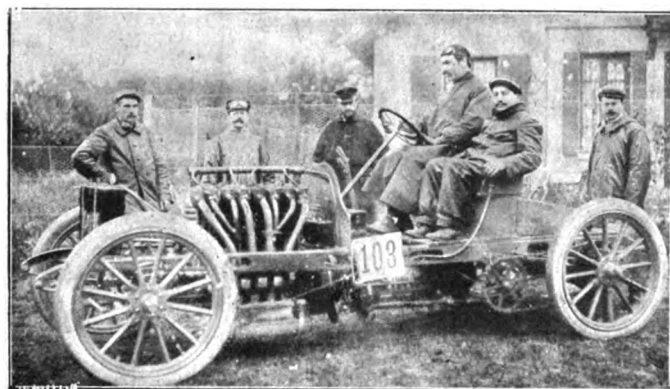
cess, both in the way of organisation and in the speeds attained, new official times for the flying kilometre being set up by Duray on the 100-h.p. Gobron-Brillie, of which I send you a photo. The motor-cycles weighing less than 50 kilos. (110 lbs.) were sent off first, there being close upon twenty competitors. The first two places were secured by Griffon machines, and the third by a Peugeot, the winner being Lamberjack, whose time for the flying kilometre was 34 1-5 sec., or equal to over 64 miles per hour. The light-car class was a fight between the Georges Richard and the Bayard cars. The former secured the two first places, and M. Clement's new vehicle the third position. The winning car was driven by Danjean, who, unfortunately, met his death three days later. His time was 30 4-5 sec. The voiturette class proved a victory for Wagner, who on a Darracq car covered the kilometre in 34 4-5 sec., beating Tavenaux on a Passy-Thellier car with Gobron engine, depicted in one of the accompanying illustrations. Tavenaux was second in 36



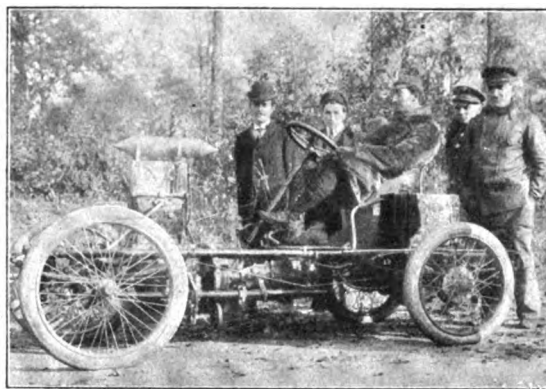
Duray on the Gobron-Brillie Race.



Three of the Motor-Cycle Competitors.



The Tony Huber Racer.



Tavenaux on the Passy-Thellier Car.

THE DOURDAN SPEED TRIALS.

and back to Saalburg, a distance of 137½ kilometres. The circuit would thus have to be traversed four times. A 140 kilometre course between Bielefeld and Paderborn has been pointed out by the Westphalian Automobile Club and the "Radmarkt" as being more suitable, and this is being inspected by the authorities of the German Club.

In motoring circles in France the question is being asked as to what America intends doing with regard to the 1904 race. Under the rules of the competition, the entries close on December 31st, and so far nothing has been heard from the United States. Neither the Automobile Club of America, which must issue the challenge, nor the makers on whose behalf it must be tendered, appear to have betirred themselves or evinced the slightest interest in the matter.

THE postponed kilometre races at Dourdan were run off on Thursday last week in splendid weather, and were a great suc-

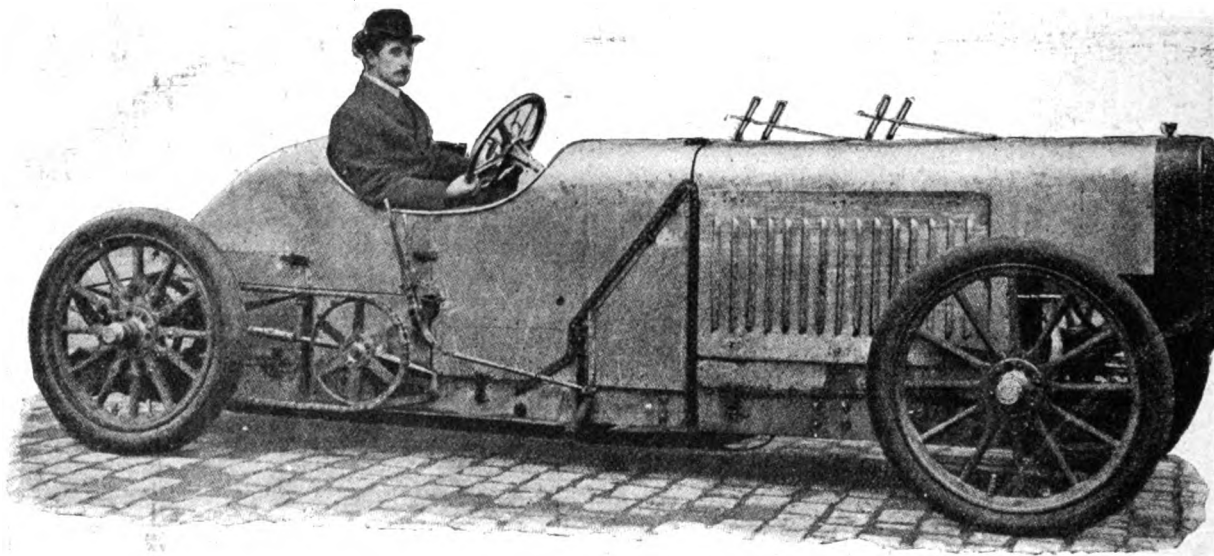
cess, both in the way of organisation and in the speeds attained, new official times for the flying kilometre being set up by Duray on the 100-h.p. Gobron-Brillie, of which I send you a photo. The event of the day was the speeding of the heavy-car class, Duray, as already mentioned, putting up new figures for one kilometre—26 2-5 sec., equal to a speed of 85 miles per hour, Le Blon being second in 27 3-5 sec., and Jeandré on a Mors third in 29 3-5 sec. In the touring-car section Roy on a Roy car won the less than £160 chassis class in 1 min. 26 2-5 sec.; Pelzer on a Serpollet the £320 to £480 class in 40 4-5 sec.; Gasté on the Automotrice illustrated in the last issue the £700—£1,000 class in 1 min. 9 4-5 sec. It is not generally known that Duray when he broke the record was using alcohol as fuel.

BRIEF details of the 1904 models of the leading French builders are gradually leaking out. Messrs. Rochet and Schneider will make a feature of 16-h.p. and 24-h.p. cars which will be fitted with a new type of carburettor and improved brakes. The

chassis will be of such a length as to permit the fitting of carriage bodies with side doors. The Georges Richard Company are building 8 and 12-h.p. two cylinder cars, and 16, 24, and 40-h.p. four-cylinder vehicles, and have on the stocks for the *Salon* a 12-h.p. double phaeton and a 16-h.p. limousine, with entrance at the side. For 1904 this concern is adopting the mechanically-operated inlet valve. Renault will make a feature of 7-h.p. single cylinder, 10-h.p. double cylinder, and 14-h.p. four-cylinder cars. All three types will be fitted with a new and improved form of change-speed gear.

BARON HENRI DE ROTHSCHILD has just presented a new cup to the Automobile Club of Nice for a kilometre race with flying start. It will be contested under similar conditions as that which he previously presented, and which was won outright by M. Leon Serpollet. The race will take place on the Promenade des Anglais during next year's Nice week.

AT the meeting last week the committee of the French Automobile Club decided to take steps towards the organisation of an excursion from Paris to St. Petersburg. The question of drawing up rules, etc., has been left to the Sporting and Touring Committees of the Club.



Mr. H. S. Harkness on his 120-h.p. Racing Car.

[L'Automobile.]

THE forthcoming *Salon* in Paris is to be made the occasion of a brilliant fete in honour of the visiting delegates from foreign automobile clubs. It had been intended to hold this fete at the time of the automobile congress in June last, but owing to the Paris-Madrid disaster it was found desirable to postpone it. It can hardly be expected that a fete in the depth of winter will be so picturesque or of so varied a character as in June, when it would take place out of doors, but the gala which has been decided to hold at the Opera on the 17th December will nevertheless add pleasure to the business of attending the shows. The fete will be preceded by a banquet at the A.C.F. club-house in the Place de la Concorde.

A PROPOSAL to follow the example of England in forming a motor volunteer corps has been brought before the Austrian Automobile Club by Count Pötting, who, in addressing the members, referred to the splendid work done by the British corps in the recent manoeuvres. The idea was well received, and already a large number of names of would-be members of the projected corps has been received.

A Moscow engineering firm has just completed a special motor coach for use on the railway between St. Petersburg and Zarskoe-Selo. The vehicle, which has been built for the Hereditary Grand Duke of Russia, is fitted with a Panhard 24-h.p. petrol engine. It has accommodation for ten passengers,

and in the trials to which it was subjected attained a speed of forty-four miles per hour.

NEXT year's automobile week at Spa will be held from the 25th to the 30th July, under the auspices of the Automobile Club de Spa. The programme will comprise a hill-climbing contest, a driving competition, and motor-boat races.

As a result of the reliability trial held in September last by the Berlin Automobile Union, a committee has been appointed to arrange for a similar event in April or May next. It is proposed that the distance shall be 500 kilometres.

No route in the neighbourhood of Paris sees more traffic than does the famous road joining Versailles to the capital, and none is more favoured by automobilists. Passing through charming scenery, it forms the initial stage of numberless delightful excursions, and therefore rejoices in a continual stream of pleasure-seeking motorists, while the *chauffeur* intent on business frequents it by reason of its hilly character, so admirably adapted for carriage testing purposes. Throughout its length, some fourteen miles in all, there hardly exists a quarter mile stretch of level ground, and the hills of Suresnes and Picardie are capital tests of a motor-vehicle's ability. The latter hill is particularly notable

worthy, for down its long slope have rushed into Versailles the competitors of many historic races.

THE strange-looking vehicle shown in the accompanying illustration was seen in Paris a few days ago. It belongs to Mr. H. S. Harkness, a well-known American motorist, and was built to his designs with the view of competing in the last Gordon Bennett race. Unfortunately it was not ready in time, so Mr. Harkness took it over to France to put it through its paces on the excellent roads of that country. As will be seen, the car is built exceedingly low, its total length being 15 ft. The motive power is furnished by a four-cylinder engine, said to develop 120-h.p. The inlet valves are arranged to work automatically or mechanically, while both magneto and accumulator ignition are provided. The motor is located about the centre of the frame. Three speeds forward and a reverse are provided, the drive on the top speed being direct. The frame of wood and steel is suspended below the axles. Mr. Harkness is stated to have made the journey from Bordeaux to Paris in the car in seven hours and to have attained a speed of 88 miles per hour. The vehicle was only in France a few days and was shipped back to America last week. It is rumoured that Mr. Harkness intends to enter it for the eliminating contest for the American Gordon Bennett team, if the United States decided to participate in the 1904 race.

HERE AND THERE.

THE motor-omnibuses plying at Hastings are fitted with patent Buffer tyres.

MESSRS. FRISWELL, LIMITED, have decided to hold all special sales on Tuesdays; the periodical sales every Thursday will be continued as before.



One of the M.M.C. 10-h.p. 12-seated Public Service Cars running between Folkestone and Hythe.

THE Twentieth Century Manufacturing Company have opened a London depot at 114, Fore Street, E.C., where a large stock of the "20th Century" automobile lamps will be found.

A NEW Technological and Scientific Dictionary in fortnightly parts is being published by Messrs. George Newnes, Limited, in which motors and motor-car manufacturers will have prominence.

MESSRS. FRANK F. WELLINGTON, LIMITED, have been appointed sole London agents to the Pick Motor Car Company, Limited. They have examples of the 6-h.p. and 10-h.p. cars in their Wardour Street showrooms and can give immediate delivery

MESSRS. H. G. KETTLE AND COMPANY, of Lower Brook Street, Ipswich, are recommended by Mr. H. S. Winter, of Hoylake, as a practical firm able to render good assistance to motorists in distress. Mr. Kettle answers summonses for help at any time of the day or night.

LAST week Mr. J. C. Dennis, of Guildford, was married. The bride and bridegroom drove to the church in a motor-car, accompanied by two other cars containing friends. Mr. R. Dennis acted as best man. After the ceremony the happy couple drove away to Bournemouth in a 20-h.p. Dennis car, while the honeymoon will be spent in travelling through Devonshire and South Wales by automobile.

MESSRS. GEORGE BRAY AND COMPANY, LIMITED, have sent us samples of their special burners for the acetylene lamps of motor-cars and motor-cycles, together with a copy of their list of acetylene burners. In the latter catalogue particulars are given of no less than seven different types, each of which are made in several sizes. Special attention is drawn to the "Elta" double-flame burner, which is claimed to be the only one which can be turned high or low like coal gas burners, without carbonising. The tips are made of "enamel," which is stated to surpass steatite for the purpose, while a further advantage claimed is that the fine gas apertures will not stop up so readily as is the case with the usual type of burner. We may add that the Bray burners can be made to suit the fittings of any country, but unless otherwise ordered, they are sent out with English taper screw.

A MOTOR fire-engine has just been added to the equipment of the Fire Brigade at Cologne, Germany.

A PRACTICAL work on Gas and Oil Engine Management, by Mr. M. Powis Bale, has just been published by Messrs. Crosby, Lockwood and Company.

THE first of the Great Western motor-cars intended for the Penzance, St. Just, Newlyn, and Marazion services had a trial run over the ground last week, and it proved most successful.

MR. CHARLES SCARISBRICK, of Southport, who has just been knighted, is the father of Mr. T. T. L. Scarisbrick, the enthusiastic motorist to whom much of the success of the recent Southport meeting was due.

MESSRS. JOSEPH LUCAS, LIMITED, have sent us a copy of a reprint of a series of articles by Mr. Henry M. Wells on "Cylinder Oil and Cylinder Lubrication," which contains a large amount of useful information on this important question.

MR. F. S. DIMMICK, of Bridgetown, Barbados, has sent an enquiry to an American contemporary for a steam omnibus and a steam wagon for service in the West Indies. The 'bus must seat from 14 to 20 passengers, and the wagon carry loads up to 10 tons. Both vehicles must use paraffin as fuel.

ONE of the Robertson steam wagons illustrated in our last issue has just been delivered to Mr. Thos. Riley, of Fleetwood, a large contractor now doing work at the Government Buildings at Lichfield. The lorry is employed in carting building materials from the railway goods station to the site, a distance of three miles, the loaded journey averaging half an hour.

THE Lancaster Engineering Company, Limited, has been registered with a capital of £2,000 to take over all or part of the business carried on at Loveday Street and Bailey Street, Birmingham, by Mr. W. Russon, and to carry on the business of manufacturers, factors of, and dealers in motor-cars, motor-cycles, carriages, cycles, etc.

THE Enfield Cycle Company, Limited, have now equipped an entirely separate factory for the production of motor-cars and motor-bicycles, and are bringing out two cars for the 1904 season of 10 and 6-h.p. respectively. The 10-h.p. car will be fitted with a double cylinder engine of the company's own manufacture, while the 6-h.p. vehicle will be equipped with a De Dion engine.

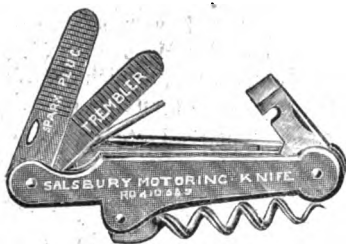


A 12-h.p. Ader Touring Car outside the Fortified City of Avila, Spain.

MESSRS. A. L. DYKE and G. P. DORRIS have compiled, and the A. L. Dyke Automobile Supply Company of St. Louis, U.S.A., have published a very useful work on the Diseases of a Gasolene Automobile and How to Cure Them. The book is compiled mostly from periodical automobile literature, and contains a considerable amount of useful matter in the way of the troubles likely to be experienced by users of petrol motor-cars, and the methods to be adopted to overcome the same. Unfortunately the "diseases" are not dealt with in any systematic order, and we would strongly recommend the publishers, should a second edition become necessary, to add an index.

A PROPOSAL to form an Italian Motor Volunteer Corps is under discussion at Turin.

ONE of Messrs. Salsbury and Sons' latest productions is the "motoring knife" illustrated herewith. As will be seen it comprises, in addition to a screw-driver, pricker and a cork-screw, a trembler gauge and a sparking plug gauge and cleaner. To adjust the trembler of the De Dion and similar type engines, the cam being out of action, the plain part of the trembler gauge is inserted between the platinum point and the disc of the spring; screw up the point until the gauge (plain part of the blade) is held between same and spring tightly enough to pre-



vent it falling out by its own weight; then tighten set screw. To clean trembler points, give two or three slight movements with end of trembler gauge, which will brighten the contacts, and the trembler is then ready for work. To clean sparking plug, insert end of corresponding gauge between points, draw backwards and forwards two or three times whilst pressing the points together with finger and thumb. Set plug points to the plain part of spark plug gauge so that there is no play between the points and the blade. The pricker will be found useful in cleaning oil holes and the vent holes in acetylene lamp generators.

THE German Daimler Company has promised a prize of 2,000 francs (£80) in connection with the Paris-Rome reliability tour to be held in March next.

MOTORISTS bringing cars from the Continent *via* Harwich will be interested to know that Messrs. C. F. Bevan and Sons, 62, Church Street, Harwich, stock petrol.

MR. A. W. GOODALL has taken the premises at 172, Pentonville Road, London, N., where he is opening an agency for the sale and exchange of cars, etc.

MESSRS. PETO AND RADFORD, LIMITED, have now brought out a new accumulator filled with the special Peto-Cadett electrolyte and adapted for use on motor-cycles.

At the annual meeting of Bayliss, Thomas and Company, Limited, at Coventry, on Monday, the chairman, Mr. B. Rose, said the improved condition of the company's affairs was due to the development of the motor business.

At Reading, Albert Chandler has been summoned for neglecting to allow proper passage on the highway at Sulhamstead. The evidence showed that the defendant, with a van, obstructed a motor-car. He was fined 6d. and 4s. 6d. costs.

MESSRS. VAN RADEN AND COMPANY, LIMITED, are removing to a very spacious and well-equipped factory in Foleshill Road, Coventry, where several additional modern tools have been installed for the manufacture of electrical ignition devices of all kinds.

THEIR 1904 catalogue has just been issued by the Automobile Components, Limited, of Islington, N. This is concerned mainly with the component parts of cars supplied to makers for assembling. Several pages are devoted to a light set of components for a car to carry two persons and luggage. The Company's No. 3 set has been thoroughly revised and will be found serviceable in the construction of cars of 6 to 8-h.p. with tonneau bodies or to carry two persons. Other pages deal with motors, axles, gears, etc., motor-launch sets, motor-cycle sets, etc., and the whole catalogue is got up in a style which reflects credit on Automobile Components, Limited.

ON Saturday, two motor-cars, driven by Mr. E. A. Livit and Dr. Longinotto, both of London, collided at Hickstead, near Brighton. Neither was going at a great pace at the time of the mishap, and fortunately no one was hurt, although the front parts of both cars were much damaged.

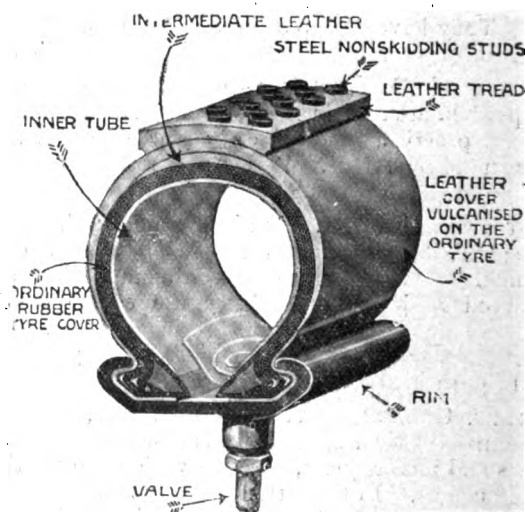
FOUR firms, in addition to the Cannstatt Daimler Company are known to be building cars to compete for places in the German team for the 1904 Gordon Bennett race. These are Benz and Company, of Mannheim, the Adler Company, of Frankfurt, the Neue Automobile Company, of Berlin, and the Protos Company, of Berlin.

THE Automobile Club of America, in response to suggestions by Mr. Arthur Herschmann and others, has decided to promote a mid-winter commercial vehicle test. It will be held some time in the latter part of February. The idea is to encounter winter conditions of snow, ice and mud to show the capacity of the machines as all-the-year-round vehicles. No details have as yet been determined upon.

A NEW carburettor for either petrol or paraffin is being introduced by the Cremorne Motor Manufacturing Company, of Lots Road, Chelsea, S.W., the main features of which we hope to describe in an early issue. The same company are also interested in the "Cremorne" liquid fuel burner, in which any heavy oils can be utilised. This is made in various sizes, and is proving of value in the Colonies as well as at home.

WE are always glad to welcome any addition to the manufacturing strength of the motor industry in this country, so that it is with pleasure we notice the announcement which is made this week that the Duryea Company, of Coventry, will henceforth manufacture their Duryea Power Carriages entirely in England, instead of importing them from the United States as hitherto. The well-known engineering firm of Willans and Robinson, Limited, of Rugby, are to be responsible for the construction of the engines and machinery of the new cars, which will contain many novel features.

In a recent issue we referred to the Samson-Hutchinson non-skidding unpuncturable bands, which have lately been put on the market for use in connection with motor tyres. The



bands are made of specially treated hardened chrome leather covering the whole tread and sides of the tyre to which they are permanently solutioned. To this band, along the tread, is rivetted another narrow leather band, the rivet heads, with washers, projecting slightly above the uppermost band. By the use of the bands it is claimed that the bugbear of side-slip is removed and the chances of puncturing considerably reduced. They are made in various sizes for the tyres of motor-cycles and motor-cars and can be fitted to either new or old covers.

LONDON TO RETFORD.

THE day was Thursday, the 29th ult.; the place was the Beaufort Motor Company's, in Baker Street, London, W.; the car was a 14-h.p. Beaufort, and the time of departure was 9.15 a.m. The roads were heavy with the rain which had fallen all night and up to eight o'clock the same morning. Mr. Clark, the motor repairer, of Retford, was installed in the front seat, the mechanic was planted in the tonneau, with instructions to make himself as comfortable as possible. Mr. H. Beaumont, of Honley, Yorks., took charge of the wheel.

Being in the hands of a careful driver, to whom the streets of London were not familiar, the car was started and driven on the second gear past Regent's Park, through St. John's Wood, and into Finchley Road, where the top gear was slipped in on the rise, and not changed down again for any gradient the whole of the journey through with the exception of Great Gonerby Hill, north of Grantham. Owing to the exceptional rains, the roads were covered with water in several places for a few inches deep, but the car slid merrily through until about two or three miles out of Biggleswade, when there was a miniature lake of about 18 inches deep.

Not realising the depth and consequent weight of water which had to be displaced, as the car buried itself over the axles, Mr. Beaumont dashed her boldly into the lake and pulled up the engine. The mechanic tried to start her up from the top of the front wheel springs, but could not get the requisite pull on the starting handle. Just as there was a discussion as to who should strip and wade, a kindly waggoner with an eye to business came along, and with the aid of a rope fastened to the back of the wagon towed the car on to dry land. A few miles further another sheet of water was encountered about 15 ins. deep, but, warned by previous experience, the low gear was put in and the car splashed through without any more trouble.

The next stop was Stamford for petrol and light refreshments. The time of arrival was 12.55, thus 89 miles was covered in 3 hrs. 40 mins. Retford was reached at 3.55. Total mileage 145 miles in 6 hrs. 40 min., including the 3-hour stop at Stamford and about 10 minutes lost when the water caused the involuntary stop. The splendid manner in which the engine pulled up Barnet Hill, Stevenage, Alconbury, Norman Cross, Wansford, the twenty hills from Stamford to Grantham, and Tuxford Hill, between Newark and Retford, was a revelation of the merits of the car.

THE Birmingham Motor Express Company, Limited, are running a service of cars from New Street to Fountain Road.

MAIDENHEAD tollgate, thrown into the flooded Thames after the freeing of Maidenhead Bridge at midnight on Oct. 31, has been found by the lockkeeper at Boveney, near Windsor.

A HANDICAP race was held by the Moto Club Anversoiois on the road between Putte and Hogerheide, near Antwerp, on Sunday last, the distance being 16 kilometres. The car class was won by L. Eskamp on a Gobron-Brillié car in 15 min. 46 sec., while Verstrepen on a Minerva headed the motor-cycle section, covering the distance in 14 min. 45 sec.

EDWARD WHITEHEAD, motor-car driver, of 10, Lexham Mews, Kensington, W., has been charged before the Wigan county justices with the manslaughter of a five-year-old boy named Tonge, near Wigan, on the 26th September. After hearing evidence the Bench was of opinion there was not sufficient evidence to warrant the justices sending prisoner for trial. Whitehead was then discharged.

THE president of the Surveyors' Institution thinks that the making of roads is now the question of pressing importance. Mr. Buck advocates that the great highways should be under the jurisdiction of county highway boards, and that certain roads of more than county importance should be regarded as national roads, and maintained out of imperial funds. Automobile developments are making the whole question of acute importance.

THE JACKSON COVERT CAR.

UNDER the name Jackson Covert, Messrs. R. Reynold Jackson and Company are introducing a new light car into this country. It is of American construction and comprises, as will be seen from the accompanying illustration, one or two special features in design. The frame is constructed of channel steel, in the front part of which is located a vertical water-cooled single cylinder engine of the De Dion type which develops 6-h.p. It has two internal fly-wheels,

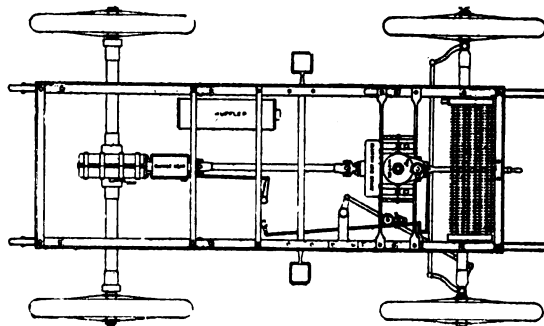


Fig. 1.—Plan of Car.

and attached to the crank case is an additional aluminium case containing the combined brake and clutch, Fig. 2. By pressing a pedal slightly the clutch C is disengaged from the fly-wheel B, which is secured to the motor shaft, and by pressing the pedal still further the leather band on C is brought into contact with the drum A, thus acting as a brake. A spring is fitted which causes the clutch to return to its place immediately the pedal is released. This spring also takes up all end thrust of the driving shaft. The cardan joint D is fitted with ball-bearings that reduce to a minimum the end thrust of the clutch. As will be seen from Fig. 1, the power is conveyed through a longitudinal shaft and bevel gear to a live axle. The gear box is placed

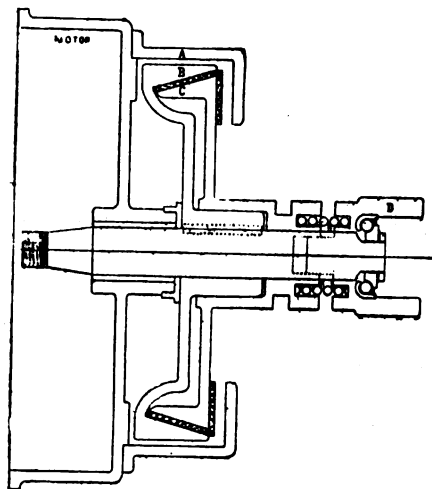


Fig. 2.—The Combined Brake and Clutch.

at the rear near the bevel gear; the change gear is of the sliding pattern, giving two speeds forward and a reverse. It drives direct on the high speed, while the slow speed has a ratio of $2\frac{1}{4}$ to 1 to the high speed. In addition to the combination clutch and brake, a band brake on the differential drum is also provided. The petrol tank, which holds six gallons, is placed underneath the seat, while the water tank, holding four gallons, is attached directly to the dashboard.

THE Southern Motor Club will hold a series of Sunday runs during November as follows:—15th, to Brighton; 22nd, to Southsea; 29th, to Westcott.

CORRESPONDENCE.

CRACKED CYLINDERS.

TO THE EDITOR OF *The Motor-Car Journal*.

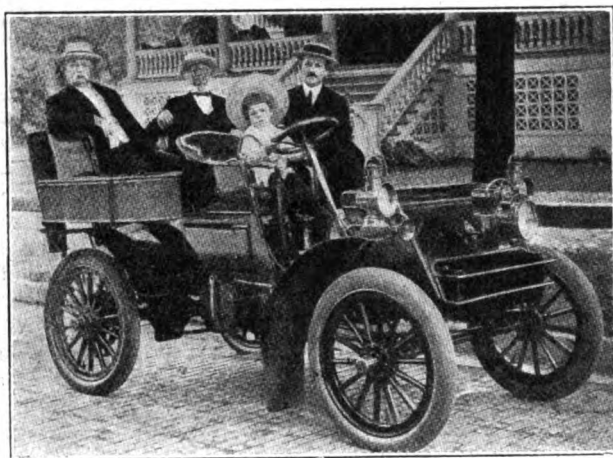
SIR,—Having failed to rust the crack in the water-jacket of his engine with sal ammoniac and iron filings, I would recommend your correspondent to try the remedy of painting over this with a little red lead mixed with gold size, and allow to thoroughly dry, giving two or three coats. If this should fail, a small "patch" of sheet metal may be put over the crack, fixed with small screws. A little of the red lead and gold size, mixed in a paste, should be placed between the patch and the jacket. This repair can be made very neatly if fixed with small round-headed screws.—Yours truly,

T. J. H.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A correspondent enquires about a cracked water jacket on his engine. I have tried the sal-ammoniac and iron-filings dodge. It will hold sometimes on some jobs; but I have never found it to answer on a motor-car engine. I have stitched cracked water jackets with copper that have lasted for years, and are still as sound as ever. I have mended some cracks as long as 6 in. and 8 in. in length —Yours truly,

J. SUGDEN.



Four Generations in a Motor-Car.

[Motor Age.]

PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be glad to know if there is such a thing as "stale petrol"; if it deteriorates at all by keeping, say, six or more months in unopened airtight cans? Also, if a car is not in use for, say, a month with its tank full of petrol, has that petrol lost any of its explosive power, and what would be its effect on the engine—different, if any, to "fresh" petrol? Am I right in concluding that petrol is petrol, so to speak, in every respect, like paraffin, whether exposed to the air or not and whether "old" or "new," and just as effective when used through a carburettor to drive the engine of a motor-car? If I am not right, will you (or perhaps the distillers will) please explain to me—and others—what results we may expect from an engine if driven with petrol termed "stale"? and the difference, if any, between stale petrol and "old" petrol kept in unopened "cans" for, say, six months when a large quantity is stocked?—Yours faithfully,

B. J. W.

[Petrol is a mixture of the lighter paraffins, and should consist chiefly of that one of the series known as "heptane" C_7H_{16} , which has a boiling point between 98 deg. and 99 deg. Heavier and lighter members of the same series are, however, always present, such as hexane, C_6H_{14} , which boils at 70 deg., octane C_8H_{18} , 124 deg., and their isomers. American gasoline, a lighter product, is said to consist chiefly of hexane and isohexane. It is therefore evident that petrol is not homogeneous, and is liable to part with its lighter constituents by evaporation sooner than its heavier ones, increasing its specific gravity in the process, which ends in what we know as "staleness"; while the better the quality of the petrol, i.e., the less the proportion of these heavier and lighter constituents to those of medium density, which form the bulk of the spirit, the less is its liability to staleness. It follows that petrol undergoes no change of any importance when kept in a closed vessel, whether a can or the tank of a car, if this is airtight, and is none the worse for age *per se*. Stale petrol—petrol from which the lighter constituents have fled—gives trouble in surface carburettors

owing to the remaining constituents vaporising less easily; it is, however, really slightly better in fuel value, and in well-designed spray carburettors, which give a finely comminuted spray, has no ill effects, and we are inclined to believe that it is far too often made an excuse for poor running due to quite other reasons.]

OVERHEATING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Perhaps some of your correspondents could help me to overcome chronic overheating in my motor (De Dion). The pump is efficient, and throws a stream over 10 ft., but, nevertheless, after travelling about three miles at fast speed the engine invariably stops from heat, though the water in the tank never boils. These symptoms came on suddenly about two months ago. I have tried the following unsuccessfully:—(1) Complete repairs to pump; (2) new coil and auto-trembler; (3) new piston-rings and cleaning cylinder; (4) scraping the radiator; (5) new joints throughout the circulation. The mixture is perfect, and so is the pump. I begin to think that the defect must be due to "furring" of the cylinder jacket, though there is only a thin coating of rust visible.—Yours truly,

"OPOSSUM."

[We think "Opossum's" trouble from overheating is due to the "furring" of the water jacket, or, failing this, a stoppage in the return pipe from the radiator to the tank. This would cause steam to generate in the head of the jacket, and so in turn cause enough pressure to prevent the pump from keeping up the water supply. We should advise our correspondent, in the first place, to take off the cylinder, remove all the plugs, and scrape away all possible sign of furring, more especially around the valve chamber. In the event of this failing, the inside of the water tank may be found "furred" or choked around the return pipe from the radiator; this in all probability is the cause.]

A COMPLAINT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—One Sunday, about two months ago, a gentleman called at my house for petrol, saying he had lost part of his horn, and had been stopped by the police. Could I sell him one? Not having one for sale, I lent him the horn of my own car, which he promised to return the next day. That horn has never come yet, and is likely doing service to the gentleman who was riding a motor-cycle.—Yours faithfully,

WILLIAM DUNN.

Newcastle-on-Tyne.

IN A TRAP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you allow me to put my case before your readers? On Sunday last, while out riding with a friend, we came upon a police trap a mile outside Uxbridge. My friend was about 50 yards in front of me. The police signalled for him to be stopped. I was pedalling my motor-cycle, as it would not fire through a short circuit. When I came to the police they stopped me. I was not going more than seven miles an hour, as your readers will know, pushing a motor-bike, 120 lbs., with exhaust valve closed, slightly up-hill. The constable asked for my name and address, which I refused to give, because he did not know how fast I was going until he saw the one at the beginning of the trap. Some gentlemen were there whom I have got addresses from. The constable has found my address to-day, and is going to charge me with furiously driving a motor, which I was not doing, as I was pedalling it; also with refusing my name and address, which I did not give on the grounds that I had not committed any offence. Would any reader advise me in this matter? I was summoned at Chertsey and fined some time back for "towing" a gentleman, who was riding by my side. My advice to motorists now is to walk beside their car or cycle through a trap, and not to walk too fast and not too slow, or else the police will have the victim up for loitering.—Yours truly,

ARTHUR P. TYLER.

PRIVATE TOUTING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—All *bona fide* traders are indebted to Mr. Austin, of the Wolseley Company, for his letter on this subject. We have long known of the nuisance referred to, and our only course where no redress could be had was to cut adrift such firms as "tout" to private persons. The business is not, from a dealer's point of view, a lucrative one. We have stock to keep, and it may very likely happen by the end of the season that that stock has dropped so much in value that any profit we have made is lost in this other direction. Often at the end of the season prices for stock have to be accepted much below value, and if makers wish to do business through the *bona fide* trader, they will have to give them better support than they have done in the past.

Makers and dealers, before quoting to any firm or individual, should satisfy themselves that they are dealing only with those who are in the business, and by that we mean firms who keep stock and a thoroughly-equipped repairing shop. A list of these traders or agents in Scotland

can be had from the Secretary of the Scottish Motor Manufacturers and Traders' Association. It has been our misfortune, and no doubt others as well, to find, on introducing a particular make of car, that our client has bought it through a small cycle agent, less 5 per cent.

The dodging and scheming tried by "touts" to secure business would be amusing if it were not so serious. It remains for the makers and dealers to say if it is to continue. As dealers we shall expect to know from the makers, either by letter or advertisement, who are, and who are not, the friends of—Yours truly,

BONA FIDE TRADERS.

MOTOR-CYCLE SIDE CAR EXPERIENCE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the letter from me which you published in your motor-cycling column last week, I hasten to say that the whole incident, which might have caused a serious accident, occurred through my steering handle being loose. No one, neither the makers of the side car nor of the motor-cycle, were to blame in any way. I shall be very much obliged to any of your readers who will relate their experience with side car attachments. Seeing the double weight attached to motor-cycles I would like to know if the ordinary brakes provided can be relied upon. I intend to proceed to South Africa shortly, where roads are up and down hill. Is there anything to be suggested or have any improvements been made?—Yours truly,

J. VAN ZWIETEN.

THE TYRE QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—There is very little doubt that the expense and worry of pneumatic tyres prevent a large number of people from becoming purchasers of motor-cars. The expert motorist, as well as the inventor, is always looking for a tyre that cannot be punctured, but no one has really produced a tyre absolutely proof against punctures or collapse in some form or other. The greatest objection, in my opinion, to the best pneumatic tyre is its uncertainty. It is very little use telling customers that this tyre has travelled 1,000 miles, more or less, without a puncture, or without requiring pumping up. I may use this identical tyre and get it punctured in less than 1,000 yards, and there is no guarantee against such failures, which are known, without exception, to every motorist and to the public generally; apart from the worry and expense, there is the continued uncertainty of the occupants of the car not knowing what is going to happen next and where they may be stranded, which no foresight on their part can prevent. This is where the pneumatic tyre differs from the general mechanism which the public now realise in most high-class cars is perfectly reliable, and that it is simply a question of tyres as to whether they adopt the motor-car in preference to the carriage or not. If they felt that the tyres were as good as the motor-car, we should have no difficulty in doubling the number of motorists in a very short time.

Some of the manufacturers boldly say that their cars run as well on solids as on pneumatics—those manufacturers appear to be doing the largest business, simply because they are meeting the public demand, and I venture to suggest that the solution of the problem lies in adopting a good solid tyre that is comfortable and reliable at high speeds, and that such a solid tyre, in conjunction with a properly sprung car, is what the carriage users require.

Far more attention ought to be given by the manufacturers of motor-cars to springs; it is not a question of length of springs, but a question of length and flexibility and position, and an excellent addition would be a rubber-lined shackle, as used, for instance, on carriages and hansoms. Motor manufacturers are a long way behind the builders of horse-drawn vehicles in respect to springs, for the latter can make a carriage run with every comfort on iron tyres, and the only reason why some carriages are fitted with rubber tyres is because of the silence in running; the springs are so good in some cases that there is little or no difference in vibration whether solid rubber tyres or iron tyres are fitted. Motor-car manufacturers should combine with well-known carriage spring manufacturers and carriage builders with regard to the matter of resilient springs, and the position they should be fitted on a motor-car to give the best results. A car properly sprung would run better on solid tyres and the upkeep would be less, and the comfort and absence of worry more pronounced than with the best pneumatic tyre yet produced, and all that bouncing over holes in the road and level crossings would be done away with. This is one of the greatest objections a carriage user finds; he is generally a man of ease who prefers to be driven at a moderate pace and not to be swayed to and fro and bounced up and down on pneumatic tyres, but he wants a reasonable amount of resiliency from his springs and tyres.

In advocating the abandonment of pneumatics in favour of solids a great deal of opposition will be met by those interested; but if motor car manufacturers who are not interested in pneumatic tyres will only realise what the public want, I feel sure they will produce a reliable and comfortable car, and overcome the prejudice worked up by some motorists against solid rubber tyres, and do the largest business by supplying what the public want in the way of a comfortable and reliable car fitted with a good solid rubber tyre. I notice firms who are working in this

direction are progressing most rapidly both in England and Scotland.—Yours truly,

A MECHANICAL ENGINEER.

SILENCER.—J. E. A. asks for advice as to a really efficient silencer. At the present time he has one about six inches in diameter, running lengthways of the car. There is not sufficient room for one of a larger size in the same position; the only place it could be fixed is under the back of the car cross-ways.

GOODWIN AND Co.—The engine you refer to is probably the Aster, full particulars of which you will get from the Begbie Manufacturing Company, Limited.

ALUMINIUM WIND SHIELDS.—Mr. F. White writes:—"With regard to the enquiry in your issue of the 7th inst., I may say that having dealt with Messrs. F. Braby and Company, aluminium merchants, Euston Road, N.W., in wind shields, bonnet guards and bodies, I have always found them to be very satisfactory, and one can depend on an order having prompt attention. I might mention I have no interest in the above firm." Mr. W. T. Edwards, carriage builder, Ashford, also writes that he makes aluminium wind shields.

HEAVY MOTOR TRAFFIC.*

By E. SHRAPNELL SMITH.

It is proposed that this paper shall deal with some phases of the application of self-propelled vehicles to the conveyance of goods on common roads. The strict meaning of the word vehicle—i.e., a carrier, but not a tractor—will be observed. This branch of automobilism has had an interesting life, though an acquaintance with the factors which limit its scope, and with the records obtained during the past six years, provides occasion neither for regret nor despondency. The history of the revival of the light locomotive, or motor-wagon, is brief, its leading stages in chronological order being:—

1895. *December 10th*.—Resolutions adopted at Cannon Street Hotel, under chairmanship of Sir David Salomons, Bart., to form the Self-propelled Traffic Association.

1896. *October 1st*.—Presidency of Liverpool Self-propelled Traffic Association formally accepted by the Earl of Derby, K.C.B., at Liverpool Town Hall. *October 26th*.—Inaugural address to L.S.P.T.A., at the Liverpool Royal Institution, by Sir David L. Salomons, Bart. *November 14th*.—Locomotives on Highways Act, 1896, came into operation.

1896–1897. *November to March*.—First session of Heavy Motor Traffic papers at Liverpool Royal Institution.

1897. *June 10th*.—Royal Agricultural Society of England Trials at Crewe produced one competitor—a Leyland van.

1898. *May 24th–27th*.—First Liverpool Trials of Motor Vehicles for Heavy Traffic. Four vehicles competed—Leyland, Lifu, and Thornycroft (2). *December 14th*.—Fusion of the L.S.P.T.A. with the A.C.G.B.I.

1899. *July 31st to August 2nd*.—Second Liverpool Trials of Motor-vehicles for Heavy Traffic; six vehicles competed—Clarkson, D. Coulthard, Leyland, Straker, and Thornycroft (2).

1900. *December 3rd*.—Inaugural address of fifth session L.S.P.T.A., at St. George's Hall, Liverpool: "Heavy Motor Traffic in France" (with lantern and cinematograph illustrations), by M. Georges Forestier.

1901. *March 15th*.—Resolution in favour of increased tare weight passed at annual conference of the Associated Chambers of Commerce of the United Kingdom. *May 31st to June 8th*.—Third Liverpool Trials of Motor-vehicles for Heavy Traffic. Eleven vehicles competed—Coulthard German Daimler (2), Leyland, Mann (2), Musker (2), Simpson and Bibby and Thornycroft (2). *December 4th–21st*.—War Office Trials of Motor-vehicles for Military Purposes, at Aldershot. Five vehicles competed—Foden, German Daimler, Straker, and Thornycroft (2).

1902. *January 8th*.—Liverpool Fire Insurance Committee approved use of motor-wagons at Liverpool Docks and warehouses, including cotton sheds, without additional premiums.

The principal distinguishing feature is that the motor-wagon is generally employed without a trailer, and never with more than one. This limitation not infrequently renders the motor-wagon less economical than the traction engine and its three or more trucks, e.g., where regular loads of 20 tons or more per trip are available, and particularly in the absence of back loads.

The three Liverpool Trials advanced the motor traffic movement in this country to a stage where a commercial test became necessary. Steps were taken, after the reception of the judges' third report, in October, 1901, to form a private syndicate to make a preliminary experiment to secure data for later operations. The scheme was, naturally, unattractive from the financial standpoint, for the majority of those who were invited to subscribe anticipated being sacrificed as pioneers. In any event, £20,000 was put up, principally in Liverpool, by February, 1902, when ten steam lorries were ordered for the work. This number was subsequently increased to fourteen. These machines, then, were brought into service gradually between August and December, 1902, the makers giving late

* From a paper read at the Automobile Club on the 5th inst.

They do not recommend the Local Government Board to prescribe a ten-mile limit, as they are of opinion that under the enactments of the Act (independently of Section 9) adequate protection is given to the public. Favourable consideration is to be given to the applications of local authorities for the erection by the County Council of caution boards at the entrance to towns or villages, and also at dangerous corners or curves on main or district roads.

FORFAR.—The Forfar County Council have agreed to the scheduling of a list of roads about fourteen miles in length.

DEVON.—At the last meeting of the Barnstaple District Council a sub-committee recommended that the County Council should schedule all their district roads at places on which cars should not travel more than ten miles an hour. These highways were narrow and most of them steep. They also recommended that the same rate should apply to all villages and hamlets, and all roads where there was not a breadth of 16 feet, and also to such places as might hereafter be designated as dangerous places. Another recommendation was that in passing every single cottage the rate of motor-cars should not be greater than ten miles an hour, but on consideration the Chairman of the sub-committee did not think this a practical arrangement. It would involve notice boards being so frequent that a heavy expense would have to be incurred, and, apart from that, familiarity with the boards would lead to persons disregarding them. It would be better to leave this matter to the common law, which said that a person should not drive to the danger of the public. Ultimately the recommendation was adopted with the elimination of the proposal to slow down on passing single cottages, and the addition of forbidding cars to travel on the road from the Blue Bull, Countisbury, to Lymouth Bridge.

Co. DOWN.—The Down County Councils have approved of the motor-car regulations proposed to be issued by the Irish Local Government Board.

The Cycle and Motor Trades' Association has suggested to the Local Government Board the advisability of amending their proposed regulations in the direction of insisting upon only one identification-plate being illuminated; of reducing the fees for re-registration; of supplying the plates free, and with regard to the record book to be kept by manufacturers in connection with vehicles used on the public highway in accordance with Clause 14.

THE MIDLAND AUTOMOBILE CLUB.

THE results of the official hill-climbing handicap, held by the Midland Automobile Club on September 12th, have just been issued as follows:—

Entry No.	Name of Driver.	Car.	Weight of Car.	Weight of Passengers.	Cylinder Dimensions.	Time of Ascent.	Result.	Points.
					S. D.	Min. Sec.		
8	H. Luff Smith	10-h.p. Wolseley.	2072	532	5 x 4½	1 27 2/5	Gold Medal 1st.	33
12	Harvey du Cros.	12-h.p. Ariel	2212	616	3½ x 3½	1 22 4/5	Silver Medal 2nd.	35
3	H. A. Holder	16-h.p. Dietrich.	2520	616	m m 120 x 104	1 11	3rd.	36
4	C. W. Dixon	10-h.p. Lancaster.	2408	644	5 11/16 x 5-25	1 58 1/5	4th.	37
6	M. A. Lawrence.	10-h.p. Lancaster.	2380	700	5-7 x 5-25	2 2	5th.	39
7	E. J. Hartenfeld.	10-h.p. Lancaster.	2408	616	5 11/16 x 5½	2 1 2/5	6th.	40
10	A. E. Crowdy	20-h.p. Wolseley.	2912	532	5 x 4½	1 16	7th.	44
1	J. A. Holder	24-h.p. Panhard et Levassor.	2436	616	5½ x 4½	1 9 4/5	8th.	54

POLICE TRAPS.

THE well-known traps at Send, Ripley, and Shottermill have lately been in active operation, Sergeant Jarrett being in charge of that at Ripley.

THERE is a police trap about a mile the other side of Uxbridge from London.

THE Bagshot and Sunningdale districts should be negotiated carefully by the motorist not desirous of being trapped.

A NICELY devised police trap has been laid on the road into Beaconsfield from the Metropolis.

CLAIM AND COUNTER CLAIM.

A CASE has come before Mr. Justice Channell, sitting without a jury, in which the plaintiff was Mr. Paris Singer (trading as the City and Suburban Electric Carriage Company), who sued the defendant, Mr. J. F. Ochs, to

recover £194, balance of an account for work done and materials supplied in the repair and alteration of an electric Surrey motor-car. The total amount of the plaintiff's bill was £253, but £59 had been paid on account, leaving the balance sued for due. The defendant denied indebtedness, and counter-claimed the return of the £59 paid on account, and damages for the detention of the car from February to August, 1902. After hearing counsel on both sides, his Lordship gave judgment for the plaintiff on the claim for £189, and for the defendant on the counter-claim for £150, and as he said the bulk of the costs had been caused by the counter-claim, he allowed the defendant his full costs and limited the plaintiff's costs to £40.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
London :	Miss Levitt, New Burlington St., W.	—	£5, etc.
Marlboro' St.	H. Sinclair, Westminster	—	£2, etc.
"	H. Cook, Shepherd's Bush	30	£3, etc.
"	H. Powers, Watford	—	£2, etc.
"	B. Goorschalki, Hampstead	—	£2, etc.
"	J. Cox, Wardour Street, W.	—	£2, etc.
"	H. Sewell, St. John's Wood	—	£2, etc.
"	R. H. Wilding, Bromley, Kent	18	£8 4s.
"	" " " " " "	18	£3, etc.
Wetherby	J. W. Bottomley, Leeds	—	Dismissed.
Chertsey	P. Brydone, Surbiton	—	£1, etc.
"	J. H. Carroll, Sonning	—	£5, etc.
"	W. Jolly, Kensington	—	40s., etc.
"	G. Bull, Farnborough	25	£2, etc.
"	D. Lebreton, Addlestone	—	Dismissed.
Woking	D. Stewart, Croydon	19	£3, etc.
"	J. Watkinson (driver to Mr. A. Harmsworth)	—	£3, etc.
Worthing	E. Hives	22	£3, etc.
Midhurst	T. C. Smith, Oxford Circus, W.	20	10s., etc.
"	J. R. Cooper, Liss	—	10s., etc.
Lewes	A. Brown, Victoria, S.W.	25	Dismissed.
Steving	F. E. Charles	—	£5, etc.
"	H. S. Westcott	—	10s., etc.
"	R. Polgate	—	£5, etc.
Farnham	A. Dickinson	24	£2, etc.
Swainsthorpe	H. Winch, Westminster	—	5s. etc.

IN the cases heard at Knaresborough the police confessed to taking the time of motorists on the measured distance by ordinary watches.

MOST of the defendants at Marlborough Street (London) police court were summoned for exceeding the twelve mile speed limit with their motor-cars in Hyde Park. They admitted this but declared that their speed did not reach twenty miles an hour.

AT Mansfield, A. F. Houlton was charged with furiously driving a motor-car on the night of the 21st of October. Superintendent Hensley deposed that on the night in question about 10.15 he was driving along Mansfield Road, in the parish of Sutton-in-Ashfield, in company with P.C. Dennett, when he heard something coming along at a rapid rate behind them. He drew his trap up to within a foot of the left side of the road, when someone in a motor-car rushed past between the trap and the hedge. The car went towards Mansfield. When in Mansfield witness caused inquiries to be made, as the result of which he was satisfied that the person driving the car was Mr. Houlton. Mr. C. E. Lucas called the defendant, who stated that he left Sutton at 10.15, and was in Mansfield Market Place at 10.34. It therefore could not have been his car that passed Superintendent Hensley. The Bench stated that they were not satisfied with the evidence, and therefore dismissed the summons.

THE magistrates in attendance at the Fareham Police Court (Colonel H. R. Farquhar, Colonel R. H. Martin, C.B., C.M.G., and Mr. J. Sandy) have had before them a case in which Mr. T. Mattison, of Southsea, was summoned for driving a motor-car at an excessive speed in the Havant Road, Cosham, on the 18th October. P.C. Stockwell said that on the day in question he saw defendant driving a motor-car at the rate of 22½ miles an hour. Defendant gave evidence and said that no expert could get more than 16 miles an hour out of the car on the second speed with two people up. On this occasion the car had five occupants. An independent witness named Albert W. Palmer, of Portsmouth, said that he and a friend were out cycling on the day in question and he saw a car stopped on the Havant road. It was not going any more than twelve miles an hour, and it was stopped within three or four yards of the constable. Harold Kemp, of Southsea, corroborated this evidence. The Bench, however, considered the case proved, and fined defendant £2 including costs.

THE Motor-Car Journal.

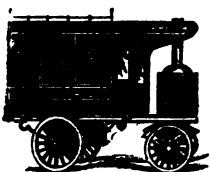
VOL. V.]

LONDON, SATURDAY, NOVEMBER 21, 1903.

[No. 246.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE watchfulness of the railway companies with regard to automobilism shows no sign of slackening. Now we learn that the North Eastern Railway Company have introduced an innovation in their parcels department in the shape of a petrol motor delivery van, which, with the exception of the tyres and a few small parts, has been constructed entirely at the company's own carriage works at York. It is at present being subjected to vigorous tests, and if it comes out satisfactorily the idea will be extended, and these vans will be built for parcels delivery and collection, not only in York, but in Newcastle, Darlington, Stockton, Leeds, and other large towns served by the system.

Motor Vans.

FROM passenger 'buses to motor delivery vans is a natural step, and now that a northern railway has led the way many of the others are certain to follow. When once the great railway concerns realise the part that the motor-van can play in the economy of business the success of the movement is assured. Evidently such a time is coming nearer. Meanwhile other companies are awaiting the results of the delivery van trials to be organised next year by the Automobile Club.

Cylinder Capacity.

FOLLOWING a paper which bore signs of hurried preparation, there was an interesting discussion at the A.C.G.B.I. on Thursday of last week. Elsewhere a summary of Mr. Crawley's views on cylinder capacity is given, and in initiating the conversation Mr. Lyons Sampson, who was in the chair, reminded us of that busy day at Naas when the competing cars in the Gordon Bennett race were "weighed in." As the clerk of the scales, Mr. Sampson was responsible for a very onerous piece of work, and he confessed that the limit of maximum weight with the cars unladen did not work out with the sweet simplicity that had been anticipated on paper. There was great difficulty and delay in ascertaining the weight—a delay partly due to the fact that all calculations had to be made on the spot, nothing having been previously prepared. One thing and then another had to be taken off, and one car that was weighed without its mud-guards raced with them on.

On Racing.

MR. H. AUSTIN, of the Wolseley Company, was the next speaker, and was originally against the weight limitation, but could not see a better way. The object was to eliminate freaks; but had that been secured? At the same time the limitation of the cylinder capacity would not achieve the result desired. He asked if it was a good thing for the Club to foster racing; that was a matter which should be left to the trade,

unless the trade element was eliminated and it was made obligatory that owners should race their own cars and be unconnected with the trade.

The Club Discussion.

AFTER Mr. Bircham had pleaded for private owners as well as makers to have a chance in racing, Mr. H. Sturmeay urged the necessity of securing closer conditions of rating. This, he did not think, would be the result of the proposals made by Mr. Crawley, and suggested that possibly cars might be classified on the brake test, this to be made before the engine was put into the car. Mr. M. O'Gorman referred to the various proposals made, and thought cylinder capacity the least satisfactory of all. Mr. S. F. Edge threw out the suggestion that a number of gentlemen should get together and agree as to the design of a racing car, inviting makers to tender for its manufacture. He criticised the figures in the paper as to the weight of the body suggested for the chassis. Colonel Crompton closed the discussion, remarking that they should obtain the definite relation of road speed to piston speed; then the rating of cars would become a simple matter. On the motion of the chairman, seconded by Sir Hickman Bacon, Bart., a hearty vote of thanks was accorded to Mr. Crawley, whose reply closed the proceedings.

The Gordon Bennett 1904 Team.

REVERTING to Mr. Austin's remarks on racing we would here give publicity to a suggestion he makes with regard to the eliminating contest for the next Gordon Bennett Cup team. "By all means," he says, "let us try to get back the Gordon Bennett Cup, but at the same time let us be sensible enough not to waste capital, which in itself is bad for the industry, by building an unnecessary lot of cars for a competition among ourselves as to who should represent us in this International contest. I still feel most strongly that the safest, the most economical, and the best results could be obtained by the Club if they were to nominate three of our leading manufacturers to build one car each, under the supervision of a small committee to be appointed by the Club. To have any chance of winning next year's Gordon Bennett we shall have to build a car which will be quite useless for anything but a speed contest; and we ought to do as little of this as possible if we are to husband our resources."

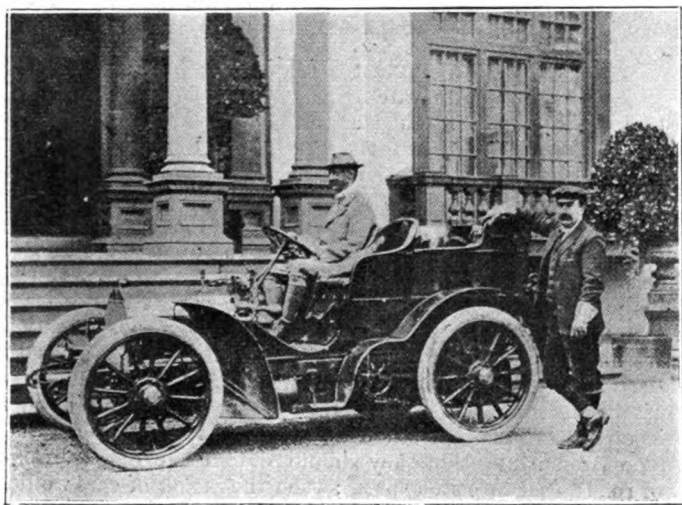
The Hampshire Motor Union.

THE Hampshire Motor Union is taking advantage of our advertisement columns to bring itself to the notice of motorists within the area of the county. There is no doubt that the early coming into operation of the Motor Car Act will establish a necessity for local activity, and it is gratifying to know the first of these county organisations should have such an experienced motorist as the Hon. J. Scott Montagu, M.P., as a member of its executive committee, others associated with him including Colonel Willan, Admiral Sir John Fullerton, Dr. Aldridge and Mr. J. Bonham Carter, and Mr. J. C. Warner, of

Winchester, as secretary. The Union will establish a defence fund to protect its members from the consequences of police persecution and magisterial prejudice, and also bring its influence to bear upon local authorities for the improvement of the roads and other matters which appeal to motorists, in common with all users of the highways. Every motorist in Hampshire should lose no time in associating himself with this hopeful movement.

Colonel Astor.

THE suggestion of the Lord Chief Justice Clerk of Scotland that motor-cars should be named as well as numbered finds illustration in the United States as well as at home. Colonel J. J. Astor has a garage with ten cars comfortably housed therein at his residence at Rhinebeck-on-Hudson, and all



Col. J. J. Astor on his Mercedes.

the vehicles have their pet designations. The car used for station purposes is the "Ark," and others include the "Tub" and the "Go-cart." At his city garage the Colonel has accommodation for another half dozen vehicles, the whole being under the supervision of B. Morgan, who obtained his automobile experience in the old country. Just now Colonel Astor is busying himself in a movement for the construction of a motor-car track near the golf links at Newport, U.S.A.

To Midland Authorities.

THE Wolverhampton and District Automobile Club have issued a circular letter to all local authorities within a radius of about forty miles, in which they submit that adequate protection is already given to the public by the Common Law and by the provisions of the Motor Car Act, 1903, by which Act all motor-cars are required to be numbered and registered, without the Council exercising the powers which will be conferred on the Local Government Board under the new Act, and requesting the Councils not to suggest imposing further restrictions upon the drivers of motor-propelled vehicles. If, however, the Council is of opinion that the travelling public are not sufficiently protected, then the Committee request the Council not to recommend the closing of any roads to motor-cars or the reducing of the speed limit at which they will be permitted to travel under the above Act, until an opportunity has been given to the members of the Wolverhampton Club to drive councillors over the roads which they consider should be closed to motor-cars, or upon which, in their opinion, the speed limit should be reduced, and to demonstrate the ease and safety at which motor-cars travel over narrow and tortuous roads, and how apparently difficult and dangerous places are negotiated without danger to other users of the highway.

Recognition from the War Office.

THAT the Motor Volunteer Corps is known to the War Office is apparent from the fact that for the first time in the history of military examination papers a question has just been set in the Topography paper for Promotion Examination for Captains, in which it was stated that a motor-car was available for reconnoitring purposes. By the way, the annual dinner of the Motor Volunteer Corps will take place at the Trocadero, London, on the 8th prox.

18 Miles an Hour.

OUR list of cases of alleged furious driving has suffered a little owing to the variability of the weather, and the scantiness of the list is not due to any lessened police vigilance. A reference to the cases shows a peculiar magisterial vision in view of the early legalising of a speed of twenty miles an hour. In only one case was the defendant charged with attaining a speed of more than thirty miles an hour, and that was "not proven." In four other cases the speed was estimated by the police themselves at not more than eighteen miles, while in three instances speeds of twenty miles an hour were alleged, and in three others only one mile above that was stated. After January 1st most of such cases will be dismissed—if taken into court—and it is clear from the many summonses issued in connection with speeds of about a score of miles per hour that the line between conviction and innocence will be a very fine one. It is to be hoped it will not be unduly strained by magisterial prejudice.



One of eight Leyland Steam Wagons for South Africa. (See page 729.)

An Important Secession from the A.C.G.B.I.

THE decision of the Manchester Automobile Club to cease association with the A.C.G.B.I. at the end of the present year is important, especially as it follows an energetic effort to federate the clubs with a central union in which legislative matters will not be mingled with social functions, and the publishing business. There is no doubt that the Piccadilly club is attempting too much, and the heavy fees which have hitherto been extracted from the provincial organisations have proved a drain on the resources of active societies. For instance, the Manchester Club has offered £100 as the price of affiliation—an offer refused by the Club, which wanted a separate fee for each member. As a result of such an attitude, the central organisation casts away an important section, to say nothing of the financial

loss that is incurred. But probably the Manchester Club will be able to utilise the money thus retained in popularising the pastime and in promoting the motor education of its members in the County Palatine.

Is there Preferential Treatment?

MEANWHILE the letter from the hon. secretary of the Reading Club, published on another page, suggests the question as to whether preferential treatment is not meted out to certain clubs by the central body. The idea is an unpleasant one, but the statement he makes as to the terms upon which the Nottingham Club holds its association with the A.C.G.B.I. will probably require some explanation in Manchester.

In the Early Days.

IN view of the Manchester decision and other matters that seem ripe for discussion, the question is being asked, has disintegration set in at Piccadilly, W.? We hope not. The A.C.G.B.I. has been of immense service to the industry, and the tremendous amount of work wisely initiated in the old place at Whitehall Court revealed the enthusiasm of pioneers. But the movement has become something more than the hobby of a few; it is being decentralised and its votaries are found in every town. When they, in their turn, become clubmen, they will not want to sink their local identity. Affiliation, to be popular, must allow for liberty of local action and a certain latitude in policy

Engineers and Motor-Cars.

THERE is no doubt that the motor car industry is becoming one of very great importance, and firms of the best standing in the engineering world are now turning their attention to the development of the automobile. Thus in England we have, to mention a few that occur at the moment, Vickers, Son, and Maxim, Armstrong, Whitworth and Company, Peter Broherhood, Willans and Robinson, are practically interested in the business, and abroad the great firms of Krupp and Hotchkiss have recognised the future of the motor-car by laying down special plant for its construction. The fact that such experienced engineers are now connected with the industry will not only assist the automobile towards a state of perfection, but it will give the public increased confidence in the vehicle itself.

Out of Proportion.

SOME idea of the inconsistency which prevails at London police courts was seen the other day at the South-Western Court, when a motorist driving at between eighteen and nineteen miles an hour was fined 40s. and costs. A few minutes later, in the same court, a carman, driving a horse and van at a furious



The King of Italy, who has paid a brief visit to England this week, is, like King Edward, an enthusiastic motorist. Above we reproduce two snapshots of His Majesty in his Fiat Car at the recent Italian Manœuvres.

[La France Automobile.]

generally. In the development of county unions such as that which has been inaugurated in Hampshire—a county we have had to speak of with severity on more than one occasion—there is much hopefulness. One thing is certain, that, whether affiliation is to be the burning question of discussion or not, automobilism is not likely to delay while contestants discuss.

The Medical Aspect of Motoring.

So many medical men now use the motor-car in their daily practice that there should be available a large fund of information with regard to the effect of motoring on health. This is an aspect of the matter to which less attention has been given than might have been expected, and we are glad to hear that the Western Section of the Scottish Club has secured a promise of a paper on the subject from Professor Hugh Galt. This should provoke a useful and practical discussion. Meanwhile the experiences of readers might elicit some points upon which the professor could give authoritative information in his paper.

rate, was fined one-fourth of this amount, although it was said in evidence that he nearly knocked a woman down, and also struck a man's foot. The relative danger in these two cases will be appreciated by all acquainted with the road, and it does seem as though there should be some judicial review of magiserial decisions when such glaring cases of inconsistency are recorded.

A Scotch Reminiscence of the Irish Tour.

IN a lecture before the Scientific Society of Glasgow Mr. Alec Govan has been setting forth the essential points of modern automobiles and discussing some of the problems associated with the mechanical aspects of automobilism. Speaking of petrol, he told a good story which occurred when the route for the Gordon Bennett race was being discovered. One of the officials was detached from the main body of the party and wired that he could not join them as he was unable to start the engine of his motor-car. They knew the gravity of the spirit he was using, and immediately wired to him to try hot fomentations, with the result that he was not long in appearing

before them with his car. With a lucidity of expression that secured a comprehension of the points by his audience, Mr. Govan then went on to describe the carburettor, ignition systems, and the engine, making some interesting comparisons of surface speed between the modern locomotive and a motor-car fitted with petrol engine running at 1,500 revolutions per minute.

Mechanical Matters.

REFERRING to the objections to the high speed engine on the ground of excessive vibration, Mr. Govan mentioned that with the latest devices when the car is in motion on the top gear the vibration from the engine transmitted through the frame is practically nil, the speed of the car acting as a fly-wheel. In hill climbing on the low gear this action is decreased, with the result that the vibration is felt. The best remedy for this would appear to be the multiplication of cylinders—a point incidentally touched upon during the discussion on Mr. Crawley's paper at the Automobile Club last week. Already some makers have placed six-cylinder cars on the market to meet the demand from a certain class of customers. In practice Mr. Govan finds that good results can be obtained when the stroke is $\frac{1}{2}$ inch greater than the bore. Even with the length of the stroke beyond this satisfactory results can be secured, the speed of the engine being maintained by opening the exhaust valve early. Unfortunately there is no exact data available to show if there is any gain in making the stroke much longer than the proportion indicated; but as a general rule it may be taken that the longer the stroke in proportion to the bore the earlier the exhaust valves must be opened. Still, as the stroke is increased within limits greater advantage can be taken of expansion.

Reliability Trials v. Touring Conditions.

HAVING dealt with other technical points, the author went on to more general reference to the subject, and his criticisms, which we publish on another page, will doubtless be read with interest by members of the trade. We are glad to notice the attention he drew to the conditions of the public trials that have been held. By deducting marks for the time occupied for cleaning and minor adjustments which every owner would regard with equanimity, several excellent cars appeared to a disadvantage, as it is well known that vehicles may perform badly through minor temporary defects which, if attended to in time, would result in no trouble whatever. Of course the achievements of those that secured non-stop runs appear all the brighter in comparison, but the fact remains that a few minutes' allowance for cleaning would not be regarded with ill favour by the public, while giving a greater chance to the cars by approximating the conditions under which they are run to those of actual touring experience.

Distinguished Visitors at the Shows.

IN France the authorities have always been lavish in their patronage of automobilism, and the consent of M. Loubet to open the Automobile Salon on the 10th prox. is in keeping with precedent. On this side, too, there is a growing desire to help the movement, and the visit of the Prince of Wales to the Agricultural Hall Show last year gave a decided impetus. It is also anticipated that Royal favour will be again bestowed on the International Motor Car Exhibition at the same hall next year, King Edward VII. having, we understand, been approached in the hope that he will attend on one of the days the exhibition is open.

Outside Schools.

JUST as town councils give preferential treatment to churches in the matter of wood paving, so the Forfar County Council is seeking to enforce a restrictive policy with regard to the roads in proximity to schools. Where schools or school play grounds are on the side of roads, it is proposed

that the rate of speed for 100 yards on each side of the schools shall be limited to ten miles an hour. The intention of the Council is excellent; but the plan by which it hopes to secure its aim is open to question. Had a caution board to be placed at each end of such a stretch of road, we should have had no criticism to offer, but every motorist knows that a speed of four miles an hour is just as dangerous as twenty when children are rushing across the road. While motorists must exercise caution in such circumstances, teachers and parents should enjoin the youngsters to be equally chary of making the public road their private playground. Roads are for the serious business of pleasure, rather than places for the pleasant capers of juveniles.

Hooded Vans.

THE London County Council's proposed bye-law with regard to hooded vans should have no difficulty in securing confirmation, for it is becoming an absolute essential to the safety of those who travel on the roadway. Since 1891 the accidents in London in which hooded vans have figured have increased by 118 per cent. as compared with an increase of about sixty-four per cent. from other causes. This is significant, and unless firm steps are taken to secure that drivers of vehicles have a better outlook on either side the evil will tend to grow rather than diminish.

The Quarterly 100 Miles Trial.

ON Friday, the 13th inst., the quarterly 100 mile trial of the A.C.G.B.I. took place the route including Dashwood Hill, the scene of earlier activities of the club. The entries comprised a 6-h.p. Siddeley car, a 6-h.p. Pick, two Chenard and Walckers of 18-h.p. and 12-h.p. respectively, and a 12-h.p. Cremorne steam car, which unfortunately broke down on the return journey owing to a broken eccentric strap. Of the other cars the Siddeley made a non-stop run; the Pick, which was entered by Messrs. F. Wellington, Limited, had one stop to replace broken sparking plugs; the 18-h.p. Chenard and Walcker had to stop in Southall to take in water, owing to the belt of the fan breaking, while the 12-h.p. of the same type had three stops for ignition troubles. The speeds in all instances were up to the legal limit, and, having regard to the heavy and greasy state of the roads, the performances of the cars were really very creditable to the entrants.

DURING the next few days the regulations of the Local Government Board under the new Motor Car Act will be issued.

WE regret to learn of the somewhat sudden death of Mr. R. Venner, who for about twenty years had occupied the position of secretary to the Royal Agricultural Hall Company, Islington.

ON the Canning Town track, on Wednesday, Ernest Newman made a new fifty miles motor-cycle record, covering the distance in 61 min. 48 4-5 sec., or over 6 minutes less than the previous best.

SUBJECT to ten entries from firms in this country, it is proposed by the Automobile Club to hold trials for electrical vehicles in May, 1904. Draft conditions have been prepared and full particulars can be obtained by intending competitors from the Technical Secretary of the A.C.G.B.I.

WE understand that at least five entries are likely to be received for the Eliminating Test to select the British team in the Gordon Bennett Cup race of next year. This preliminary trial will take place in April next, and further entries will be received by the A.C.G.B.I. up to December 31st of this year.

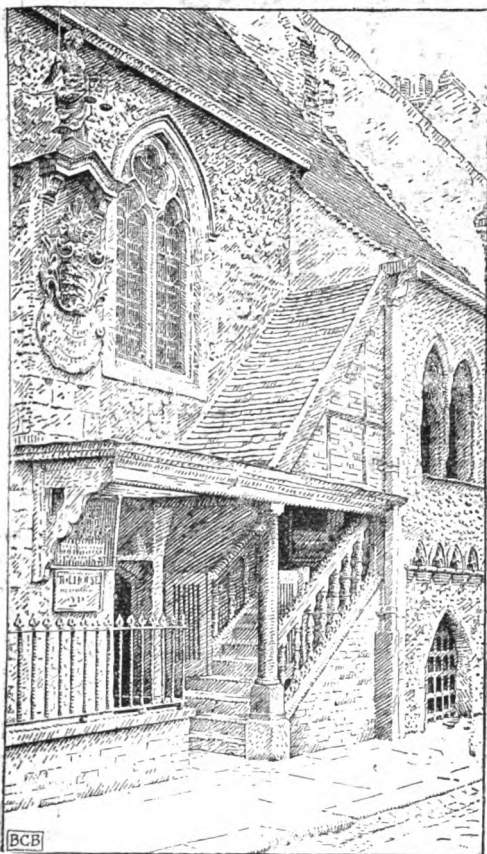
THE report of the directors of the Daimler Motor Company, Limited, for the year ended September 30th, 1903, states that the manufacturing account shows a gross profit of £27,641, and, deducting from this commercial and general charges and depreciations, there remained a net profit of £15,362. If from this be deducted interest on debentures, £2,319, and £5,000 which the directors have decided to write off the debenture issue expenses, the profit is reduced to £8,043.

SOME NEW BOOKS.



MOTORISTS know more of the country than any other class, and there is no better companion for the half-hour after dinner at a strange hotel than the sociable company of a pleasant guide book—especially a volume telling of the history of the country passed through, and the associations of that to be traversed on the morrow. A series that will be appreciated by motoring tourists is that of the "Little Guides," published by Methuen and Company, and in which all the counties of England are being brought under review. The plan has been to secure as the author of each book someone who to accuracy of knowledge adds some sentiment of local pride in the story he has to tell. Hence the enthusiasm with which the general scheme has been carried out by the individual writers adds a charm which makes the pages thoroughly readable. "Cambridge and its Colleges," by Mr. A. Hamilton Thompson, of St. John's College, is a good specimen of the series, and its illustrations by Mr. Edmund H. New are artistic as well as accurate. Each college is described and its architectural features illustrated in due order, the references to authorities enhancing the value of the book to students.

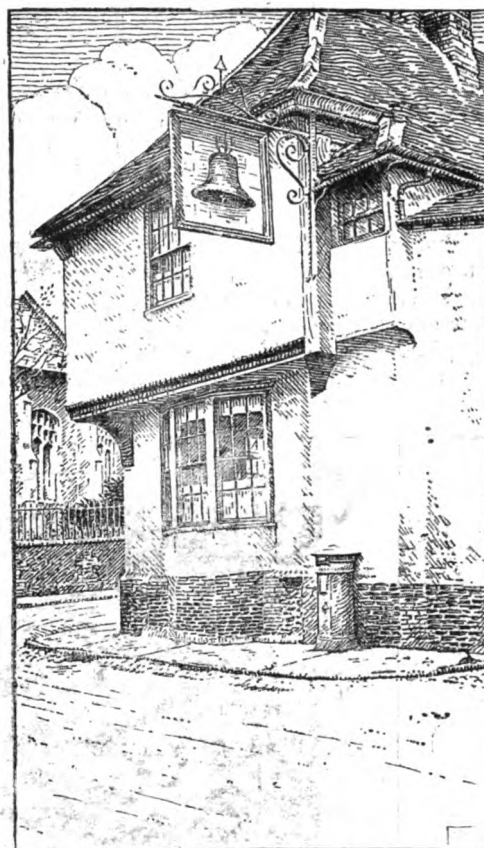
But the volume on Norfolk, by Mr. W. A. Dutt, will appeal even more to the motorist. Sussex, Cornwall, Surrey, Buckinghamshire, Hertfordshire, and other counties are included in the series, and the accompanying illustrations by Mr. S. C. Boulton are typical of the many to be seen in the volumes. According to the author the Norfolk main roads are well made and maintained, although the by-roads are not so good, and in the north of the county even worse. Still they compare



The Old Toll House, Yarmouth.

well with those of the eastern counties, particularly Suffolk. All the villages and towns are dealt with in alphabetical order, the space devoted to each place being well proportioned. Thetford is one of the oldest towns in the county, and naturally comes in for notice, the Elizabethan Bell Inn being specially

mentioned as one of the quaintest old houses, and as having been famous in the coaching days. Although Yarmouth is modern enough to be a popular resort, some of its buildings are sufficiently ancient to rank among the oldest houses in the county. The Old Tollhouse, in a street running parallel with



THE BELL AT THETFORD~

the South Quay, is known to have been in existence in 1362, and is now given up to the utilitarian purposes of a local exhibition. A good map of the county accompanies each of the "Little Guides," upon the publication of which Messrs. Methuen and Co. are to be congratulated.

Major Matson has collected a series of papers he wrote for a monthly magazine under the title of "The Modest Man's Motor," and these have just been published by Messrs. Lawrence and Bullen, Limited. The book extends to about a hundred and fifty pages, and very early in the volume the author sets down what he regards as the "essentials" in a motor-car for a man of modest means. These include a single cylinder motor of from 6½ to 8-h.p., with the inlet valve opening by ordinary atmospheric pressure; a slow-running horizontal engine; thick solid rubber tyres; a frame made of wood reinforced by steel plates, and belt transmission. In thus making public his views Major Matson should provoke the "old hand" at motoring to discussion, although he enjoyed a pleasant novitiate on such lines. The book is chattily written and does not lay claim to technical pretensions.

THE motor-cyclists in Prague have just formed the Union of Bohemian Motor-Cyclists.

LORD CLAUD HAMILTON will take the chair at the first annual dinner of the Norfolk Automobile and Launch Club on the 11th prox.

THE Earl of Derby will take the chair at a lecture to be delivered on Saturday, the 28th inst., by Professor Hele-Shaw at the University, Liverpool, on the "Pedrail."

CONTINENTAL NOTES.

THAT the date of the opening of the French Salon is fast approaching is indicated by the announcement that the Grand Palais in the Champs Elysées, Paris, will be closed to the public after Sunday next, and that on Monday workmen will take possession to prepare the building for the annual show. I have been able to gather brief details of the 1904 models of a few more of the leading concerns. The Bardon Company will, I understand, next season devote attention to a delivery van capable of carrying a load of from 2½ to 3 tons. Messrs. Cottureau, of Dijon, will next season make a feature of a new 12-16-h.p. three-cylinder car, which is stated to be exceedingly quiet in operation. It will have a stamped steel frame, mechanically-operated inlet valves, water-cooled brakes, etc. As regards the Darracq cars, the success achieved by the 1903 vehicles has decided the firm to continue the 8-h.p. single, 9-h.p. and 12-h.p. double cylinder, and 24-h.p. four cylinder models. A new four-cylinder car of 15-h.p. is being introduced, this, like the 12-h.p. and 24-h.p., having a stamped steel frame.

Gordon Bennett course in the Bielefeld district before the German Club. The wish was also expressed that the final selection be made before the end of the year, in order that no time may be lost in starting to make the necessary arrangements. M. Rene de Knyff has been invited by the German Club to go over the proposed courses and give his opinion as to the most suitable one.

THE German Club has recently proposed to the A.C.F. that Rule 9 of the regulations for the Gordon Bennett race should be altered so that drivers of the cars need not be full members of the competing clubs, but may be "persons commissioned by the clubs." The reasons alleged for making this proposal are that the German Club has always adopted the principle that no professional drivers are to be admitted to membership. As this rule does not prevail in the case of other clubs, it might happen that a professional driver was qualified to drive a car for another country, while not being qualified to drive a German car. The German Club also seeks to reduce the minimum distance for one circuit of the course from 150 kilometres to 125 kilometres, owing to the difficulty of providing



An Austrian Motorist amusing the Youngsters.

[Allgemeine Automobil Zeitung.]

So little interest was taken in the recent motor-car and delivery vehicle contest in Paris that it was evident that the time had come for a change in the arrangements of such trials. The matter came to a head at a meeting of the Technical Committee of the French Automobile Club last week, when the Marquis de Dion brought forward a proposal that next year a trial should be organised for such cars in which the vehicles would not make daily runs from the A.C.F., but should journey from town to town until a distance of 750 miles had been covered, records being taken of the regularity of working of the vehicles, the consumption, the condition of the motor and mechanism at the end of the trials, etc. The committee approved the suggestion and decided to take the organisation of a trial next year on such lines into serious consideration.

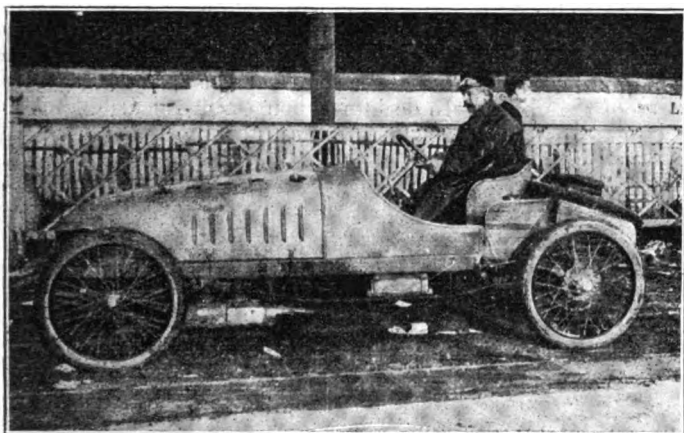
THE question as to which course shall be selected for next year's Gordon Bennett race is not settled. At a meeting of the Westphalian Automobile Club on Wednesday last week it was decided to once more bring the advantages of the suggested

a course of 150 kilometres once round for next year's race. The A.C.F. has informed the German Club that there seems no reason why these proposals should not be accepted. They will, however, require to be put before the other clubs that intend to compete ere they can be finally adopted.

THE Lebaudy airship made a highly creditable trip from Moisson to Paris, a journey of forty-five miles, on Thursday of last week. M. Juchmes, who was in charge, was accompanied by a mechanic named Rey. The airship is about fifty-six metres in length, ten in breadth, and has a volume of nearly 2,300 cubic metres. The frame below it is twenty-one metres long and six metres in width, and the car is nearly five metres in length and about a metre and a half broad. There are two sets of steering gear and two screws worked by a 40-h.p. Mercedes petrol motor.

THE Marquis de Dion, as president of the Chambre Syndicale de l'Automobile, has just made a report to the Technical Committee of the French Parliamentary Commission regarding

automobile speed regulations. The Marquis says "to limit speed" limits existence through limiting activity, which in itself is the measure of vitality." In his conclusions he urges:—That the speed regulations in crowded districts be applied intelligently, with rigour in cases of accidents due to carelessness, and with tolerance in cases where no real danger exists; that all ideas of rules based on the mechanical (theoretical) force of motors be abandoned; that the types of automobiles be registered by the Service des Mines, as at present; and that there be established a permanent automobile committee, specially charged with adjusting the differences between the Service des Mines, whose functions will not be changed, and the constructors of motor-cars.



new 40-h.p. Bayard Racer, which made the best time in the Light Car Class at Gallon.

ON Friday last, Baras on a Darracq weighing only between 12 and 13 cwt. succeeded in establishing a new record for light cars over the flying kilometre. The trials were made on the road through the Forest de Senart, near Montgeron. Messrs. Tampier and Gaudichard, the official timekeepers to the A.C.F., held the watches; Baras made two attempts and succeeded in covering the distance in 29.25 sec., which is 1.25 sec. less than the previous best.

THE De Dietrich Company are apparently going in strongly for racing next season. As I recently reported, they have secured the services of Gabriel, who hitherto has driven Mors cars. I now learn that Kirchheim, who has for some time been connected with the Eisenach Fahrzeugfabrik, is joining the De Dietrich Company as from the 1st January next. Kirchheim has taken part in a number of motor races in Germany, and in the Paris-Vienna race last year he was the first German *chauffeur* to reach the Austrian capital.

THERE was a pleasant little gathering at the "Salons de Margeury," in Paris, on Saturday last, when a number of well-known French motorists gave a banquet to Madame Lockert in honour of her recent success in making the journey by road from the French to the Russian capital. Among those present were Messrs. A. Peugeot, Chenard, Tony Hubert, Longuemare, Lacoste, Dubrulle, Georges Prade, and Stern. M. Armand Peugeot proposed the health of the *vaillante chauffeuse*, who, in responding, gave a humorous account of her trip.

FOR the approaching visit of the English members of Parliament to France the full programme has now been prepared by M. d'Estournelles de Constant and the other members of the French International Arbitration Group. The visitors will reach Paris on Wednesday, the 25th inst., their stay lasting four days. An interesting item of the programme will be an automobile trip to Versailles on the 28th inst., after the party has been "received" at the A.C.F. As showing the number of French Parliamentarians who own motor-cars, it is interesting to chronicle that over a hundred automobiles will be placed at the disposal of the visitors.

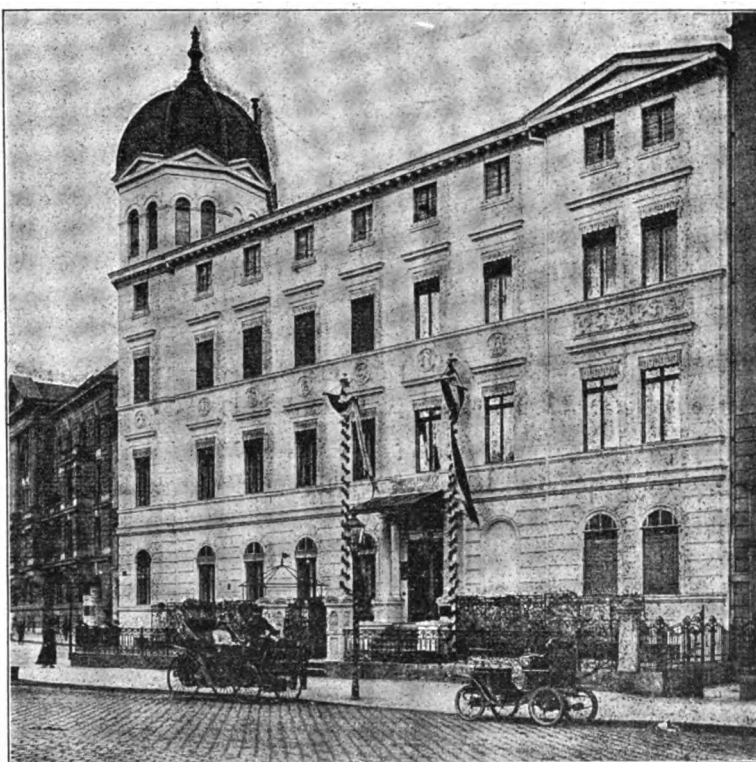
THE French Automobile Club has just adopted a recommendation of the sporting committee with regard to the competition rules of the Club, which are to be altered to the effect that any manufacturer or agent of automobiles or pneumatic tyres, etc., who, subsequent to a race or competition of any sort, publishes announcements in connection with the results which are notoriously false, with the object of misleading the public, will be subjected to the clauses of the Club rules which disqualify from taking part in any events organised by the A.C.F.

THE "Velo," the enterprising Parisian daily, has undertaken the expense of tarring the surface of the Avenue de la Grande-Armée. As is well known, this is a leading artery of the French capital much used by motorists and cyclists, by whom the experiment will be watched with the keenest interest.

THE Parisian police are just now devoting considerable attention to those motorists who have occasion to cross the bridge at Suresnes. The other day no less than sixty were stopped and had their names taken, some for excessive speed, some for having no plates on their cars, and others for not having their *permis de conduire*.

M. PAUL MEYAN, of "La France Automobile," is just back from a visit to England, where he was much struck with the large number of motor-wagons he saw in use. "I met them," he says, "in London, I met them in Liverpool, and even on the roads near Chislehurst," and he urges that more attention should be given to this class of vehicle in France.

"LE MONDE SPORTIF" is pushing on with the arrangements for the two competitions it intends to hold before the Salon opens its doors. The first is Le Criterium de l'Electricité, and, as the title implies, it is a trial for electrical vehicles. The programme provides for four daily runs from the 26th to the



The Club House of the German Automobile Club.

29th inst. inclusive, the runs ranging from 90 to 132 kilometres. The second is the Criterium de Régularité, a competition based on the lines of the recent reliability trial of the A.C.G.B.I. The distance to be covered is 1,200 kilometres, spread over six days from the 30th inst. to December 6th.

THE ROUSSEL SPRING WHEEL.

A PROMINENT feature at the recent speed and hill-climbing competitions in France has been Count Cadignan's 12-h.p. Bardon car fitted with the Roussel spring wheels. Many attempts have been made at different times to devise a spring wheel which would give to the riders of the vehicle all the advantages in the way of smooth running and freedom from vibration of pneumatic tyres without their disadvantages in the way of punctures, need of inflation, etc. As the Roussel wheel is now being turned out on a commercial scale, it is fair to assume that it has got beyond the experimental stage, so that the following brief description of it will no doubt be read with interest by those motorists who have suffered from tyre troubles, and more especially from large tyre bills.

The rim, which it is said cannot be bent out of shape, is made from a block of steel, pierced when hot, and hammered out to the desired diameter. It is then trued up and turned to the requisite thickness on the lathe. The hub, turned up from a single piece of steel, is provided with a bronze bush, in order to reduce friction and to prevent the hub "seizing." The springs of which the wheel is built are made of a special quality of steel and vary

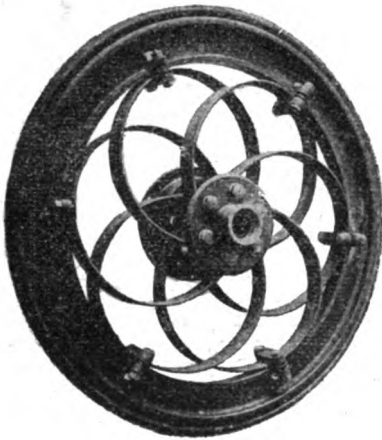


Fig. 1.—The Roussel Spring Wheel.

in size and thickness corresponding to the diameter of the wheel and to the load to be carried; they are made on templates, so that they are interchangeable. The springs take the form of broken rings, one end being bolted to the left hand flange of the hub and the other to the right hand flange, the central portion of the spring ring being attached to the wheel-rim by a bridge piece, the connection being such that lateral stability of the wheel is assured. In the case of the rear wheels of chain-driven cars, these are provided with a steel disc, to which the chain wheels and brake drums are attached. The wheels are shod with solid rubber tyres, these being used not with the object of reducing vibration or jolting, but merely to obtain a quieter-running car than is possible when steel tyres are used. A car fitted with the Roussel spring wheel successfully took part in the Paris-Madrid tour, and more recently in the starting and stopping race at Deauville.

At Petworth (Sussex) petrol can be obtained from Messrs. Rapley Bros., of Heath End.

THE Cardiff Motor Garage, Limited, has been registered with a capital of £3,000, and offices at 51, Queen Street, Cardiff.

THE Grappler Pneumatic Motor Tyre Syndicate, Limited, has been registered with a capital of £5,000 to carry into effect an agreement between the New Grappler Pneumatic Tyre Company, Limited, and Mr. Robert Gardner, as liquidator thereof, of the one part, and the Grappler Motor Tyre Syndicate, Limited, of the other part. The only director of the company is Mr. T. P. R. Bradshaw, of 30, Bachelor's Walk, Dublin.

THE QUESTION OF POWER IN THE PETROL MOTOR.

THE question frequently arises "why do internal combustion engines of the same dimensions differ so much in power?"

Too often it is answered by the statement that it all depends upon the mixture of petrol vapour and air. In truth, however, a good mixture is by no means the only requirement, and too much stress is laid upon this feature, so much so, in fact, that other equally important matters are overlooked. In order to secure the best power from a petrol motor one must begin at the bottom, or, in other words, with the design itself. If the engine is to be of a certain horse power, the speed at which the motor is to run and the number of cylinders must be decided upon in order to determine the bore of the cylinder and the stroke of the piston. In deciding upon the number of cylinders, particularly for an automobile engine, the designer should consider the space at his disposal in the car and the cost of construction. If the engine is to be a vertical one, the number of cylinders is determined principally by the vertical height; that is, the height from the centre of the crankshaft to the top of the cylinder head, and if this is limited, the number of cylinders must be increased in direct proportion to the power of the engine. If expense of construction is the principal consideration, it should be remembered that increasing the number of cylinders increases the number of parts to be machined, and hence the cost. However, a two-cylinder engine will run much more smoothly than one with a single cylinder, and a three or a four cylinder engine will give a steadier power than one with two cylinders.

One of the mistakes most frequently made by designers is the assumption that an engine of a certain bore and stroke will give a certain power, and no consideration is given to the speed at which the engine will run. Another erroneous assumption is that a motor of a certain bore and stroke requires a certain sized inlet and exhaust pipe, and that the question of speed does not enter into these proportions. This is the principal reason why so many petrol motors fall short of the power that should be obtained from them at the speed at which they are to be run. The question of the proper compression for a petrol engine is also one that is not thoroughly understood by designers, and here again the matter of speed is too often left out entirely. Mr. E. W. Roberts, writing in the "Cycle and Automobile Trade Journal," states that his experience is that very few designers are aware that the speed of the engine has anything at all to do with the determination of the compression pressure.

The question of engine proportions can be no better illustrated, perhaps, than by the formulæ which Mr. Roberts uses for his own designs. For the inlet valves and passages he has obtained very satisfactory results by limiting the speed of the ingoing gases to 100 feet per second. For the exhaust passages, calculating their areas upon the assumption that the gases are driven through the passages at atmospheric pressure solely by the motion of the piston, very good results may be obtained by basing the formula upon a speed of 85 feet per second. Hence, if the piston is moving at 600 feet per minute, the area of the inlet valve and the inlet passages should be one-tenth of the area of the cylinder. Should the speed of the piston be doubled, however, the area of the inlet valve and the passages should be two-tenths of the area of the cylinder. Similarly, the areas of the exhaust passages should be 12-100 of the area of the cylinder at a piston speed of 600 feet per minute, and 24-100 of the cylinder area at 1,200 feet per minute. The reader should note carefully that areas and not diameters are here considered.

Take for example a 5 by 6-inch engine running at 600 r. p. m., or at a piston speed of 600 feet per minute. The area of the cylinder is practically 19.6 sq. in. The area of the inlet passages should be 1.96 sq. in. and that of the exhaust passages 2.35 sq. in., or approximately 1½-inch and 1¼-inch diameter respectively. Doubling the speed of the engine or running it at 1,200 r. p. m. would double the size of the passages, the required

areas being 3.92 sq. in. for the inlet and 4.47 sq. in. for the exhaust, or approximately $2\frac{1}{2}$ -inch and 2 $\frac{7}{16}$ -inch diameter, choosing the next largest diameter that will not give too minute a fraction. These formulæ may seem to the automobile engine designer to give abnormal results. They are, however, founded upon some of the best stationary practice both in Europe and America, and have been found to give excellent results in automobile engines.

Particular attention should be given to the form of the inlet passages, and where sharp bends are unavoidable an increase of area will be found helpful. Care should be taken that the passages are not choked in any way except by the throttle or in the carburettor, where it is necessary to reduce them in order to atomise the petrol. Similar precautions should be taken with the exhaust passages, and the silencer should be designed that it will give ample egress for the gases so as to give as little back pressure as possible. The principal features in the silencer design are to allow the gases to expand before reaching the atmosphere, and to divide the exhaust into a great number of small streams. A silencer should have an expansion chamber equal to $4\frac{1}{2}$ times the piston displacement, which, resolved into a convenient formula, would give the volume of the silencer equal to 3.5 times the diameter squared, multiplied by the length of stroke.

If wire gauze or perforated metal screens are placed in the

results, maximum pressure should be reached just as the piston starts on the expansion stroke. Therefore, to get full inflammation, the igniting point should be further from the end of the compression stroke as the speed of the engine increases.

Since the lead of the ignition should be increased with the increase of speed, it follows that the compression may safely be increased with the increase of engine speed. Since an engine gives more power for the same dimensions with the increased compression, it follows that to get the best results a high speed engine should have more compression than one operating at a low speed. Engines controlled by throttling the charge may be safely given a compression suitable for their highest speed under working conditions, since throttling the charge reduces the compression pressure by lessening the volume of gas that enters the cylinder. A pressure of seventy-five pounds per square inch may be safely reached before ignition takes place, and such an assumption may be used as a basis for calculating the compression pressure as related to the speed of the engine and the corresponding lead of the ignition.

The advantage of high speed is that with the same mean effective pressure in the cylinders the power increases directly in proportion to the speed, and therefore an engine running at 1,200 revolutions should give double the power of an engine

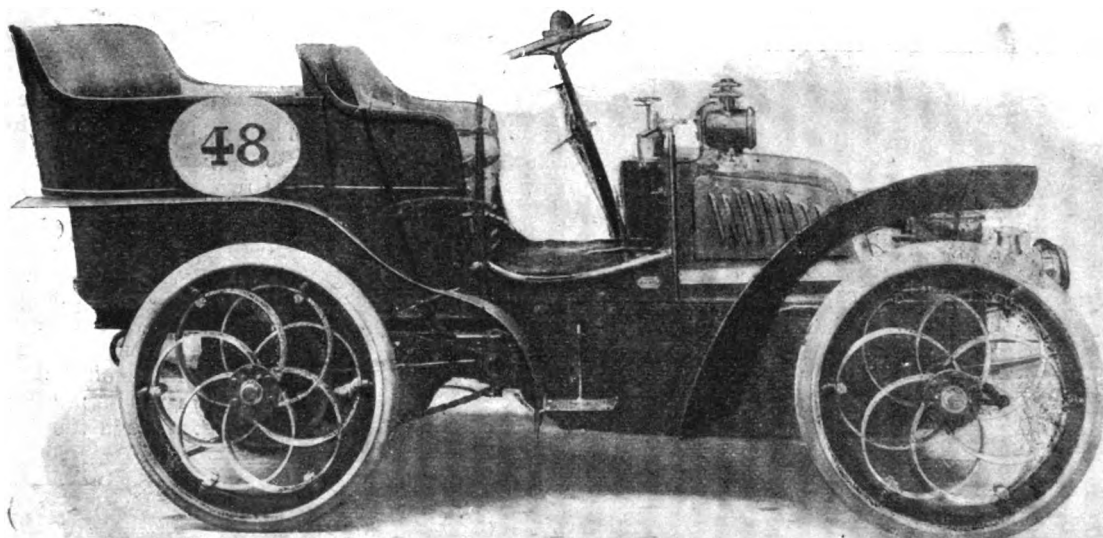


Fig. 2.—A 12-h.p. Bardon Car, fitted with Roussel Spring Wheels. (See page 726).

inlet passages for any purposes, the surface of the screen should be large enough to give the sum of the areas of the openings equal to from one and a half to two and a half times the area of the main passage. The finer the screen the greater should be this ratio. This is because the column of gas passing through an opening is subject to friction, which increases as the area decreases. Valves that are operated by the vacuum produced during the suction stroke should be as light as is conducive to good working, and their springs should be no stronger than is necessary to return them to their seats at the end of the suction stroke when the engine is working at its maximum speed. The designer should note carefully that the higher the speed of the engine the stronger must be the spring in order to bring the valve to its seat before the beginning of the compression stroke or immediately thereafter.

It is generally known that advancing the lead of the ignition device gives better results than working the engine at a constant lead. This is because, under the same conditions of compression and mixture, the time from the moment the spark occurs until the flame has reached every portion of the mixture and maximum pressure is attained is the same, no matter what the speed of the engine. It is generally considered that, to get the best

running at 600 revolutions. With an engine carefully proportioned for the higher speed this result will be generally approximated in practice, hence it is possible by using a higher speed to get a great deal of power in a small space. The disadvantages of high speed are that considerably more friction results, and hence more heat is generated at all the bearings. There is also a greater strain upon the moving parts, particularly the connecting-rod and the bearings at its ends.

Both the connecting rod and the crank shafts of an engine should be made considerably stronger for a high speed than for a moderate one, and greater precautions should be taken to prevent the bearings from getting loose. A high speed engine should be more carefully balanced than one running at low speed, and in multiple-cylinder engines care should be taken that the pistons and the connecting rod are very closely of the same weight throughout. The connecting rods should also be swung as pendulums on a knife edge, the bearing point of which should correspond with the position of the axis of the piston pin, and they should be timed so that they give very closely the same number of swings per minute. In assembling a number of engines it is quite easy to find connecting rods and pistons that will pair off in this way.

MOTOR-CYCLING NEWS.

THE 1,000 kilometre reliability trial for motor-cycles organised by the Moto-cycle Club de France was concluded on Sunday last. The trial consisted of six daily runs from Paris, each day's run being different, the distance varying from 70 to 120 miles. Thirty-six machines were entered and thirty-five started for the first day's run. The competing machines were divided into two classes according to cylindrical capacity---(1) a quarter of a litre; (2) one-third of a litre. On the first day twenty-six completed the run inside the official time, the withdrawals being chiefly due to ignition troubles. On the second day twenty-six started and twenty finished. On the third day, out of nineteen starters only one failed to get back within schedule limit. On the fourth day eighteen started and seventeen finished within schedule limit, while on the fifth day sixteen out of seventeen made the trip successfully. The final day's run was to Corbeil and back, fourteen riders finishing out of the sixteen who started. The successful competitors were Tarian (Bonnet machine), Holley (Bruneau), Firmin (Chantemede), Soupé (Chantemede), Kuhling (Gobron-Minerva), Castagnié (Knap), Canem (Lamaudiere), Coudert (Lurquin and Coudert), Mauxion (Mauxion), Cuillery (Motosacoche), Dussot (Paillard), Dufaux (Motosacoche), Schweitzer (Pecourt), and Bonnard (Werner). Monday was devoted to a critical examina-



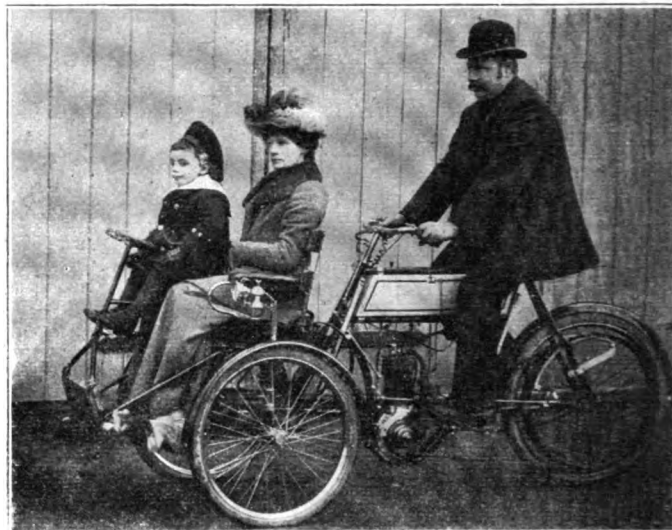
The French Motor-Cycle Trials.—The Two Georgia Knap Machines.

tion of the machines and their engines by the judges, whose report is expected to be issued in a few days.

MINERVA MOTORS, LIMITED, have issued a well-got-up handbook dealing fully with the 1904 models of the Minerva cycle engines. Clear illustrations are given of these, as also of the improved carburettor, silencer, and other details, these being supplemented by a large amount of information which will be found useful by riders of machines fitted with Minerva motors.

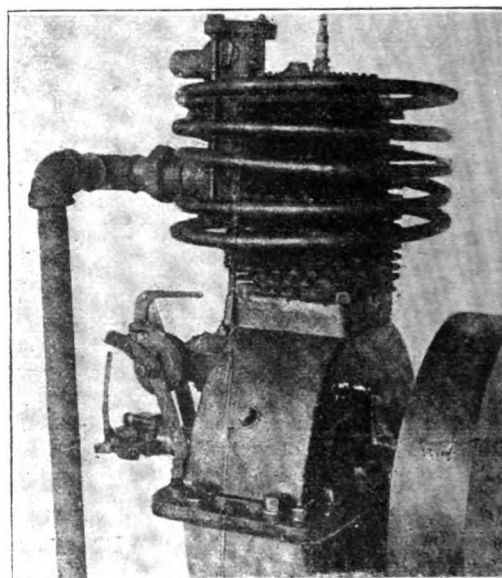
HEREWITH we illustrate the new combination motor-bicycle and fore-carriage made by the Lion Cycle Company, of Lowestoft. The motor-cycle is of the firm's standard type, and is fitted with a 2½ h.p. engine. The fore-carriage is made of wood and upholstered, it is supported on C springs, the spindles for the wheels are brazed in, while the lugs which receive the springs are brazed to the axles, no clips being employed in attaching the fore-carriage to the bicycle. An interesting feature of the machine is the provision for carrying a child of from three to six years of age, thus rendering it quite "a family affair." It will be seen that a detachable frame made of tubing is attached to the front of the fore-carriage; this is fitted with a saddle on which the child sits without inconveniencing the front passenger, while the small hand wheel serves to hold the child in

position, and at the same time affords amusement by causing him to think he is steering. In sending us the photograph, the Lion Company write: "At first we had our engine geared five to one, but while we found this would do very well for level roads, when we came to the slightest hill or head wind the engine required assistance. We then altered the gear to 7½ to 1, and although this would not do for racing, we can average



fifteen miles an hour. The engine does not overheat, and we believe 8 to 1 for a machine with fore-carriage a splendid gear for winter work with heavy roads."

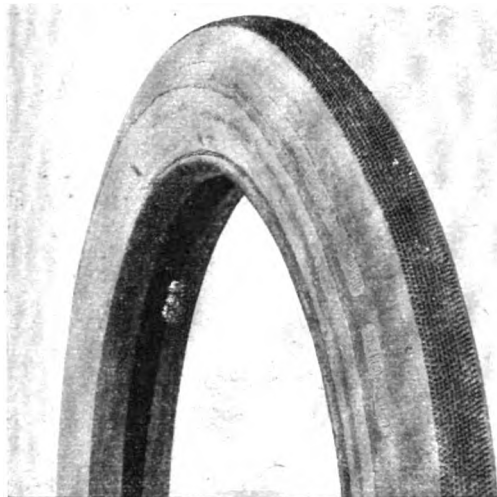
A NOVEL system of assisting the cooling of air-cooled petrol motors has lately been introduced by the Steel Ball Company, of Chicago, who utilise the exhaust for this purpose. The arrangement, which is illustrated herewith, comprises a coil of pipe connected into the exhaust system with small holes at frequent intervals along the inner side of the coil. This coil surrounds the cylinder, and the exhaust in passing through the coil forces jets of burned gases out through the small holes and



against the cylinder, the velocity of this circulation being sufficient, it is claimed, to set up an appreciable cooling effect. The system has been used for some time in connection with a fixed air cooled engine in the Steel Ball Company's works, and it is said that, though the engine has never been subjected to any exterior draft, there has never been any trouble experienced in keeping it cool during hours of steady running.

HERE AND THERE.

THE latest production of the Wilkinson Tyre and Tread Company, Limited, is the Wilkinson upper-cover, both plain and non-skidding, which can be fixed on the outer cover by the motorist himself. It is held to the outer cover by the inflation of the latter, and is kept in position by special upper rims. By the use of these upper covers and rims it is claimed to be impossible for the outer covers to be blown off the rims or for them to burst at the sides, whilst the treads make the outer



covers very secure against cuts and punctures. The Wilkinson Company are also making, in addition to their non-skidding tread, which is vulcanised to the outer cover, and of which we give an illustration herewith, a motor tyre embodying the features which enter into the construction of the Wilkinson tyre covers and treads.

THE Poole and Sandbanks Motor Car Company, Limited, has been registered with a capital of £2,000.

MR. E. T. BIRDSALL, the manager of the Standard Automobile Company of the United States, is coming to Europe on a business trip.

MESSRS. MERRYWEATHER AND SONS, LIMITED, are building a motor tender and hose cart for the fire brigade of Port Louis, Mauritius.

At the annual meeting of the Hozier Engineering Company a dividend of 10 per cent. was declared, and it was reported that contracts for the 1904 pattern Argyll had been booked amounting to upwards of 50,000l.

DURING the month of September the exports of automobiles and parts from the United States attained a value of £28,703, and during the nine months ending September of £238,565. The corresponding figures for 1902 were £12,369 and £169,597.

At the statutory general meeting of Westrumite Limited, Mr. T. T. Cowell, the chairman, said that the company is contenting itself with the role of licensors, granting the right to manufacture to sub-companies, specially formed for the purpose.

BARON DE CATERS on his 90-h.p. Mors car has just established a new Italian flying kilometre record, covering the distance on the road between Empoli and Ponte la Motta in 28.25 secs. He was timed by the official timekeepers of the Italian Automobile Club.

IN view of the early operation of the Motor Car Act, the Star Motor Agency, Ltd., of 16, Upper St. Martin's Lane, W.C., have brought out a small pocket edition of the law on the subject, conveniently arranged and bound in a neat leather cover. This little booklet they are supplying to motorists.

WERNER FRERES, LIMITED, is the title of a company registered with a capital of £120,000 to adopt an agreement

between Mr. J. Hendricks of the one part and Mr. J. Smith (for this company) of the other part, for the acquisition of the business carried on as Werner Freres in Paris, and at Levallois-Peret (Seine), France.

THE Lancashire Steam Motor Company, Limited, have recently completed no less than eight steam wagons to the order of Messrs. Edmund Nuttall and Company, of Capetown, for Government contract haulage work. The vehicles, one of which is shown in the illustration on page 720, are of the company's standard 4-ton Colonial type. We may add that in addition to steam wagons the Lancashire Company are constructing vehicles fitted with internal combustion engines for municipal freight, and passenger service. Two standard patterns are being made—one a two-cylinder 15-h.p. and the other a four-cylinder 30-h.p.

THE accompanying illustration depicts a new apparatus for use in connection with petrol motors which has been devised by Mr. J. Cooke, and which is being put on the market by Messrs. Cooke and Wade, of Cutlers' Hall, Sheffield. The device has a threefold object:—(1) As an air regulator. (2) As an economiser. (3) As a pneumatic brake when descending gradients. It consists of a valve fixed upon the end of the intake pipe, and connected with the induction valves. The valve box is cylindrical in form with an opening at one side, covered by a lid or covering of wire gauze, through which cold air is admitted to the valve and cylinders. In the valve box is a suitable rotary valve which (when open for the supply of mixture to the engine) closes the gauze covered air inlet, so shutting off the supply of cold air. The device is operated by a lever or arm keyed upon a spindle on the valve, the lever being actuated by the driver by a cord or levers from the dashboard or steering column. A slot or notch in the valve flange through which passes one end of a spring, regulates or determines the traverse of the valve, the spring returning the valve, upon its release, when it is desired to shut off the cold air. With the use of this device Mr. Cooke claims to be able to reduce the size of the water tank, as less water for cooling purposes is required, economise the fuel, improve the mixture, simplify the control of the car by dispensing with throttle valves, and allow the car to run silently on low speeds. Also when descending a gradient the gas may be shut off and the cooling device put in operation, so causing a current of cold air to pass through the induction valves, cylinders, and their connections, to the exhaust, thoroughly clearing same of all exhaust gases and leaving them

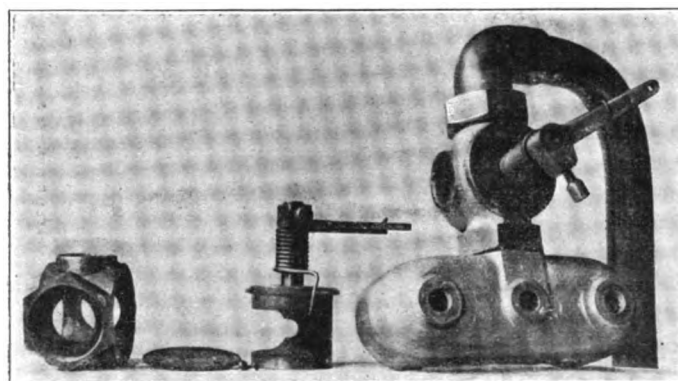


Fig. 1.

Fig. 2.

Fig. 3.

pure for the incoming charge, which allows the engine to pick up in a much better manner. Further, on large cars with four or more cylinder engines two or three of the cylinders can be run, when their power is not required, on cold air, thereby cooling and quietening the same to an appreciable extent. Referring to the illustration, Fig. 1 shows the barrel sections with gas and air inlets; Fig. 2 the rotary valve with slot cut out, giving a range either of gas or air from zero to maximum, and Fig. 3 the apparatus fitted to the end of the intake pipe close to the cylinder head.

THE Earl of Guildford has become a convert to automobilism.

MR. T. C. CLARKSON has promised to read a paper on steam motor-vehicles at the Society of Arts at a date yet to be fixed.

THE Booth Motor Syndicate, Limited, has been registered, with Messrs. F. Hulbert and S. Bramley-Moore as the first directors.

MR. STANLEY B. CORRY is about to open a motor-car depot at 8, Donegall Passage, Belfast. Mr. Corry has been appointed agent for the Cottereau car.

FOR not stopping his motor-car when requested to do so by the driver of a restive horse, Arthur Caddy, of Kirriemuir, has been fined £4 at Forfar, N.B.

THE Cross Keys Bridge, at Sutton, which carries the main road connecting Lincolnshire and Norfolk over the river Nene, has just been declared free from tolls.

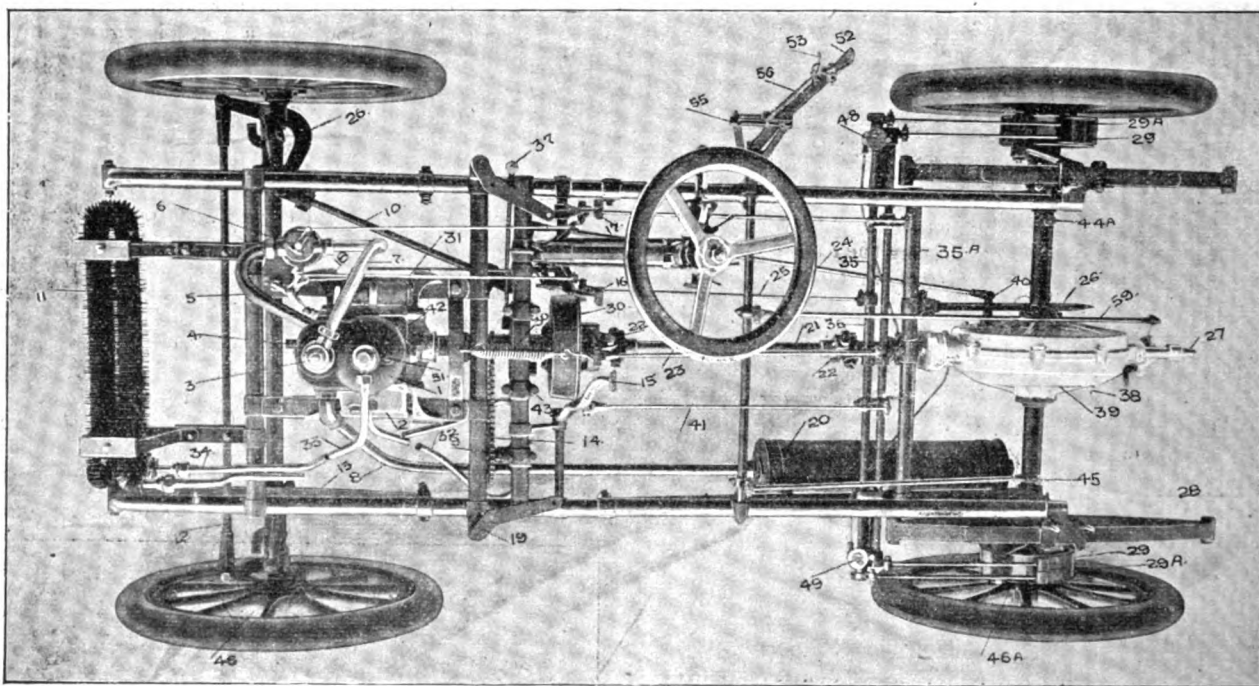
THE engineering section of the Manchester Chamber of Commerce is considering what support it can give to the delivery van trials to be organised next year by the A.C.G.B.I.

THE Launch Motor Company, Limited, has been registered with a capital of £3,000 and offices at the Devonshire Boat House, Chiswick.

MR. H. C. REYNOLDS, Norbury, has sued the Firefly Motor and Engineering Company for damages for injury to a cab caused by defendant's motor-car. The Recorder of London found in favour of the plaintiff, and awarded him £10 17s. 3d.

THE rules for dealing with petroleum spirit in India, which were made at a time when motor-cars were not considered or even thought of, are now undergoing revision. From Messrs. Turner, Hoare and Company, of Bombay, we learn that the Government of India have expressed their intention of modifying the rules, so that ordinary facilities can be given for the transport and storage of the spirit for use in motor-cars.

THE accompanying illustration represents a plan view of the chassis of the 6-h.p. Swift car, one of which took part in the recent Reliability Trials. The feature of the vehicle is the ingenious arrangement of the change speed gear, which gives two speeds ahead and one reverse, within the case which surrounds the bevel gear on the rear live axle. In the recent trials the



Plan of Chassis of "Swift" 6-h.p. Car.

WITH registered offices at 3, Sidney Street, Brighton, the Sussex Cycle and Motor Company, Limited, has been registered with a capital of £1,000. Mr. F. C. Lusher is governing director.

THE Securitas Motor Tyre Company, Limited, has been registered with a capital of £50,000 to acquire from Mr. A. Tobler and Mr. H. Samuel the benefit of some inventions with regard to tyres.

MOTORISTS visiting the north will be pleased to know that Messrs. Frank Little and Company have opened showrooms in High Bridge, off Grey Street, Newcastle-on Tyne, where they will undertake repairs, and supply oil, petrol, or accessories.

FROM the Ordnance Survey Office we have received a copy of their map of the Woking district, drawn on a scale of two miles to the inch. The features of this series are already well-known to motorists, and the present map is no exception to their excellence.

AT the South-Western Police Court, an application made by Mr. Moffat Ford, for ten summonses against the London County Council for driving their tramcars along South Side, Clapham Common, at a speed in excess of the legal limit, has been granted

car came through very creditably, making five non-stop runs out of a possible eight. Two stops were occasioned by punctures, the only stop resulting from mechanical troubles being that in which it was necessary to change an inlet valve. In the hill climbs the full load of passengers was carried, whilst in the Bexhill Speed Trials a speed of twenty-two miles per hour was attained.

A FURTHER accident took place during the track racing meeting at Brighton Beach, near New York, on the 31st ult., when the Gray Wolf of the Packard Company, illustrated in a recent issue, came to an untimely end. The accident occurred in a race in which, in addition to the Gray Wolf, a 30-h.p. Renault and a 40-h.p. Darracq took part. The Packard Co.'s car was being driven by the ex-racing cyclist, Champion. As he was rounding the turn into the home stretch, at about the roughest part of the course, he ran into a deep rut. In wrenching the steering wheel to extricate himself the steering knuckle broke and the machine dashed into the inner fence, carried away through posts, and hurled the driver forward. Champion sustained a compound fracture of the thigh, being thrown against the steering wheel. After lying unconscious for some time the injured man was taken to the hospital, where he now lies.

THE NEW PALMER "CORD" TYRE.

THE Palmer Tyre, Limited, have just brought out a motor pneumatic tyre, in the construction of which quite a new departure has been made. For reasons connected with the foreign patents full details are not yet available, but it may be stated that the tyre will be constructed of a patent "airless" rubber and thread cord, and that no canvas will be employed either on the tread or the side walls of the outer cover. Experiments have been in progress for some years at the India Rubber Works, Silvertown, where the Palmer tyres are made, as a result of which it was early found that tyres made with strong approximately straight threads or cords proved greatly superior in every respect to tyres made with woven canvas linings, but the difficulties connected with the manufacture of such cord tyres in commercial quantities appeared to be insurmountable. As a result of persistent experiments, however, a plant is now in operation at the Silvertown Works producing tyres differing from anything of the kind hitherto made.

In the earlier experiments in building up tyres with cords, it was found that when the round cords were placed close together at the bead or anchorage, considerable spaces were left between the cords on the tread or larger circumference of the tyre, and it was necessary to fill each of these spaces with a shaped piece of rubber when building up the tyre. This difficulty is overcome in the new tyre in a very novel manner. Instead of employing the cords in their natural round shape they are flattened to an oblong or oval form. At the anchorage or smaller circumference of the tyre the cords are arranged with their wider surfaces together, and as they approach the tread or larger circumference, each cord is given a quarter turn so that the narrow surfaces or edges are together as shown in Fig. 1. By this simple means a uniform fabric is made without filling pieces. Furthermore, it is claimed that the tyre is easier to build and that it is fully 50 per cent. stronger than if the cords were employed in their round condition; that is to say, about 50 per cent. more of the flattened cords can be built into each layer than would be the case if round cords only were employed. Each cord is entirely insulated throughout, each separate strand being coated with pure rubber gum before being built into the cord proper. All motorists know by experience there is sometimes a vast difference in the life of canvas-lined tyres supplied by the same firm. This is easily explained. The most experienced tyre builder cannot possibly arrange that the threads warp and welt in the different layers of canvas shall be of equal tension

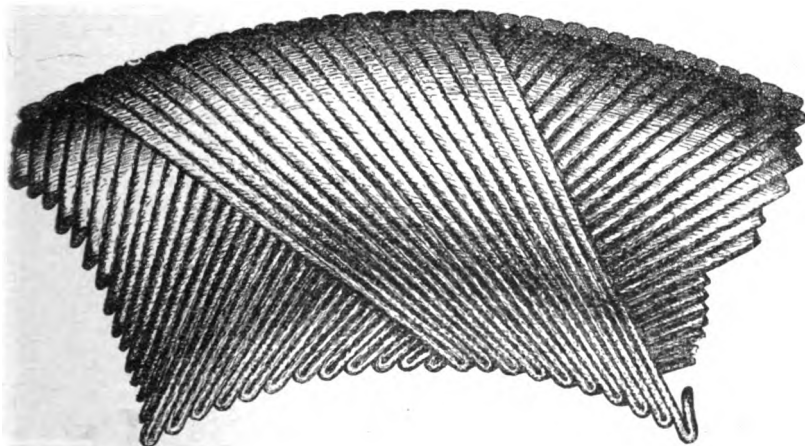


Fig. 1.—Showing Method of Building Tyre with Flattened Cord.

everywhere. He may by chance make a tyre in which the slack and taut threads are fairly well distributed, and which will probably last a considerable time, and the same tyre builder may, whilst using equal care, make a tyre in which the tensions are concentrated at one or more places, and which would probably soon give out. When a canvas-lined tyre is flattened by contact

with the road the alteration of shape at the side walls changes the disposition of the canvas in such a manner that the major portion of the strains is thrown on the outside layer, while the other layers become slack in various degrees, just at the time when they are most required to transmit the motive power to the road. For the purpose of comparison it may be assumed that a tyre having five layers of canvas contains ten layers of wavy threads, that is to say, five running in each direction. In the new Palmer tyre only two layers are employed, one in each



Fig. 2.—The Two Layers of Cord Fabric.

direction, as shown in Fig. 2. The shape of the side walls will naturally be altered by the tread making contact with the road, but the strength of the cord fabric is not reduced. By reason of the uniformity of the tension in the new tyre there are no idle threads; it is therefore claimed to be possible to make the tyres very much thinner in the fabric than a canvas lined tyre and yet very much stronger. In order, however, to ensure a great reserve of strength the new cord fabric is made much stouter than is absolutely necessary.

A FRENCH motorist complains that in several localities in France he has been the victim of unscrupulous dealers who sold him cans of water instead of petrol.

PRINCE ALBERT of Belgium recently paid a visit of inspection to the motor-car works of the Germain Company, and has placed an order for a 35-h.p. car with this concern.

ON May 1st last, between 9 a.m. and 9 p.m., 16,576 vehicles are said to have passed along Piccadilly, 17,768 along Regent Street and 12,581 along the Strand—a moderate insight into the extent of London's traffic.

At Camberley three cases of automobiles being driven on the footpath have resulted in fines being imposed in each instance. Several similar summonses have had a like result at the Newbury County Petty Sessions.

MR. ROBERT TODD presided at the dinner of the Stanley Club in celebration of the opening of their show at the Agricultural Hall, London. About three hundred guests were present, including many well-known motorists.

THE Cambridge University Automobile Club is proving an active organisation. The other day it organised a hill-climbing competition at Offley Hill, near Hitchin, when, of eight competing cars, two—a 20-h.p. M.M.C. and a 12-h.p. Lucas—tied for first place.

THE Motor Traction Company, Limited, have lately brought out a new form of silencer known as the "Stanley." The chief object is to provide a silencer through which the exhaust gases will be discharged freely at a steady and practically uniform pressure and without the usual explosion sounds. One or more tubes or pipes are employed, through which the exhaust gases are caused to pass in a circuitous manner, being at the same time broken up into small streams by striking or impinging against studs or projections in the tubes, the gases being at the same time cooled, so that when finally reaching the atmosphere they are practically at normal or atmospheric level. The studs are arranged along the tube in the form of a spiral of an appropriate pitch, and pass diametrically across the tube with a convenient distance between them. The gases are caused to pass from the exhaust pipe of the engine into one or more pipes having studs as above described, and are afterwards delivered into an expansive chamber, from which they pass into one or more studded tubes before escaping to the atmosphere.

CORRESPONDENCE.

THE WINTER USE OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I read with a great deal of interest your little chapter bearing the above title, and feel sure that it has been instructive to many of your readers. The crucial point, however, for all motorists who cannot manage to keep their cars warm at nights is the question of the water circulation. I have tried glycerine diluted with water. You want a 20 per cent. mixture at least; water with a dash of glycerine is no protection whatever, and my experience is that within two or three weeks every rubber joint, which previously held water all right, begins to leak. As regards calcium chloride (not chlorinated lime, as our friend wishes to intimate was supplied by some poor chemist), which is a neutral salt, and is met with commercially in the anhydrous or dried form, containing no water of crystallisation whatever, it is in porous friable masses, similar in appearance to white pumice stone, and has to be kept in airtight jars to prevent absorption of moisture from the atmosphere, and consequent deliquescence. Now, I have not found it altogether a success. Under the influence of the heat in the cylinder jacket there is a tendency to dissociation, a slight precipitate of a basic calcium carbonate which is deposited as a sort of rusty furring; also, at the same time, a consequent liberation of hydrochloric acid, which cannot be good for the "innards" of motors. Why will not brine made with common salt do just as well? It is used for just the opposite purpose, viz., in the coils of freezing machinery. It is a fact well known to chemists, that strong or saturated solutions of almost all salts will not freeze, except the temperature be reduced a long way below 32 deg. Fahr.; but, at the same time, such solutions will not part with the heat absorbed nearly so rapidly as pure water, hence many will find that, although the atmosphere is cold, their radiators do not act so well.—Yours truly,

CHEMIST.

PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to your correspondent's ("B. J. W.'s") inquiries, our standard petrol of 700 specific gravity may be kept for any length of time without the slightest deterioration in quality, provided it is stored in strong cans, like those we usually send it out in, and these cans are properly closed. That this is a fact we have often been told by customers who have put aside cans of petrol for many months, and then, much to their surprise, have obtained quite as satisfactory results as from petrol recently distilled. We have confirmed this by many laboratory experiments, which have conclusively proved that under the conditions named petrol does not alter in composition nor deteriorate in quality. Petrol may also be kept without deterioration in the tank of a car, but it is necessary to make sure that the tank is quite air-tight. If, for instance, the screw plug which closes the filling hole is not air-tight the lighter portion of the petrol will evaporate, and the petrol will then become what may be described as "stale" petrol.

In the case of our standard petrol, even if it has been exposed to the air and so become heavier, owing to the evaporation of the lighter portions, it will give better results than a less homogeneous spirit even of the same specific gravity. The efficiency of a motor spirit depends more on the way it has been distilled than on its specific gravity.

It is difficult to answer the question as to the relative efficiency of "stale" petrol and standard petrol, because this must naturally depend upon the extent to which the "stale" petrol has deteriorated owing to exposure to air. On the other hand, old petrol, if properly stored, is quite as good as new.—Yours truly,

CARLESS, CAPEL AND LEONARD.

THE TYRE QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—All practical motorists who are not millionaires must endorse a great many of the remarks made by "A Mechanical Engineer" in his interesting letter appearing in your issue of the 14th inst. I believe that many of the leading motor-car manufacturers recognise that the short-lived, extravagant, and treacherous pneumatic tyre is seriously checking the development of mechanical traction, which, until this tyre problem is solved, will be unable to evolve itself from the stage of what another of your correspondents terms "mechanical toys." What is required is a resilient, non-puncturable, long-lived tyre, and this will doubtless sooner or later arrive.

In the meanwhile I presume we motorists with modest purses will have to put up with the equally unsatisfactory but more reliable solid tyres on our rear wheels. But I think your inexperienced readers ought to be warned as to the extreme danger of using solid tyres on the front wheels of a high speed car, however delicate the carriage springs may be. The perpetual vibration is certain, sooner or later, to affect the metal of that part of the steering gear which lies under the carriage springs, and probably end in a disastrous accident.

I myself have had actual experience of an accident of this kind, which fortunately took place as we were slowing up to pass a restive horse. Had the accident occurred five minutes earlier it would certainly

have resulted in the maiming, if not instantaneous death, of all those on the car.—Yours truly,

A PRACTICAL MOTORIST.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—On page 704 of the last number of your *Journal* I noticed a paragraph re iron tyres. This suggestion comes from America, but it could just as well be suggested here in England as far as the troubles of tyres coming off rims and becoming dangerous is concerned.

I would like to point out that such iron tyres as are suggested are impossible for motor-cars of high speeds. In the first place, as we know iron-tired wheels now, the engines could not stand them, and, secondly, no one would have them. And it might be said that any advantages found in such a tyre are wholly offset by the fact that the life of the wheel would be seriously limited. The fact of the contention is, the trouble found in the unmechanically-attached pneumatic tyre which has been forced on us. Such suggestions would not be made if these people stopped to think that there are tyres on the market that cannot come off their rims. There is a tyre being put on the market, the Nadall, of which little at present is known in the United States, that is proof against this fault. Also it is a mechanically-attached tyre.

Also there are one or two other good tyres that are not of the principle whereby the air within the tube is depended on to secure the cover to the rim, and, it might be added, to some day cause the breaking of the motorist's neck. A perfected non-skidder, and a mechanically-attached pneumatic tyre that will not come off, to be sold at a fair price, is all that is required. Yours truly,

H. BARRINGTON OLDS.

THE PROPOSED FEDERATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We duly received the Nottingham Club's letter as published in your last issue, to which we replied as follows:—

"We have read your letter of the 6th inst., and have come to the conclusion that it calls for no detailed reply direct. It is not criticism you present, but irrelevant abuse."

Taking the letter verbatim, they open by dilating on the amount of the affiliation fee, and quote a sentence from the letter we sent round to the provincial clubs at the commencement of the movement now on foot. They are careful, however, to rob the sentence of its context. We have said that the financial aspect is not one to be seriously considered, provided that corresponding advantages are obtained for the sum demanded. The cost of federating will depend entirely on what the members of the Federation want. The point is, that the Federation will be a perfectly independent and representative body, and as such can have anything it likes, and do anything it likes, provided that it is prepared to pay for it.

The Nottingham Club states that such a scheme as we propose "will require both brains and money," but I go further than that and say that it will not only require these necessities but will have to use them, which is a totally different matter. The Nottingham Club says it early recognised the splendid work done by the A.C.G.B.I. (and who did not?). It gladly welcomed the chance of becoming affiliated after it had arranged favourable terms for itself, by which its fifty odd members were affiliated on payment of an acknowledgment fee of £10. It appears that this lack of large-heartedness on the part of most of the provincial automobile clubs is what the Nottingham Club so sorely deprecates. It also states that it has a voice on the Executive Committee of the A.C.G.B.I. If this is the case, it will readily be seen that preferential treatment has been meted out to this club, and, therefore, it is not in sympathy with the clubs to whom this treatment has not been extended.

With regard to the term "provincial automobilism," to which it takes exception, what else can this mean but "the use of the motor-car by members of provincial automobile clubs, and others, who are not members of the A.C.G.B.I."? It is these users of motor-vehicles that the Federation would embrace and cement into a body which would have a far more reaching influence, both in the provinces and in Parliament, than any existing organisation of automobilists.

The Nottingham Club says:—"We have in the parent club an organisation capable of enormous good; etc." No one, to my knowledge, has ever disputed its capabilities. It is not a question of capability; for instance, the Nottingham Club has not grasped the meaning of "Federation," but I do not suggest that it is incapable of grasping it.

In conclusion, I can say that fifteen provincial automobile clubs have already definitely decided to take part in the formation of an Automobile Federation, and that a conference to discuss same will be held in London early in December.—Yours truly,

ALBERT E. NEWTON,
Hon. Sec. Reading Automobile Club.TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your last issue there is a letter of self-adulation from the Notts Automobile Club, in which appear some impertinent and altogether uncalled for remarks concerning the Lincolnshire Automobile Club. As a member of the latter club's committee, will you allow me to suggest to the Notts Club that they should give their opinion on the

Federation question without seeking to disparage any other club, whose members may conceivably possess as many brains as themselves.

The Notts. Club take unto themselves great virtue for the support they have so unanimously given to the parent club by paying the affiliation fee, but doubtless they have forgotten the excessive amount they drew back last year for payment of fines and legal costs, whereas the poor abused Lincolnshire Club, with a larger membership, required and received nothing.

Truly the Notts. Club may say "we are keen as decency will allow in getting full value for money and in making arrangements which will be most beneficial to ourselves."

The Lincs. Club will shortly give its decision on the affiliation question, and in the event of its members deciding to affiliate I am sure the last thing they will look for from the parent club will be the payment of expenses incurred through careless or incompetent driving.

In conclusion, I think I can speak for the Lincs. Club when I say we have an idea that by behaving as gentlemen on the roads, by showing every consideration to other users of the roads, by using conciliation whenever possible, we can do as much to advance the best interests of automobilism as our Nottingham neighbours, whose superior acquaintance with the police courts requires such substantial support from the parent club.—Yours truly,

W. R. PENNELL.

OVERHEATING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to "Opossum's" letter with regard to overheating, in your last issue, it is just possible that after the pipe to the cylinder has been released to see that the water is circulating properly, the cylinder becomes either air or steam bound. In the latest types of cars this cannot happen, inasmuch as the water circulates directly from the top of the cylinder into the top of the water tank. In the older patterns, the water pipe was conveyed from the top of the cylinder to the bottom of the radiator. In this case a lock was caused in the circulation by either air or steam in the pipe between the cylinder and the radiator. The water can be put into circulation again by releasing the union nut at the top of the cylinder, and allowing any air or steam there may be in the pipe to escape. The springs of the valves may also require renewing. I myself have not experienced any trouble in regard to the furring of the cylinder jacket, and think some other cause for the heating should be looked for.—Yours truly,

MAGNETICUM.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR—It is difficult to diagnose "Opossum's" complaint without seeing the patient, but it is most probable that something is still impeding the circulation. A washer in one of the water-joints may have swelled so as to choke the pipe; or it is possible that there may be a leak or porosity in the cylinder end or the plug closing it, allowing burnt gases to escape into the jacket; a very slight one might be enough to cause an air-lock. If fur is the cause, there can be no mistake about it, as it requires a quite perceptible amount to have any effect, and it seems very improbable that this is the case. Does the engine give its normal power prior to heating? If so, an undetected obstruction in the circulation is most probable. In any case, it would be wise to make sure that an over-rich mixture is not the cause.—Yours truly,

C. V. J.

MOTOR-CYCLE SIDE CAR EXPERIENCE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to the letter of Mr. J. Van Zwieten in your issue last week, I am strongly of the opinion that for a side-car or fore-carriage something more is necessary than the ordinary brakes. In the case of my own tricycle with fore-carriage, I have band brakes on the two wheels in front, a strong Bowden brake on the driving wheel, and I have also recently had a back-peddalling brake fitted. This last is a new invention, and has been brought out and patented by Mr. Cocks, of the firm of Wass and Cocks, Ealing Dean. It acts on the belt rim of the driving wheel; it is quite simple in construction, very reliable, and exceedingly powerful.

On dry roads it is most useful, both for checking speed down steep hills, and also as an emergency brake. It may be put out of action at pleasure. I feel sure that for his South African requirements Mr. Van Zwieten will find it a most useful addition to his equipment.—Yours truly,

(REV.) EDWIN NOYES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We were much interested in Mr. J. Van Zwieten's letter in the last issue of the *Journal* re "side-car" attachment. We would like to be allowed to point out to your correspondent that, recognising the difficulty in riding with a side-carriage unoccupied, and the peculiarity of the steering wheel in use (occupied or unoccupied) we have devised a simple method of steering, whereby the "side-car" wheel moves in unison with the front wheel of the motor-cycle, thus preventing the roll and drag upon the tyre inseparable with the ordinary model.—Yours truly,

MILLS AND FULFORD.

INSPECTION PIT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to the recent inquiries ament the most suitable dimensions for an inspection pit, I would venture to suggest, in view of the increasing wheelbase of cars, that the length of the pit should be at least 7ft. It is with some vehicles not easy to get into a pit 6 ft. long when a car is standing over it. I think, too, the width might advantageously be made 2½ft. Steps at one or both ends of the pit will also be found useful not only in giving access thereto, but enabling the user to adjust himself, as it were, to any particular job.—Yours truly,

F. G. WILSON.

THE MOTOR CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice on page 699 of the *Journal* that you report that at a meeting of the Settle Rural District Council it was decided *inter alia* that in passing through villages the speed of motor-cars should be limited to eight miles an hour.

Now, Sir, in deciding this, surely the District Council were acting *ultra vires*, as the new Act plainly says, in Sect. 9, ss. (1) (after setting the top limit at 20 miles an hour), "and, within any limit or place referred to in regulations made by the Local Government Board, with a view to the safety of the public on the application of the local authority of the area in which the limits or place are situate, a person shall not drive a motor-car at a speed exceeding ten miles an hour."

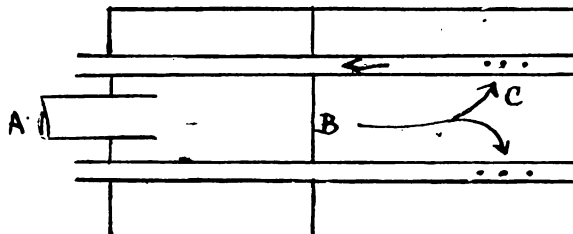
In face of this I fail to see how the Council can set a limit of eight miles an hour, as by this section a motorist is allowed to go ten miles an hour in the restricted parts.—Yours truly,

FAIR PLAY.

SILENCERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to J. E. A.'s enquiry in your last issue I think he will find the form of silencer shown in the accompanying sketch very effective. The exhaust gas passes in at A through the perforated plate B and out



through the small tubes C. The number of these tubes depends upon the size of the engine, but for one of 6-h.p. four tubes about 3-8 in. dia. would be sufficient, with small holes drilled as shown. The size of J. E. A.'s pre-ent silencer is sufficiently large in diameter for an engine of 12-h.p.—Yours truly,

NORWICH.

DIFFICULTY IN STARTING MOTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will any of your readers kindly advise me in the following trouble? I have a 2-h.p. Beeston tricycle with electric ignition, wipe contact, trembler coil, and surface carburettor. I adjust air valve, etc., but have great trouble in starting the motor. When I get it into operation, however, it works all right. Not requiring it for three or four days, or perhaps a week, I have the same trouble to get it to start—for perhaps an hour or two. Would a spray carburettor or any other means make it more reliable? I keep the carburettor corked up during the time it is not wanted.—Yours truly,

ANXIOUS.

[The difficulty in starting engine may be due to several causes. In the first place, it is necessary to examine sparking plug, as this is likely to get a slight moisture on the porcelain after standing for some time unused, which will cause short circuit. The spring of inlet valve may be too strong, which would prevent getting full charge unless running at high speed. Failing these, a little petrol squirted into the cylinder through compression tap with a small oil can may be tried; this would enable engine to make several explosions and so warm the motor and petrol slightly, and in all probability overcome the difficulty experienced. A spray carburettor would undoubtedly give less trouble in starting.]

CHARGING ACCUMULATORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have considerable difficulty in having the batteries on my car recharged, as there is no electric supply company in the neighbourhood, and was therefore much interested in the account given by a corre-

spondent, in a recent issue of the *Journal*, of his experience of the Boron battery, and have been waiting for the further particulars which he was going to give when some photographs of the apparatus had been printed. Can you tell me if this battery is to be recommended for charging storage batteries for ignition purposes, and if it is reliable and simple in its work, and how many cells I should require to efficiently deal with a four-volt storage battery of the ordinary type?—Yours truly,

C. B. CAVE-BROWNE-CAVE.

A. AND CO., FEUERTHALEN, SWITZERLAND.—The makers of the Millenium motor-car lifting jacks and other similar implements are Messrs. Lake and Elliott, Braintree, Essex.

PARAFFIN CARBURETTOR.—A correspondent signing himself "Lotus" asks if any motorist who has tried the Trusty carburettor, said to work with either petrol or paraffin, will send particulars of the success he has achieved with the same.

MOTOR LAUNCHES.—We have an enquiry for the names of makers of motor-launches which can be worked with petroleum residuum instead of petroleum. Will makers of the same communicate with us?

PUNCTURE GUARD.—"G." writes: "Can any of your readers give reliable information, based upon actual experience, of Wheelodon's puncture guard for motor tyres? It is claimed for this guard that it stops punctures and skidding. If this is really true, and there are no disadvantages to its use, surely the guard ought to be widely known, as its price is so reasonable."

THE LIMITATION OF CYLINDER CAPACITY.*

By C. W. S. CRAWLEY.

THE Gordon Bennett Fortnight brought two things home to most of us—first, that "racer" racing would be seldom, if ever, practicable in the future except over a short special track; and, secondly, that, of all deadly dull things to watch, handicap racing for touring cars was only one degree better than that dismal amusement, racing singly against the clock.

Several people have vaguely suggested limiting the cylinder capacity, but vague generalities lead to nothing, and the best way to bring the matter to a head is, I think, to subject some definite scheme to a discussion. The actual figures I have taken are not suggested as being exact; they are round numbers, taken as near as may be for illustration. The final figures could only be settled by conference with the makers. The nominal *raison d'être* of racing—horse, cycle, or motor—is "the improvement of the breed."

The present racing conditions are "get as much horse-power into a ton as you like," and under them the Gordon Bennett and other races have been run and have thoroughly justified their existence. They have improved the breed magnificently. Engines, frames, gearing, wheels, tyres, in fact nearly every mechanical part of the car, could never have approached their present state of excellence by any other means.

Let us look at what we want to arrive at and try and frame some racing conditions which will give it us, and give us good sport at the same time; that is essential.

Weight.—Many of our present cars are too heavy; a "30 cwt." is more than most of us can afford tyres for. I would put an ideal heavy car at not more than "20 cwt."

Speed.—We can give our constants any value we like; but I would suggest that they should be taken to give somewhere about 30 miles per hour on the level; it is as high as we want for the road at the moment.

Power.—Fifteen h.p. should give us about this speed on the level, and yet get us up most reasonable hills on the third; but to limit horse-power would be an error. We should lose a means of improving the breed, so we must get there another way.

Cylinder capacity.—I have worked out the cylinder capacities of all the cars in the Reliability Trials from the data given in the programme and, though there are a few which differ widely, yet I think that we shall not be far wrong if we take it that 10 cubic inches represent about what is called a horse-power.

Now, by limiting cylinder capacity we not only have every maker trying to get more power out of his engine, but also improving his transmission gear, so as to get more of that power on to his wheels.

Body and Weight.—In a real car there is a considerable weight of body and passengers; in a racing machine there is a minimum of both. Given a "20 cwt." car in use on the road, the weights will be roughly, say:—

	Cwt.
Chassis, with every working part, including petrol and water for 150 miles	15
Body...	5
Tools, lamps, aprons, skid chains	1
Four passengers (including driver), wrapped up	7
Spare, including chain and two tyres and tubes	1

We are not definitely settling the figures, but let us say, for simplicity's sake, chassis 15 cwt., other weight 15 cwt., h.p. (at 10 cubic inches per h.p.) 15.

We shall then get a perfect handicap for all cars about "20 cwt." By handicap I do not mean that all cars of all makers will finish a 20-mile race under a handkerchief, but mean racing conditions such that,

whatever the make and weight of the cars, they can be raced under standard conditions, and the car best suited to our wants will win. Incidentally we get rid of bringing price into the handicap, which is to the good. The conditions are extremely simple. For every ten cubic inches of cylinder capacity, first, the chassis must weigh at least one cwt.; and secondly, a further weight must be carried of at least one cwt.

The result will be, I think, not to make the racing car resemble a touring car, but to make every touring car a racer which its owner can enter in any race and run on level terms against any other car. He will have to meet no cars in which use is sacrificed to speed, and if he is beaten badly it will be because his is the worse car, or himself the worse driver. If such were the conditions generally accepted for racing we should very shortly find all cars built to them, as they allow every latitude for making them comfortable, strong, and roomy, without in the least impairing their powers of winning.

I have spoken only of cars of close on 20 cwt., but we need not confine ourselves to these. A "15-cwt." car requires a little more power in proportion than a 20 cwt. one, and a 10 cwt. one a little more still; but this is easily allowed for in the conditions if we want to race all together in one class; and, by the way, there is nothing to prevent our present cars running, knowing the cylinder capacity and weight of chassis and body; it is merely a question of weight to be carried.

Now, let us look at the matter from the manufacturers' and purchasers' point of view. Besides making racing more useful in improving the points we want improved, it makes the winning of a race so much more an index of what the purchaser wants to know. He will order a duplicate of the car that won or was well placed in a race, and will know that it can do certain speeds and generally behave itself, whereas at present if he goes to a manufacturer whose car has just won a race, it is for a totally different machine. The maker has no doubt learnt a good deal by building the racer, but it means that the best brain power of his works have been devoted for months to quite a different problem to that of improving the car the user wants.

Now as to some objections. Limiting the cylinder capacity will tend towards faster running engines. This is bad. But I think we may prevent any ill effects by stipulating that on the fourth, when the wheels are revolving at forty miles per hour, the revolutions shall not exceed, say, 1,200. This gives us 900 revolutions at 40 miles, which is about present practice. It will tend towards higher compression. I don't know that this is very bad—at any rate, not worth legislating against. It will tend to all kinds of little dodges to get advantages on the part of manufacturers. So much the better. If they are improvements, it is what we are aiming at.

And now as to the greatest objection which will be raised—speed. There is undeniably a great pleasure in running at a higher speed than we are accustomed to, but that has nothing to do with the pleasure of racing, that is a separate sensation altogether. What makes sport is the fact of a good man, or a good horse, boat, or yacht, trying to beat another man on equal terms, and trusting to his own skill and nerve to do it. Mere speed has nothing to do with it, so long as you are squeezing the last ounce out of your car in a level race. It would certainly mean racing at a maximum of, say, thirty-five miles next year instead of eighty, but we should do it ourselves; and which is the better sport for those who love it for its own sake? Is it to watch other people's paid professionals ride a flat race for you to look at, or to ride your own horse in a hunt steeplechase, owners up?

CLUB NEWS.

YORKSHIRE.

THE fourth annual dinner of the Yorkshire Automobile Club will take place at the Great Northern Hotel, Leeds, on Friday, the 4th prox. Several prominent automobilists have been invited to be present, including Mr. Jenatzy, and there is every prospect of a very good muster. Intimations of probable attendance should be sent to the hon. treasurer.

SCOTTISH.

MR. J. M. ROSE will introduce a discussion on the Ideal Touring Car at a meeting of the Scottish Club (Western Section) at the Windsor Hotel, Glasgow, on Monday next, the 23rd inst.

WOLVERHAMPTON.

A PAPER Chase has been arranged by the Wolverhampton Club for to-day (Saturday). Messrs. W. Owen and Walter Evans will act as hares, and start from the Top Green, Tettenhal, at 2.30 prompt. Confetti will be thrown from their respective cars to mark the course traversed. Ten minutes later the remaining members of the club present will follow as hounds and endeavour to overtake their quarry before reaching the rendezvous, the Barley Mow, Newport, at 4.30, at which hotel tea will be provided at 5 o'clock.

MANCHESTER.

AN extraordinary general meeting was held at the Albion Hotel, Manchester, on the 10th inst., Mr. Frederic Smith in the chair, to consider the affiliation agreement presented by the A.C.G.B.I. The Chairman, in opening the meeting, reminded the members that at the last extraordinary general meeting of the members of the club the Committee were empowered to make the best terms possible with the London Club. Some correspondence had taken place with the London Club and an offer had

* From a Paper read at the Automobile Club on November 12th, 1903.

been made to fix a maximum contribution at £100, approximately equivalent to a payment on a membership of 200, any increase in membership not to be subject to a payment. This suggestion, however, was somewhat curtly declined. The Committee felt that it was a reasonable one and might fairly have been entertained by the central body. There has been a growing feeling on the part of members against affiliation, and especially in view of an agreement that has been recently sent setting forth the terms of the relationship. By this agreement the Manchester Club would be bound for at least fourteen months from this time, and possibly for two years. There is also an objectionable clause limiting freedom of action in automobile matters. The Committee, therefore, did not care to undertake the responsibility of signing it without having another meeting of the members of the club. A number of clubs had signed it, among which were the names of the best known; still there were a number which had refused to sign.

The Committee itself was divided on the subject, and for the resolution which Mr. Lee put before the meeting there were seven of the Committee for it, and four against it. The following resolution was then proposed by Mr. H. Lee, and seconded by Mr. L. Schwabe, "That the London Automobile Club be informed that we have decided not to sign the affiliation agreement, and consequently our connection with them ceases at the end of the year." Mr. Henriques and Mr. Bone supported the resolution. Mr. Seddon expressed his opinion that the club ought to remain affiliated with the central body. He was strongly in favour of having a club house in Manchester, where members could meet. Mr. Grace supported Mr. Lee's resolution and reminded Mr. Seddon of the efforts made to come to terms with the London Club, and intimated that not the slightest effort had been made to meet their wishes. He was of opinion that it would be found necessary ultimately to separate the social part of the London Club from its political and general organisation. Further discussion took place, during which Mr. Rowcliffe intimated that in his opinion the club would be bound for two years if the agreement was signed. He expressed also his surprise at the feeling which existed against affiliation. After some further discussion, which was joined in by Mr. A. Morris, Mr. Herbert Bright, Mr. O'Neill, and Mr. Whittaker, the resolution was put to the meeting and carried by a large majority.

THE MOTOR-CAR.*

By ALEC GOVAN.

ON many important points no reliable scientific data can be found, and it may be said that the modern motor-car is the result of experience and experiment. This would appear to be the way in which many of our large industries have been built up, and therefore it need not alarm us. For example, it can only be approximately ascertained by the amount of vibration and shock that is absorbed by the springs and pneumatic tyres. Further, the road surface continually varies, and it is sometimes necessary to run over very rough roads with holes in them quite 6 inches deep. To be strong enough to stand this, and also light enough to carry four or five people at an average speed of twenty miles per hour, is a marvel to many engineers. The secret is found in the weight per horse-power. Many pleasure cars are now built which only weigh 1 cwt. for every horse-power given off by the motor. As the power required to climb hills increases in a direct ratio to the weight of the car and load, an enormous advantage is gained by keeping the car light. Of course, the reliability must not be sacrificed, but special materials of the most suitable quality must be used; aluminium wherever possible, and steel of different mixture best suited for the various purposes. The speed at which the engine shaft is running when giving off full power practically determines the weight of the whole car. It is therefore of the greatest importance that every encouragement and assistance should be given to the development of the high-speed engine.

The weight of the car per horse-power determines its efficiency as a hill-climber, and it also determines the cost of running per mile for tyres. There can be no doubt that where the mechanism is properly looked after the tyre bill is one of the biggest items.

At present improvements would appear to lie along the line of acceleration of engine speed and reduction of weight. These two factors demand simplicity. Any of the known systems of two-cycle engines, with their complicated valve gear and compression devices require such heavy plant that there does not appear any hope for them ever being adopted in motor-cars.

More weight does not mean reliability, and it is certainly disastrous to efficiency. A combination of reliability and efficiency can only be found when every part is designed in the simplest possible manner and the metal distributed to the best possible advantage; also a careful selection of the most suitable material for the purpose must be made; further, the car must be considered as a whole in order to get a proper distribution of strain and vibration. On the top of all this a very high standard of workmanship is absolutely required. Engineers complain that motor-cars are too light; it is a very easy matter indeed to make the parts heavy. In doing this the efficiency is destroyed. All the experience of designers has been concentrated in an effort to obtain reliability without sacrificing efficiency.

The gearing of the car sometimes is objected to, but when it is remembered that four times the power is required to take a car up hills met with,

it would appear that the gearing is preferable to such an increase in the size of the engine.

The advertised horse-power of cars is at the present time no guide to the purchaser. While makers have arrived at this factor in different ways, still, if only the brake horse-power was given, it would not be a reliable guide, as the efficiency of transmission and the weight of the car would still require to be taken into account. Results in public tests are also to some extent misleading, as excellent cars sometimes perform badly through a minor temporary defect. This fact was clearly demonstrated in the Thousand Miles Reliability Trial recently held, where marks were lost for every minute occupied in cleaning or making adjustments to the car, with the result that many of the cars were not seen to the best advantage, especially in the speed and hill-climbing tests.

If a quarter of an hour is given to the car before starting in the morning, there is now very little fear of even a slight stoppage in a day's run. Of course, cars that ran through those public tests well deserve all the credit they get.

Through discussions in societies, such as yours, the science of the motor-car will be evolved and one day written. No industry has ever made such rapid strides. It is difficult to realise that it is only four to six years ago since the early types of the well-known cars were built in this country. At first the public sneered and showed no belief whatever in the movement. As cars became better, cries were heard that they should again be abolished, and to-day we hear very little sneering at breakdowns, and have the satisfaction of knowing that the majority of the public recognise the fact that the motor-car has come to stay. Credit for this is due, in the first place, to the men who have mastered the mechanical details and placed the motor-car as a useful vehicle practically beyond reproach, and in the second place, to the organisers in the Automobile Club who have never wearied in their endeavours to show its possibilities to the public.

THE MOTOR-CAR ACT.

SCOTLAND.—At a meeting of the Langholm District Committee, it has been decided that the roads in the district shall be recommended for scheduling at a speed of only ten miles per hour, with the exception of that part of the road from Carlisle to Edinburgh passing through the district, which is to be an open one, i.e., a maximum speed of twenty miles an hour will be permitted along that particular stretch.—A meeting of North Ayrshire Council has been held at Kilwinning. The meeting expressed the opinion that the rate of speed in populous places should not exceed six miles an hour.—At the Eastern District of Stirlingshire Committee meeting an interesting discussion took place on the Motor Car Act. Mr. Salvesen, of Lathallan, Polmont, objected to the limiting of speed to ten miles an hour on certain roads. It would be a hardship to close certain bye-roads to motorists. The Committee agreed to recommend that, instead of prohibiting the use of some roads, these might be opened, provided that the rate did not exceed six miles.—At a meeting of the Brechin District Committee of the Forfar County Council, a list of the roads in the district and their widths and suitability for motor traffic was submitted, and led to a lengthy discussion. The Chairman pointed out various roads and portions of roads less than 16 feet wide, and also where, owing to sharpness of curves or steepness, motor traffic would be dangerous, and moved that these be scheduled, so that motors would be limited while passing over them to a speed of ten miles an hour. He further moved that where schools or school playgrounds were on the sides of roads that the rate of speed for 100 yards on each side of the schools should also be limited to ten miles an hour. The two motions were agreed to.

SURREY.—Application is to be made by the Highway Committee of the Kingston Town Council to the Local Government Board to



A Prospect of the Future: What may happen in the Highlan s.

* From a paper read before the Glasgow Scientific Society.

secure that motor-cars shall not proceed through the borough at a greater speed than ten miles an hour.—In regard to the Local Government Board's regulations, the Highway Committee of the Richmond Town Council believe that many highways in the borough are not suitable for motor-cars, and having regard to the narrowness of the highways generally, and to the heavy traffic, are of opinion that the speed should be restricted to ten miles an hour.

BUCKS.—The Beaconsfield Urban District Council is applying to have that portion of the main road from Oxford to London between the twenty-third and twenty-fourth milestone declared an area over which automobiles shall not travel at a speed of more than ten miles an hour.

ESSEX.—Mr. Percy Sheldon, the County Surveyor of Essex, has circularised all the surveyors of local authorities within his area, explaining that the expression "16 ft. in width" should be taken to mean that where sufficient space exists between hedge and hedge to admit of the roadway being enlarged to 16 ft. (should that space not already metalled or made up), the road, or section of road, should not be scheduled, irrespective of other considerations.

THE Thames Ditton Surveyor has suggested the placing of warning signposts at the following points:—St. Leonard's Road, Thames Ditton (approaching Portsmouth Road); the Cross Roads, Ditton Hill (near the Post Office); Woodstock Lane (near the Church); top and bottom of Red Lane, Claygate; the corner of Ember Lane, High Street, Esher (at the top of the hill); Lammas Hill; Cato's Hill and the railway arches, Thames Ditton station. This has been agreed to by the local Council.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Farnham	Major Combe, Frensham	21	£1, etc.
Guildford ...	R. Batchelor, Pall Mall, S.W.	21	£1.
"	J. H. Novis, Gravesend	20	£3.
"	O. Archer, Hove	21	£3.
"	G. Merton, Mile End, E.	—	£5.
"	G. C. Halahan, Chiddingfold	—	Adjourned.
Brighton	R. Snelling, Rowfant	18	£3, etc.
"	J. Henley, Brighton	18	£3, etc.
Dumbarton...	R. L. Rankin, Alexandra, N.B.	32	Not Proven
London, S.W.	P. Brodtmann, Bayswater	18	40s., etc.
"	C. Phillips, St. James's, S.W.	19	50s., etc.
Otley	A. Macvie, Baildon	20	40s., etc.
"	E. Gaunt, Ilkley	25	40s., etc.
"	A. Bastide, Elland	18	Dismissed.
Havant	H. W. White, Southsea	20	40s., etc.
Stourbridge	D. Moore, Oldswinford	—	£2, etc.
Shoreham ...	R. Snelling	25	£10.
Gloucester ..	E. Hardacre, Bath	—	£2, etc.

At Marlborough Street (London) Police-court seven motorists have been summoned, before Mr. Denman, for exceeding the 12 mile speed limit on their motor-cars in Hyde Park. Most of them expressed surprise at the speed at which their cars went, the police putting the rate at an average of 23 miles an hour.

At Lewes, Mr. Alderman Robb, of Tunbridge Wells, was summoned for driving his car on the Lewes road in excess of the legal limit. The defendant, who was defended by Mr. Marx, called evidence to prove that the electrical timing device employed by the police was faulty, and the chief witness was Mr. Horace Boot, consulting and resident engineer to the Tunbridge Wells Corporation, who produced plans showing the arrangement by which the police time motorists. The Bench showed considerable interest in the point, as the electrical arrangements had never been contested before. The police alleged that the car was travelling at 25 miles an hour, but the Bench dismissed the case.

At Marlborough Street (London) Police Court, R. H. Wilding, of Dalwhinnie, Highland Road, Bromley, Kent, and Frank Rolfe, Cranbury Road, Fulham, were summoned for driving motor-cars at a greater speed than twelve miles an hour in Hyde Park. The cases having been proved, Mr. Sheil fined Mr. Wilding, who was summoned for two occasions, penalties amounting to £8 4s., with costs, and Mr. Rolfe £3, with 2s. costs.

CONTRADICTORY evidence was given in the case of Mr. F. D. Taylor at the Neston, near Liverpool, Court. The police declared that the measured mile was covered at the rate of twenty-five miles an hour, while the defendant, who was following a couple of cyclists, did not think he was going at more than half that pace.

REFERRED TO ARBITRATION.

In the Birmingham County Court reference has been made to the action brought by Dr. A. R. Badger, Wheleys Road, Edgbaston, against Mr. F. A. Powell, of the Birmingham Motor Mart, for the recovery of £50

damages for alleged fraudulent misrepresentation in regard to a motor-car. The case was opened by Mr. McCardie, but it was decided, owing to the technical questions involved, to refer the matter to an arbitrator. On the second day counsel said that it was only fair to all concerned that the charges of fraud he had made should be withdrawn. Mr. Hirst, on behalf of defendant, agreed that it was perfectly fair on the part of Mr. McCardie to withdraw the charges. His Honour thought that the decision of the parties to refer the matter to an arbitrator was a wise one, for it would have been a very difficult thing for the jury to deal with. It was agreed, on the suggestion of Mr. McCardie, that the case should be adjourned *sine die* instead of being struck off the list.

POLICE TRAPS.

At the Otley Police Court the plan of a police trap on the Bradford road between Menston and Burley has been explained. The method of timing is by means of an ordinary watch. When the signal by handkerchief is given, a constable touches the sergeant's arm, and the sergeant takes note of the period from that second to the time of a further touch indicating that the test quarter has been covered.

MOTOR-CAR ACCIDENTS.

BEFORE Sir Alfred Cooper, at Kingston-on-Thames Police Court, on Monday, Mr. Rupert D'Oyly Carte, of the Albany, Piccadilly, was charged with wantonly and furiously driving a motor-car and knocking down Theodora Franklin, aged three, thereby causing her bodily harm. Mr. G. Sillar stated that he was passing along the Portsmouth road at Long Ditton, on Sunday afternoon, when he saw a motor-car driven by Mr. D'Oyly Carte approaching. It was behind three others, and was travelling at a high rate of speed. After going a short distance the car suddenly swerved to the left, and immediately afterwards pulled up. The witness thought the car swerved to escape a dog, but ascertained that a child had been knocked down. Constable Smith said the motorist pulled up immediately after the accident. The defendant was remanded on bail for a week, and his solicitor on his behalf expressed great sorrow at the accident.

HENRY GIBBINGS, aged thirteen, of Wimbledon, was struck in the back by a motor-car, whilst walking on the footway near the local Free Library, the car being driven by Mr. Walter White, of 35, King's Street, Regent Street, W. It is stated that Mr. White tried to avoid running over a woman who was crossing the road, and that the machine swerved on to the pavement, catching the boy, who was dragged along some yards.

At the South West London Police Court, Frank Colliard has been remanded on £100 bail. He was charged with furiously driving a motor-car and causing bodily injury to Henry Headhouse, a milk carrier, in the service of a Tooting dairyman.

CHOCOLLE, who was the mechanic on Danjean's car which met with the serious accident on the day of the Gaillon hill-climb, has succumbed to his injuries.

THE Glasgow to London non-stop trial for 1904, organised by the Western Section of the Scottish Automobile Club, will take place on the 19th and 20th May. The rules and conditions of the trial are being considered by a special committee.

THE South Eastern and Chatham Railway Company have agreed to issue railway tickets at reduced rates to members of the A.C.G.B.I. and their friends who go to Paris for the automobile exhibition, which opens on the 10th prox.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, NOVEMBER 28, 1903.

[No. 247.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



IN issuing their regulations to the councils of counties and county boroughs the Local Government Board point out that the term motor-cycle is not defined in the Act, but that they regard it as "limited to motor-cars designed to travel on not more than three wheels and weighing, unladen, not more than three cwt." It is not thought desirable that numbers consisting of more than three figures should be assigned, and the Local Government Board will be prepared, if desired, to assign a fresh index mark to any Council that may require to

start a fresh series of numbers under a new mark. When applying for the registration of a car the owner will be required to notify the positions on the car on which it is proposed to place the plates, and these will have to be satisfactory to the council before the registration takes place. The idea of the public inspection of the register has wisely been abandoned.

The Licensing of Drivers.

THE licence to drive a motor-vehicle must be produced by any person driving a motor-car, when demanded by a policeman. Under the new law the driver of an automobile is under considerably more statutory restraint than heretofore, and he incurs a much more serious liability if he fails to observe the conditions imposed upon him. One interesting point has been settled with regard to paid drivers. By section 13 of the Act, a male person employed to drive a motor-car is deemed to be a male servant for purposes of licence duty. The Inland Revenue Commissioners, however, do not propose to require the payment of male servant licence duty in respect of servants employed to drive motor vehicles which are properly inscribed with the owner's name and address and are used solely in such a way as to come within the scope of the exemption from carriage licence duty conferred in favour of trade carts.

The New Regulations.

ELSEWHERE we give a review of the Regulations, and although they show some variation from the original draft, as published in our issue of the 31st ult., it is clear that the first scheme has been adhered to in the main. Still the concessions demonstrate that the views of the various trade associations, the clubs, and the automobile press received full consideration from the Local Government Board, and, on the whole, Mr. Walter Long appears to have acted in a very generous spirit in framing the Regulations. It is evident, too, that our early publication of the intentions of the Board has been of great service to the movement, thus securing a wide discussion and giving everyone interested prompt opportunity of criticism. These criticisms have been carefully considered by the Local Government Board, and the reasonableness of some of the new Regulations may be traced to newspaper correspondence.

The Gordon Bennett Race.

A MORE widespread interest is being aroused in the Gordon Bennett Cup Race this year than ever before. While the largest number of countries represented in any previous Cup race was four, it is now tolerably certain that next year will see at least six teams in the field. The national clubs of Great Britain, France, Belgium, Austria, and Italy have all either already sent in their challenges to the German Club or are preparing to do so. In the United States, remarks the "Horseless Age," there seems to be less enthusiasm about entering the race this year than last. Aside from the fact that Barney Oldfield recently expressed a wish that he might be a competitor in next year's race, no manufacturer seems yet to have volunteered to represent the colours of the American Club, which has just sent out an invitation for entries to all its members and to the manufacturers, in which it is stated that entries will be received until December 15th, and that they must be accompanied by a deposit of £120, which will be returned if the car starts. It is most likely that America will be represented by at least one starter; but our contemporary considers it doubtful whether it will have a full team in the field.

A 100-h.p. Racer for the English Team.

WE understand that work has been commenced on the construction of a six-cylinder racing car of no less than 100-h.p., intended for the eliminating race for the English Gordon Bennett team. We are not at liberty to give the name of the gentleman for whom it is being built, but may mention that, although he has not hitherto competed in the Cup races, his skilful handling of a 60-h.p. Mercedes during the past season has won for him a prominent position in the racing world.

The "Pedrail."

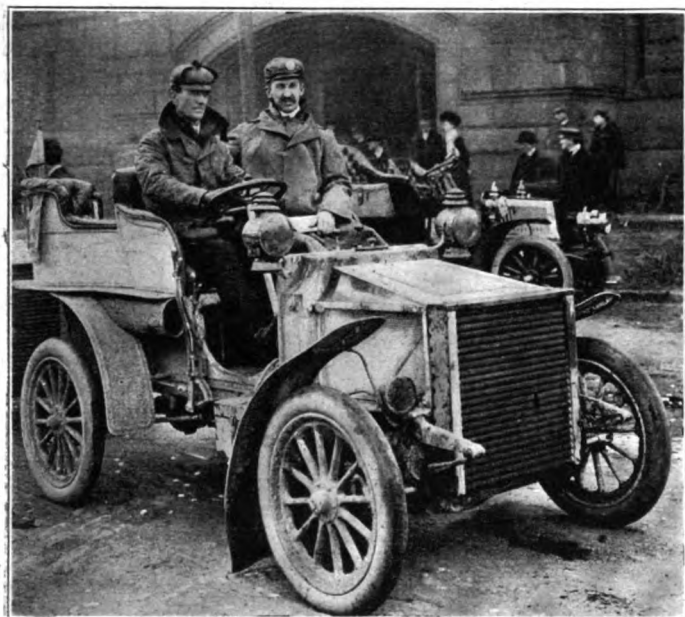
IN our issue of January 3rd last, we gave a description of a new system of heavy goods transport on common roads, illustrating the same with a view of Mr. Diplock's "Pedrail" mounting an obstacle. On Tuesday last we were invited to a cinematograph demonstration of the Pedrail engine in motion. In our illustration the Pedrail was shown with the front wheels working on feet, and the back wheels similar to ordinary traction wheels. In the later form, however, all four wheels are built alike, being driven by one motor, each wheel acting as a steerer. There are sixteen feet on the front wheels and fourteen feet on the rear ones, and when the cinematograph started, the vehicle was shown trailing six laden lorries, a later view showing the Pedrail unloading by means of the crane which is a part of the system. The vehicle then travelled backwards and forwards, and passed over obstacles, with one and both wheels, nine and ten inches high. Generally it seems not only a most ingenious vehicle, but one that is likely to revolutionise work in agricultural districts, being capable of carrying many tons of produce to the railways, thereafter unloading by means of the crane. It is claimed that very little damage is done to the roads, but as the system is still somewhat experimental, time alone will prove whether this is so.

B.

It is possible that one of the vehicles will be seen in the south in March next. Meanwhile it is to be the subject of a paper to be read this (Saturday) evening by Professor Hele Shaw at Liverpool.

The American Reliability Trials.

THE executive of the National Association of Automobile Manufacturers, after discussing the report on the New York-Pittsburg endurance run, rendered by a special committee, decided to award a first-class certificate to the makers of each car that reached Pittsburg, and gold medals to the manufacturers of certain cars whose performances were particularly meritorious. The special committee found that from Thursday, October 8th, to Saturday, October 10th, inclusive, the road conditions were of such a character as to completely annihilate the possibility of conducting the run upon the plan originally outlined in all its details. When it is taken into consideration that for thirty-six hours railway trains were delayed, and in many cases



Mr. Webb Jay on one of the successful White Steam Cars in the American Reliability Trials.

abandoned, and that it was impossible to send goods out of New York for forty-eight hours, it will be easily understood that the road conditions were abnormal. The fact that, despite all these difficulties, twenty-four of the original thirty-four starters, in addition to two pilot cars and two accompanying tourists, reached Pittsburg, is, in the opinion of the committee, the finest testimonial of the stability and practicability of the American automobile it would have been possible to have obtained in any manner. The cars to which first-class certificates are being issued are as follows:—Class A—Retailing for 1,000 dollars or less.—2 Ramblers, Fredonia, and 2 Oldsmobiles; Class B—1,001 to 1,500 dollars, inclusive.—Pierce, Fredonia, Knox, two Franklins, Haynes-Apperson, and St. Louis. Class D—1,501 to 2,000 dollars, inclusive.—Toledo. Class D—2,001 to 2,500 dollars, inclusive.—Two White steamers, Pierce Arrow, Packard, two Knox cars, and Haynes-Apperson. Class E—2,501 to 3,000 dollars, inclusive.—Stearns. Class G—Selling for more than 3,500 dollars.—Two Columbias, Toledo, and Locomobile.

The Herkomer Trophy International Touring Competition.

Automobile Club. The rules, as will be seen, are fairly stringent,

On another page we print a summary of the regulations which have been drawn up in connection with the international touring car competition for the £500 trophy Professor Hubert von Herkomer recently offered to the Bavarian

but, having regard to the experience of the recent Reliability Trials in this country, are not such as should prove onerous for modern reliable touring cars. The first contest is to take place in Bavaria in August next, the A.C.G.B.I. having the right to enter sixteen vehicles. There is no doubt that keen interest will be shown in the contest by German and French motor-car builders, and it is to be hoped that British makers will endeavour to be worthily represented in a competition which is likely to prove of considerable benefit to the industry in general.

A Yorkshire Trap.

LOOSENESS in police methods is not confined to the south, and the way in which the police work a trap on the road from Bradford to Menston calls for comment. In a case before the Otley West Riding magistrates against a well-known Brighousesolicitor, Mr. Arthur Bastide, the police-constable said there was a measured quarter of a mile. At the beginning of this distance stood another constable, who, when the car passed him, signalled with a handkerchief to witness, who immediately touched Sergeant Kelly, who held the watch. When the car had reached the end of the measured distance he touched Sergeant Kelly again, the sergeant being about a hundred yards from the finishing point. The watch by which the speed of the car was timed was an ordinary silver watch, and evidently the Bench recognised the inadequacy of such arrangements for accurate timing, for they dismissed the case without delay.

Independence on the Bench.

SUCH independence of view deserves commendation, for unfortunately it is somewhat exceptional. The partiality of magistrates in accepting police evidence without demur has been so noticeable as to seriously disturb the respect which many law-abiding citizens previously entertained for the Bench. We have little quarrel with legislation regarding motor-cars, the main objection hitherto raised having been almost wholly concerned with the spirit and tone of the method of administration. That has generally left much to be desired.

Social Gatherings.

THE last days of November have been full of interest to motorists by reason of the cycle shows, in which automobilism now has a conspicuous place; the early days of December will be equally full owing to the many social functions that will take place. On the 1st prox. there will be the annual dinner of the Auto Cycle Club; on the following evening the dinner of founder members and members of the club committee of the A.C.G.B.I. will take place; on Thursday next M. Forestier's paper will attract a goodly number to the house dinner of the club; on the 7th the Scottish Club will have its annual dinner; on the 8th the Motor Volunteers will dine together, and then all the trade will rush to the Paris Salon. With reference to the visit of M. Forestier, many motorists have pleasant recollections of a previous paper he read to the Liverpool Self Propelled Traffic Association, and doubtless the event will have many of the features of a happy re-union.

Closing Devon Roads.

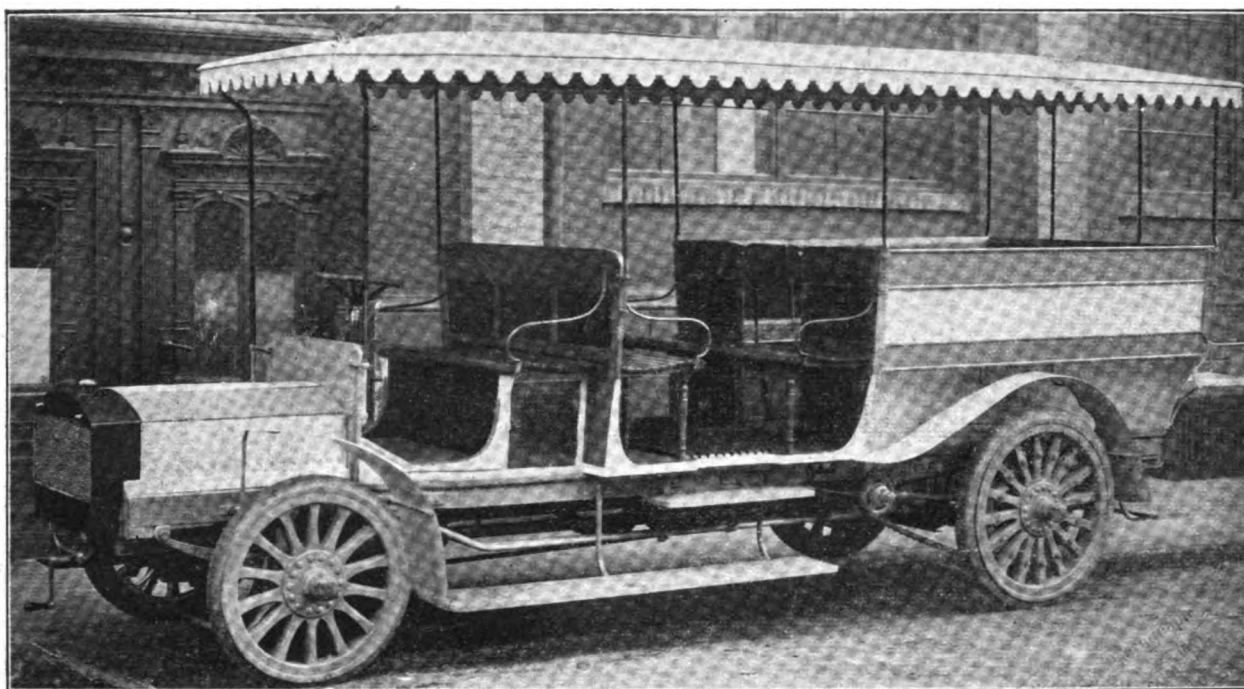
CONSIDERABLE indignation is felt at Lynton at the decision of the Barnstaple Rural District Committee to advise the closing of the Countisbury Hill from Blue Ball to Lynmouth to motor-cars. The most dangerous part of the hill is at the bottom, and the speed might well be limited there to four or even to two miles per hour. But this is not the only dangerous hill in this lovely district, and the danger exists for the four-horsed coaches as well as for the motor-car. The remedy would, says the "Western Morning News," appear to be to widen and

improve the roads in every way possible, and not to "bottle up these lovely twins," and take off part of their "feed," i.e., summer revenue. The Lynton people are very poor, and cannot afford to quietly contemplate such action as the closing to motorists (a largely increasing factor) of the only direct coast route from Minehead to Lynton and Ilfracombe and the West.

Alternative Routes Wanted.

THIS raises a point which should be carefully noted by every motorist who has influence with local councillors in any part of the country. To suggest to close roads to motorists and still allow four-horsed coaches to go their way appears inconsistent; but, seeing that the legislature gives this power to the Local Government Board, it is idle to complain. Still we do suggest that the duty of the local authority does not end with the recommendation to close the roads. Alternative routes must be suggested, and signposts fixed some distance from the entrance to such barred highways giving particulars of

likely to be required. The change speed gear box the differential gear box and the clutch should be so placed that they can be readily seen. Mr. Ross made a strong point of the brakes with which the car should be fitted, and held that on a touring car the absolute efficiency under all circumstances of both brakes was essential. In dealing with tyres, in which respect he indicated a preference for pneumatics, he mentioned that every touring car, if to be used in all weathers, must carry some non-slipping device. Mr. Ross then dealt with the shape of touring bodies, which he thought should be "tonneau." The accumulators should be in a box on the step at the driving side, and the whole space under the seat should be reserved for carrying coats and luggage. He advocated facilities for carrying a reasonable amount of petrol either in a spare tank or by fitting a box beneath the car, which would be removable, to hold four or five tins. The car should have special attention paid to minor details of construction, such as the use of more crown nuts and split pins, so that the worry and trouble to the owner would be the least possible, that chains should be run in gear cases, and that some means should be provided whereby, when a car is left



The Durkopp 18-h.p. Public Service Vehicle (see page 751).

the road to be followed. Otherwise motorists may have to retrace their tracks a few miles in order to get on to the roadway to their destination. This is a matter that must be insisted upon, otherwise the trials of patience and of temper that will take place may be too much for human nature to silently endure.

The Ideal Touring Car.

A MEETING of the Scottish Automobile Club (Western Section) was held in the Windsor Hotel, Glasgow, on Monday, Mr. John Adam, the chairman of the Section, presiding. Mr. John M. Ross read a paper on "The Ideal Touring Car." He thought a touring car should be fitted with an engine sufficiently powerful to give an average speed of twenty miles per hour on an ordinary give and take road, and which would climb hills at a good speed. This latter was more important than the ability to make high speeds on the level. It should also be able to climb any hill on its low gear, and to be possible of being driven slowly on the highest gear. The engine should be easy of access, more particularly those parts where adjustments are

standing, the change-speed gear handle, switch, petrol tap and lubricators could be so locked as to render interference with them impossible.

The Yorkshire Club.

THE Club Room of the Yorkshire Club is now in full swing at the Great Northern Hotel, Leeds, and may always be seen occupied by some of the club motorists. On Tuesday, the 8th prox., Mr. Herbert A. Jones, of Bradford, will read a paper entitled "The new Motor Act and its Effect on Motorists." There will be a large number of sample speedometers, new regulation lamps, etc., exhibited for inspection. The annual dinner of the club will take place on the 4th prox.

Solids v. Pneumatics.

MR. JAMES BURNS, speaking at the Scottish Club meeting, thought it was an advantage that a checking tendency should be placed upon speeds by the inability of cars to take hills at the same speed as on the level, and he thought an essential feature of an ideal touring car was that it was in-

capable of encouraging any tendency to scorch. He was strongly of the view that solid tyres were, until a more perfect pneumatic has been invented, the more suitable for touring purposes. Mr. Burns related some personal experiences of six years' motoring without any expert assistance of any kind, and stated that, while he had had petty troubles, he had had none that could in any sense be called serious, and he had formed the conclusion that breakdowns of cars arose, not from the fault of the cars, but from the lack of knowledge and inexperience of those in charge of them.

Motor Volunteers.

UNDER the presidency of Lieut.-Col. Mayhew, a meeting was held at the A.C.G.B.I. on Thursday of last week to hear a paper by Mr. J. F. Ochs on "Motor Vehicles at the Manœuvres." This proved an interesting history of the movement, from the early part of 1901, when General Sir Redvers Buller used a motor-car in the Cavalry Manœuvres, to the recent successful experiences on Salisbury Plain. At present the Motor Volunteer Corps consists of twenty-four officers and eighty-nine members, besides the adjutant and permanent staff. In the last manœuvres forty-three cars and thirty-one motor-cycles took part, the former having an average b.h.p. of twelve. During the four days of the manœuvres, 1,200 gallons of petrol were supplied by the Government. Mr. Ochs was enthusiastic as to the good service rendered by the motor volunteers, and having given some interesting experiences, added a few words as to the car required for military purposes.

The Military Motor Car.

SUCH a car should, in the first place, stand from the ground as high as possible, for naturally, in going over rough roads and over fields, there were many obstacles met with in the middle of the road or elsewhere, and there was not always room to steer round them. Then, again, the car should be of high power, but able to run on its low speed without weakening the engine. This is a very serious point, because it was very often necessary to run at the rate of four miles an hour for miles and miles. Then, again, the tonneau should be a roomy one where possible, for commanding officers generally preferred, if possible, to keep their staff with them in their own car, rather than have them following in a second car, for fear there should be any breakdown in one or other of them. Of course, if cars could be built narrower than they are at present that would be an enormous advantage, and Mr. Ochs believes that this is a technical possibility.

Heavy Oil Motors Wanted.

The discussion on the paper was opened by Major Lloyd, who said it would have been impossible to have carried out the manœuvres as they were arranged without the assistance of the motor-car. The whole scheme of the manœuvres, indeed, was based on the motor-cars doing the work expected of them without any hitch, and the fact that the manœuvres had not broken down was enough to show that the work had been done. At one of the "pow-wows" six or eight cars were taken into the middle of a stubble field where the meeting was held, and over which there was no road, this showing that cars, if carefully driven, could get to places where one would scarcely expect them to go. One great point made by Mr. Ochs had been that the cars should be built higher off the ground. He quite agreed with that. It would be absolutely necessary, when they had to get the real fighting officer over rough ground, that they should be able to do so without fear of knocking off an exhaust box, bending an axle, or running against a snag. The two great things necessary for the military motor-car were proper clearance from the ground and the ability to use ordinary heavy oil, such as was obtainable anywhere. That car was going to come when they were able to get more perfect combustion of fuel, and he hoped all manufacturers would work towards its evolution, as

they would never get a satisfactory car for use in warfare so long as they had to carry petroleum spirit. They must be able to use the comparatively safe heavy oil obtainable in countries where the actual fighting had to be done.

The Experiences of a Volunteer.

INTERESTING experiences having been contributed by Mr. N. B. Kenealy and Major K. R. Balfour, Mr. Ernest Polden presented what he rightly termed the other side of the picture in a speech which convulsed his audience. Even those who were shocked at the way he rode roughshod over their ideas of military decorum were forced to relax into smiles as he told his tale of woe. After having his car three days and three nights in a damp meadow, it was used for carrying officers' baggage and champagne—a kind of Carter, Paterson's job. At Cosham there were four cars, all broken down because of the treatment they had received. It was a great mistake that there should be any distinction as between officers and privates, and he held that they should all be called members of the Motor Volunteer Corps. Being a lover of horses, he had caused one of the umpires to remonstrate with one of the combatants who had stopped some of the Transport Corps on a hill, causing needless trouble to the horses—and the umpires had got into trouble for interference. Altogether, Mr. Polden did not like motor volunteering, and, after a series of misfortunes, he had to expend £85 to get his car put right.

Essentials.

CAPTAIN CAMPBELL having advocated the use of cars for scouting purposes, the Hon. C. S. Rolls—to whose enthusiasm Major Lloyd had referred in his speech—gave his views as to the most suitable type of cars for military purposes. This should be absolutely reliable, every attention being paid to the ignition. It should be capable of being started rapidly and turned quickly, as it might have to travel for miles among horses. Very low gears were necessary, and the vehicle should not be built too low. Lieut.-Colonel Mayhew, in concluding the discussion, said that the Corps was a military organisation, and all military organisations had officers to lead and control the regiment. A hearty vote of thanks was accorded Mr. Ochs, who briefly replied.

The Aero Club.

THIS growing organisation held its annual dinner on Wednesday, at the Carlton Hotel London, Mr. Roger Wallace, K.C., in the chair. The proceedings passed off with éclat, the company including Comte de la Vaulx, who holds the record for ballooning. It will interest our readers to know that at the Ninth International Motor-Car Exhibition, to be held at the Agricultural Hall in the spring, the Aero Club will be represented by an attractive exhibition in the north annexe. In view of the developing public interest in the locomotion of the air, this new feature should prove a welcome addition to a display of automobilism that bids fair to excel anything of the kind previously held in this country.

A NUMBER of automobile clubs in the United States propose to organise club tours to the St. Louis Exhibition next summer.

THE French Touring Club has decided to put up a warning notice board at the turning at Bonnières where the Serpollet car recently came to grief.

THE Mayor of Annonay, Ardeche, France, has issued a regulation restricting the speed of motor-cars through the town to six kilometres per hour.

AT the moment of going to press we learn that M. Forestier will be unable to read his paper at the A.C.G.B.I. on Thursday next, and that his place will be taken by the Hon. C. S. Rolls.

MAINLY owing to the lack of entries our contemporary, "Le Monde Sportif," has postponed both the Criterium d'Electricite and the Criterium de Regularite, which were to have been held this week.

THE MOTOR-CAR ACT.

REGULATIONS OF THE LOCAL GOVERNMENT BOARD.

IN accordance with the Locomotives on Highways Act of 1896, and the Motor Car Act of 1903, the Local Government Board has power to make Regulations with regard to the registration of cars and licensing of drivers. Motorists generally have anticipated with considerable interest the scope and tenor of these Regulations, a forecast of which was given in our issue of the 31st ult.

REGISTRATION OF CARS.

The Regulations, which have just been issued officially provide that the Councils of all counties and county boroughs shall establish and keep a Register of Motor-Cars.

So far as motor-cars are concerned, this will have to give the following particulars:—

1. Index mark and number on identification plate. 2. Name and address of owner. 3. Description or type of car. 4. Type or colour of body of car. 5. Weight unladen. 6. Whether intended for—(a) private use; (b) trade purposes; (c) as a public conveyance. 7. Date of registration. 8. If cancelled, date of cancellation. In the case of motor-cycles all these particulars will be required except the fourth.

Owners of cars, desirous of registration, will be required to forward to the Council of the County or County Borough the necessary particulars to be specified in the Register of Motor-Cars, together with 20s., in the case of motor-cars, or 5s. for motor-cycles. The Council will then register the vehicle, giving it a number. The owner will be furnished with a copy of the entries in the Register of Motor-Cars relating to his own vehicle.

Should the ownership of a registered car be changed, the new or the old owner must give notice to the Council with whom the car is registered, and an application be made either to cancel the registration or to continue the registration under the new ownership. The new owner may continue the registration on payment of a fee of 5s. for cars and 1s. for motor-cycles.

IDENTIFICATION MARKS.

The mark to be carried by a registered motor-car shall consist of two plates conforming to the Regulations or a design, painted or otherwise, shown upon the car—provided this also is in accordance with the Regulations. Rectangular plates with a black ground and letters and figures in white will be required. These must bear the index mark of the Council and the number assigned to the car, the letters and numbers being in a continuous row, thus—

AB 242

or the letters above the figures, as in this alternative example—

**AB
242**

The letters and figures must be three and a half inches high—those in our examples are $\frac{3}{4}$ inch—every part of every letter and

figure must be five-eighths of an inch broad, and the total width of space taken by every letter or figure, except in the case of the figure 1, must be two and a half inches. The space between adjoining letters and between adjoining figures must be half an inch, and there must be a margin between the nearest part of any letter or figure and the top and bottom of the plate of at least half an inch, and between the nearest part of any letter or figure and the sides of the plate of at least half an inch. Should the first example be adopted the space between the letters and the figures must be one and a half inches; in the second case the space between the upper and lower line must be three-quarters of an inch.

In the case of motor-tricycles or motor-bicycles of a weight, unladen, not exceeding 3 cwt. each of the foregoing dimensions must be halved, and the shape of the plate need not be rectangular so long as the minimum margin between any letter or figure and the top, bottom, and sides of the plate is preserved.

These plates are to be fixed, one on the front of, and the other on the back of, the motor-car, in an upright position, so that every letter or figure on the plate is upright and easily distinguishable. When another vehicle is attached to a motor-car either in front or behind the plate required to be fixed on the front or on the back of the car, or a duplicate of such plate shall be fixed on the front or on the back of the vehicle attached.

The supply of the plates is optional with the owner of the car or the Council. The Council with whom the car is registered may, if they think fit, supply to the owner of the car, if he so desires, the plates forming the identification marks making the necessary change. Or the owner may obtain the plates for himself.

Whenever the vehicle is used on a public highway, between one hour after sunset and one hour before sunrise, lamps will have to be kept burning, so that the plates on the car shall be illuminated (by means of reflection, transparency, or otherwise) in a way sufficient to secure the letters and figures being easily legible from in front and behind the automobile.

THE TRADER'S MARK.

In Section 2 of the Act of 1903 provision is made that the Council might assign to any manufacturer of, or dealer in motor-cars for use in connection with motor-cars on trial after completion, or on trial by an intending purchaser, a general identification mark. This the Local Government Board will require shall consist of two plates, each bearing the index mark of the Council and some other distinguishing letter or letters. The colouring of the plates will have to be different from that used for the plates forming the ordinary identification mark. The manufacturer or dealer will be required to keep a record of the distinguishing numbers placed on the identification plate when the cars are used, and of the name and address of the driver. This will be open to inspection by the Council, some superior officer of police, or authorised constable.

DRIVING LICENCES.

With regard to the licensing of persons to drive motor-cars or motor-cycles, the applicant shall furnish the Council with particulars as to name and address, etc., together with the fee of 5s. provided for by the Act of 1903. Anyone not resident in the United Kingdom may apply to the Council of any County or County Borough for a licence or for the renewal of same. All applicants for licences will have to fill up a schedule requiring the following information:—

1. Name. 2. Address. 3. Whether application is for licence to drive a car or motor cycle. 4. Whether applicant is less than seventeen years of age, or in the case of an application limited to driving motor-cycles whether he is less than fourteen years of age. 5. Whether applicant holds, or has held, a licence. 6. Particulars of such licence. 7. Particulars of any endorsement on any licence which the applicant holds. 8. Particulars of any disqualifications the applicant may have incurred.

In the case of applications made before January 1st next, the particulars under the first four heads only need be given.

In calculating for the purpose of these Regulations the weight of a motor-car or motor-cycle unladen, the weight of any water, fuel, or accumulators used for the purpose of propulsion will not be included.

INDEX letters assigned to the COUNTIES and COUNTY BOROUGHs.

Counties.	Index Mark.	Counties.	Index Mark.
Anglesey - - - -	E.Y.	London - - - -	A.
Bedfordshire - -	B.M.	Merionethshire -	F.F.
Berkshire - - - -	B.L.	Middlesex - - -	H.
Breconshire - - -	E.U.	Monmouthshire -	A.X.
Buckinghamshire -	B.H.	Montgomeryshire -	E.P.
Cambridgeshire -	C.E.	Norfolk - - - -	A.H.
Cardiganshire - -	E.J.	Northamptonshire	B.D.
Carmarthenshire -	B.X.	Northumberland -	X.
Carnarvonshire -	C.C.	Nottinghamshire -	A.L.
Cheshire - - - -	M.	Oxfordshire - - -	B.W.
Cornwall - - - -	A.F.	Pembrokeshire - -	D.E.
Cumberland - - -	A.O.	Peterborough, Soke	F.L.
Denbighshire - -	C.A.	Radnorshire - - -	F.O.
Derbyshire - - -	R.	Rutland - - - -	F.P.
Devonshire - - -	T.	Salop - - - -	A.W.
Dorset - - - -	B.F.	Somerset - - - -	Y.
Durham - - - -	J.	Southampton - -	A.A.
Ely, Isle of - - -	E.B.	Staffordshire - -	E.
Essex - - - -	F.	Suffolk, East - -	B.J.
Flintshire - - -	D.M.	Suffolk, West - -	C.F.
Glamorganshire -	L.	Surrey - - - -	P.
Gloucestershire -	A.D.	Sussex, East - - -	A.P.
Herefordshire - -	C.J.	Sussex, West - - -	B.P.
Hertfordshire - -	A.R.	Warwickshire - -	A.C.
Huntingdonshire -	E.W.	Westmorland - - -	E.C.
Kent - - - -	D.	Wight, Isle of - -	D.L.
Lancashire - - -	B.	Wiltshire - - - -	A.M.
Leicestershire - -	A.Y.	Worcestershire - -	A.B.
Lincolnshire, Parts of	D.O.	Yorkshire (East Riding)	B.T.
Lincolnshire, Parts of	C.T.	Yorkshire (North Riding)	A.J.
Lincolnshire, Parts of	B.E.	Yorkshire (West Riding)	C.

County Boroughs.	Index Mark.	County Boroughs.	Index Mark.
Barrow-in-Furness -	E.O.	Lincoln - - - -	F.E.
Bath - - - -	F.B.	Liverpool - - - -	K.
Birkenhead - - -	C.M.	Manchester - - -	N.
Birmingham - - -	O.	Middlesbrough - -	D.C.
Blackburn - - - -	C.B.	Newcastle-upon-Tyne	B.B.
Bolton - - - -	B.N.	Newport (Monmouth)	D.W.
Bootle - - - -	E.M.	Northampton - - -	D.F.
Bournemouth - - -	E.L.	Norwich - - - -	C.L.
Bradford - - - -	A.K.	Nottingham - - -	A.U.
Brighton - - - -	C.D.	Oldham - - - -	B.U.
Bristol - - - -	A.E.	Oxford - - - -	F.C.
Burnley - - - -	C.W.	Plymouth - - - -	C.O.
Burton-upon-Trent -	F.A.	Portsmouth - - -	K.B.
Bury - - - -	E.N.	Preston - - - -	C.K.
Canterbury - - -	F.N.	Reading - - - -	D.P.
Cardiff - - - -	B.O.	Rochdale - - - -	D.K.
Chester - - - -	F.M.	Rotherham - - -	E.T.
Coventry - - - -	D.U.	St. Helens - - -	D.J.
Croydon - - - -	B.Y.	Salford - - - -	B.A.
Derby - - - -	C.H.	Sheffield - - - -	W.
Devonport - - - -	D.R.	Southampton - -	C.R.
Dudley - - - -	F.D.	South Shields - -	C.U.
Exeter - - - -	F.J.	Stockport - - - -	D.B.
Gateshead - - - -	C.N.	Sunderland - - -	B.R.
Gloucester - - - -	F.H.	Swansea - - - -	C.Y.
Great Yarmouth - -	E.X.	Walsall - - - -	D.H.
Grimsby - - - -	E.E.	Warrington - - -	E.D.
Halifax - - - -	C.P.	West Bromwich - -	E.A.
Hanley - - - -	E.H.	West Ham - - - -	A.N.
Hastings - - - -	D.Y.	West Hartlepool -	E.F.
Huddersfield - - -	C.X.	Wigan - - - -	E.K.
Ipswich - - - -	D.X.	Wolverhampton - -	D.A.
Kingston-upon-Hull	A.T.	Worcester - - - -	F.K.
Leeds - - - -	U.	York - - - -	D.N.
Leicester - - - -	B.C.		

THE CARE OF MOTOR-CARS.

IN a lengthy and extremely varied personal as well as professional experience with automobiles I cannot recall anything, remarks Mr. V. J. Kelley in the "Automobile Magazine," in which the users of motor vehicles are so unanimous as they are in the variety of their opinions about the same make of vehicles. Take ten owners of any given make of car and ask each one of them what he thinks of the vehicle he uses, and you will get ten different opinions, running the gamut from "the worst ever" to "the only vehicle in the world." Granting that each of the ten is honest, and there exists no reason for him to be biased, there can be only two explanations why this wide divergence of opinion exists.

Either cars of the same make and identically the same model vary greatly in their performances and their stability, or some of their owners handle them more intelligently, hence less injuriously, than others. Where vehicles of the same construction and virtually the same age vary widely in the way they meet practically the same demands, no other valid explanation of this variation than the inequality of their drivers can be found.

In nine cases out of ten neglect, ignorance and downright abuse of the vehicle are the causes of almost every difficulty the man possessed of ordinary common sense experiences with the automobile he owns. Taken as a whole even the accidents resulting from the causes named are never very serious, and, although they may appear at the time of their occurrence very annoying to the novice responsible for their happening, a better acquaintance with the vehicle and its construction causes later on only a laugh when the misfortunes of the owner's first experiences are brought to mind.

In all this it should not be forgotten that not one novice out of a hundred really knows anything about the vehicle he buys, the acquiring of an education being left to his early matriculation at the University of Experience. The seller cannot afford to supply a teacher free for any very extended period of time, nor will the buyer pay for an instructor a moment longer than it is necessary for him to acquire the merest smattering of information about the car. The results are unfortunate for all concerned; but they could not be different from what they are.

Of course, before the owner cuts loose from the instructor he has been told by him perhaps a hundred things which are nothing in themselves—and attention to which soon becomes absolutely automatic—but which become so jumbled up in the mind of the new owner that they mean absolutely nothing to him when the occasion for their remembrance eventually arrives.

Generally, all goes well with the novice, and by the time any adjustments to the car are required the tyro is fairly well up in his subject. But there are exceptions, and notable ones, in which it may happen that some undetected carelessness on the part of a workman before the vehicle left the factory will cause a derangement to occur early in the novice's career. On the other hand, it may happen that failure to run is due to some ridiculous omission on the part of the owner. I have known cases where an expert has travelled 150 miles to see what was the matter with a new vehicle, only to find that the switch had not been turned on, or that the petrol tank was empty! These cases were extremes, of course, but they are by no means infrequent.

I believe that, given only a moderately efficient car, not to say a really good one, most of the difficulties experienced by beginners are due to over-driving, unduly violent starting and stopping, neglect of adjustment, and lack of thorough lubrication. I have seen many automobiles disassembled after various periods of running, and I believe all who have had practical experience will agree with me that the most common cause of excessive wear is neglect of lubrication. The motor itself may be perfectly well lubricated—in fact, it is too often decidedly over-lubricated—but every other part of the car is left alone. I have seen gears ruined for lack of oil, combined with violent changing, and axle-bearings seized simply because they had been run dry for long periods.

DILLON WILLOUGHBY has been committed for trial from a London police court charged with stealing £169 received on account of a motor-car.

THE HERKOMER TROPHY INTERNATIONAL TOURING CAR COMPETITION.

AS stated in these columns in August last, Professor Hubert von Herkomer, the well-known artist, has offered a trophy of the value of £500 to the Bavarian Automobile Club for an international competition of touring cars. The rules and regulations under which the contest will be held have now been drawn up and are briefly summarised below. The trophy, which will be in silver, the work of the Professor himself, must be competed for annually, and, although a challenge trophy, will become the property of any national club which wins it three times in succession. In accordance with the donor's wishes the first year's contest is to be held in Bavaria, the second in England, and subsequent competitions in the country holding the trophy. The touring car is described as a vehicle which in construction and operation is capable of covering long distances over all classes of roads at a relatively rapid pace. It must be of pleasing design and com-

Three of the eight days will be devoted to short pleasure runs, three to touring work, one to special tests in the way of consumption, brakes, and hill-climbing capabilities, and one to kilometre trials with flying and standing starts. A minimum speed of 25 kilometres per hour, and a daily run of at least 300 kilometres, will be expected of the competing cars in the touring contest. At the conclusion of each day's run the vehicles will be placed under lock and key and only handed over to the driver five minutes before the time to start on the following morning. An observer will accompany each car.

The selection of the winning vehicle will be made by means of points, the one having the least to be the successful car. The cost of the cheapest chassis entered will form the basis, and every £12 10s. above this will mean one mark against the vehicles. (2) Fuel consumption—1 litre per twelve kilometres will form the basis, and for every 1-10 litre more consumed during that distance ten marks will be allotted. (3) Brake tests—three marks for every metre covered beyond the signal to stop, and 150 marks if more than 40 metres are taken in which to pull up. (4) Speed (a) Kilometre trial on the flat with standing start. (b) the flying kilometre—and (c) hill climbs, one mark for each second occupied in making the kilometre in each event. (5) Weight—



Madame Lockert visiting the Cathedral of St. Isaac, at St. Petersburg.



A stop in the Russian town of Louga.

[Le Chauffeur.

BY AUTOMOBILE FROM PARIS TO ST. PETERSBURG.

fortable. The first contest is to be held in the early part of August next, starting from Munich. The English, American, French, and Austrian Clubs may enter sixteen cars each, and the Bavarian, Belgian, German, Danish, Italian, Dutch, Russian, and Swiss Clubs not more than eight vehicles each. The Bavarian Club has power to decide whether the contest shall be held, if there are not more than forty cars entered, and to restrict the number to eighty competitors. An entry fee of £24 has to be paid in respect of each car three months before the contest takes place. Any club entering at least eight cars can appoint a delegate to the central committee, who may act as a judge.

All competing cars must be entirely manufactured in the country in respect of which they are entered, except so far as regards the tyres, and no one firm may enter more than two cars. The contest, which will extend over eight days, is one of reliability and not of speed, although the programme will provide for kilometre speed trials and hill-climbing contests, these being each divided into three classes—cars up to 15-h.p., vehicles from 15 to 30 h.p., and cars over 30-h.p. No restriction is placed on the horse-power of the competing cars, which are to be equipped with two brakes, sprag, mud-guards, two lamps, etc., but the weight limit is fixed at 1,100 kilog.

all cars weighing the full limit of 1,100 kilog. will have 200 marks allotted, one being taken off for each 10 kilog. below the limit. (6) Pouring capability—any car taking more than 14 hours for 300 kilometres will get 100 marks. Marks ranging from 30 to 300 can be given by the judges in respect of any competitor who fails to follow instructions, police regulations, etc. Points will also be awarded in Section 2 in respect of comfort, convenience for luggage, quiet running, and simplicity, the advantage in this case being to secure as many marks as possible, they being deducted from those above specified in deciding as to the winning car.

THE Thomas Motor and Engineering Company, Limited, has been registered with a capital of £5,000.

By the consent of the donor, entries for the Harmsworth International Cup for motor-boats can now be received by the A.C.G.B.I. up to February 1st, 1904.

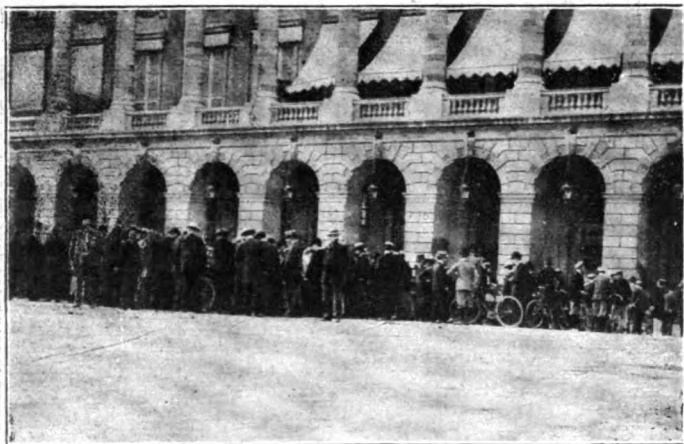
THE Car and General Insurance Corporation, Limited, has gone to allotment, and the company is now in a position to accept insurances.

CONTINENTAL NOTES.

THE Committee of the A.C.F. has issued the regulations with regard to the eliminating test to be held to select the French team for the 1904 Gordon Bennett race. The race will be over a distance of between 550 and 600 kilometres, and will be held about a month before the Cup contest. No more than three cars can be entered by any one firm, the entry fee for each car being £200. The first three cars in the eliminating race will form the Gordon Bennett team, and in the Cup race will have to be driven by the same persons and be fitted with tyres of the same make as in the selection trial. The three cars chosen will, between the dates of the eliminating contest and the Cup race, be under the control of the Sporting Committee of the A.C.F. The maker of each car selected will be required to place a second one at the disposal of the Club in case of accident or damage before the big race. The cars in the eliminating trial will be sent off at two minutes' intervals, the places being balloted for. The De Dietrich Company have already entered three cars.

M. RENE DE KNYFF and Henri Fournier have this week been over the proposed course in the Homburg district. Unfortunately, heavy rains prevented a trial of the road under speed conditions.

IN spite of the reports that three or four Belgian motor-car builders had announced their intention of entering cars to represent Belgium in the 1904 race, when the entry list closed it



The Scene Outside the French Automobile Club on the Appearance of a New Car.

was found that only one firm had fulfilled the promise, viz., the manufacturers of the "Pipe" car.

IN the death of Count de Chasseloup Loubat, which occurred at Cannes last week, the French motoring world has lost an ardent and enthusiastic supporter. The deceased, who was only thirty-seven years of age, had taken an active part in the development of the automobile movement in France, especially in its early days. The contests between him and M. Jenatzy for the kilometre record in 1899 will also be remembered.

AT a meeting of the Sporting Committee of the Belgian Automobile Club, last week, the dates for next year's various races and competitions were fixed. The Circuit Nationale and the Circuit des Ardennes will be held in May, while the races and hill-climbing competition at Namur will take place in the first week of July. The Ostend Meeting will extend from the 10th to the 20th June, and that at Spa from the 10th to the 31st July. Altogether the months of May, June, and July give promise of great activity in Belgian motoring circles.

THE dust question is no less serious in France than in England, and for a long time isolated efforts have been made in various parts of the country in the way of experiments with tar and petroleum to overcome the nuisance. With the view of

taking the matter more seriously in hand, Dr. Guglielminetti and a number of other gentlemen interested in the subject have just organised an association to be known as the "Ligue contre la Poussière," with headquarters at the A.C.F. club-house in Paris. The objects of the League will be to afford those desirous of taking steps to lay the dust in their districts all the necessary information as to the most suitable material to use, etc. A strong committee has already been formed, including many gentlemen well known in French motoring and medical circles.

ONE of the chief requirements, especially in touring, is that calcium carbide of suitable grain for acetylene lamps may be obtained at supply stations along all the main highways. The question was discussed at a recent meeting of the German Acetylene Society, when it was decided to request the Carbide Syndicate to open negotiations either with the Vereinigte Benzin Fabriken, or directly with the individual suppliers of petrol, to arrange that carbide of suitable grain be kept on hand at all of these depots and sold at definite prices, and also that empty carbide cans be taken back in exchange for the new cans.

IT is stated that the Vereinigte Benzin Fabriken, of Bremen, have at present in operation nearly a thousand depots throughout Germany where petrol is stocked, and it would be a great convenience to motorists if carbide could be obtained at these at a uniform price.

A NUMBER of electrical motor-vehicles are being built for the use of the postal authorities at Munich, Germany, for the transport of mails between the various post offices. They are of a small type intended to carry a load of only 2 cwt. at an average speed of nine and a half miles per hour. They will be equipped with a small battery of Tudor accumulators, while two spare sets will be kept at the charging station, one of which will be always ready charged so that it may be quickly substituted for the discharged battery.

THE Italian Government has recently appointed a Commission to enquire into the existing regulations with regard to automobile traffic in the country. Neither motorists nor motor-car builders are represented on the Commission, and the Italian Automobile Club has sent in a protest urging that, in view of the growing importance of the movement and industry, due regard should be had to the protection of the same in any alterations that may be suggested in the present regulations.

ALTHOUGH not much has been heard lately of the combination petrol-electric car, it is rumoured that quite a number of such vehicles will be seen at the forthcoming Salon. Among others, it is reported that such class of cars will be exhibited by Messrs. De Dion, the Electrogenia Company, the Krieger Company, the Germain Company, the De Dietrich Company, and Messrs. Panhard and Levassor, the latter being of the Lohner-Porsche type.

AT various times projects for the construction of a motor-racing track near Paris have been mooted, but so far nothing definite has been done. The latest scheme is for a track at Juvisy, which, it is stated, would be 10 kilometres long and 20 metres (65 ft.) wide. The route includes a straight stretch of three kilometres long, on which it would be possible to run kilometre and mile races. The name of Baras, the well-known driver of Darracq cars, has been connected with the scheme.

A 100 kilometre road race was held on Sunday last between Maison Carrée and Arba by the Automobile Club of Algeria. The Guérin Cup for single-cylinder cars was won by Homolle on a Renault in 2 hours 1 min. 3 sec., while the A.C.A. Criterium for four-cylinder cars was also won by a Renault driven by Bellemare, who covered the distance in 1 hour 22 min., Malgaive on a Darracq being second in 1 hour 44 min. 10-2-5 sec.

MOTOR-CYCLING NEWS.

It was a capital suggestion of the Motor Cycling Club to hold the inaugural run of the winter season on the Sunday of the week following the opening of the cycle shows, and the number of members, together with friends and visitors, who accepted the invitation to join the function quite surpassed expectations. In-

land Revenue supervisor, Derby, conducted the prosecution. Defendant bought his motor-cycle in June last, and has used it continuously ever since. The local officer saw him riding on August 23rd, and sent him a declaration form giving all the necessary information. Defendant took out a licence on September 24th, thirty-one days after he got the form from the officer, and three months or more after he first bought the cycle.

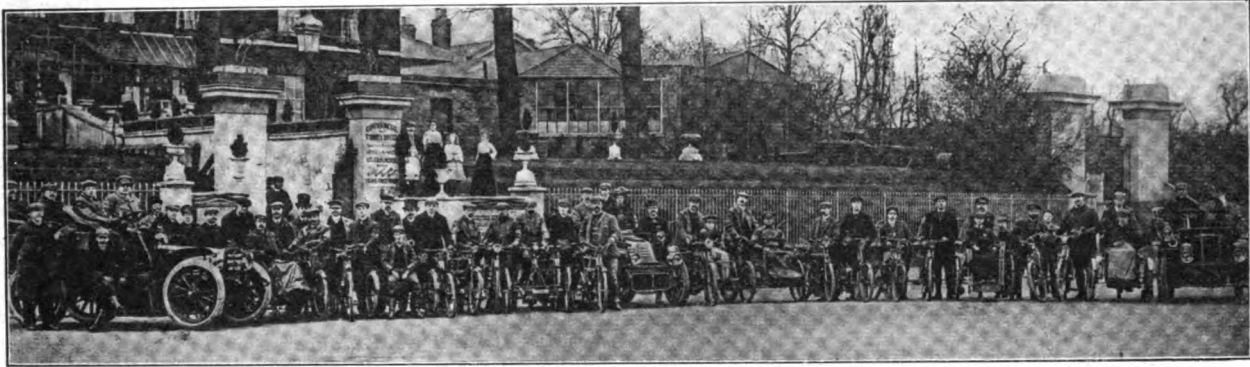


Photo by]

The Meet of the Motor Cycling Club at Slough.

[Mr. H. Kennett, jun.

deed, the crowd that assembled at the Royal Hotel, Slough, was altogether an imposing one, and probably the largest attended meeting of the club on record. After the company, to the number of sixty, had been marshalled into position in front of the hotel preparatory to facing the photographer, an adjournment was made to the dining-hall for lunch.

A FRENCH motor-cyclist has recently succeeded in riding from one end to the other of Algeria in five days. He rode a Peugeot machine, the distance traversed being over 1,000 kilometres.

BETWEEN fifty and sixty members have already been enrolled in the Manchester Motor Cycle Club. Its president is Mr. J. H. Baynes, and Mr. P. H. T. Butler is captain. The sub-captains are Messrs. J. Varden and J. W. Butterworth, and Mr. H. Brady, of 8, Ashton New Road, Manchester, is the honorary secretary. Unluckily the opening run to Chester on Sunday week was spoiled by the weather. Last Sunday's fixture was to Brereton for dinner and Macclesfield for tea; and Rudyard Lake is the objective for to-morrow (Sunday).

THE Rex Co.'s free gift of a motor-cycle to the rider who covered the greatest mileage during August and September last has been won by Mr. C. E. Jenkins, of Cardiff, with a record of from 5,000 to 6,000 miles.

A MEETING of the London members of the Cyclists' Touring Club will be held in the Society of Arts Lecture Room, John Street, Adelphi, W.C., on Tuesday, December 8th, when some information will be given on the subject of motor-cycles, by two or three experienced riders, after which the meeting will be thrown open to discussion.

AT the Ilkeston Petty Sessions, Harold Hunter was charged with keeping a motor-cycle without a licence. Mr. A. Goodhind,

The facts were put before the Commissioners in London, and they agreed to compromise the case in order to save the defendant going into court, and he was asked to pay 10s. This he refused to do, and so the case came before the bench. Defendant was fined 2s. 6d. and 9s. 6d. costs.

ON Tuesday next, December 1st, the first annual dinner of the Auto-Cycle Club will be held at the Club house of the A.C.G.B.I. After the dinner Mr. M. O'Gorman will read a paper on "Improvements Desirable in the Motor-cycle," to be followed by a lantern display on "Motor-cycling Subjects," by Mr. J. van Hooydonk.

THE press reports of automobile accidents that occur on the road are frequently exasperatingly indefinite as to the precise primary cause in each case. This is doubtless due in part to the ignorance of the usual daily newspaper correspondent and reporter regarding things mechanical, especially as they pertain to automobiles, and also in part to the unwillingness of the driver of the car to confess his own inexperience and carelessness. Reading between the lines of such reports, however, it seems apparent that inexperience, nervousness and recklessness are primarily responsible for most of the accidents. There is little doubt that in most cases, when accidents are reported as due to the machine having got beyond control, ordinary prudence was not observed. Unknown or dangerous roads are traversed at a high speed, and when some sudden danger looms up, such as a sharp turn or a slippery stretch of road, the speed cannot be slackened sufficiently before the danger point is reached. Practically the only cause of a motor-vehicle getting beyond control for which the driver is clearly not responsible is a failure of the steering gear. The accidents reported as due to cars getting beyond control are mostly cases of skidding, preventable with ordinary prudence.

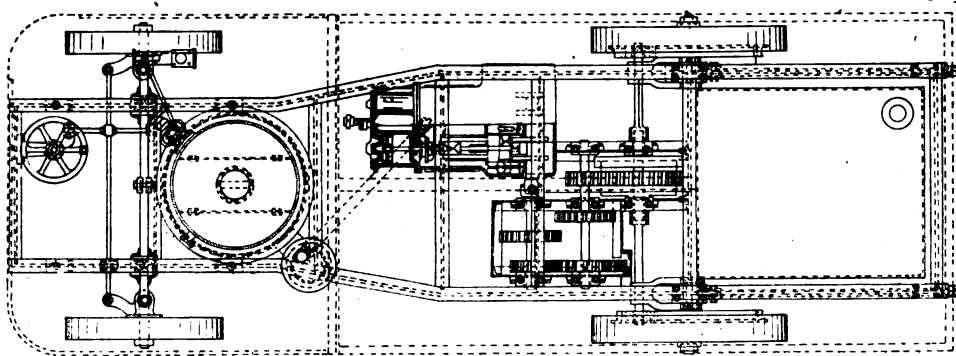


The French Motor-Cycle Trials—Holley and his Bruneau Machine.

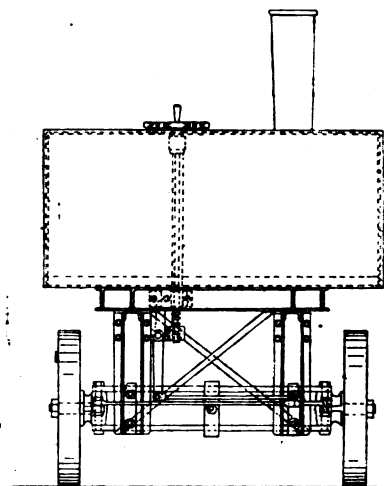
THE "ENGLISH" STEAM WAGON.

THE list of heavy steam wagon builders in this country, already a comparatively large one, is steadily receiving additions. In recent issues descriptions have been given of the "Naylor," "Wantage," "Robertson" vehicles, all relatively newcomers in this important branch, and this week we are able to present some particulars and illustrations of still another steam wagon which is known as the "English." The vehicle contains several patented features, the result of many years' experience of Mr. A. Herschmann, mechanical engineer to the Adams Express Company of New York, who in such capacity has had every facility to thoroughly study mechanical transport of both light and heavy goods. The wagon illustrated in Figs. 1, 2 and 3 is the standard 5-ton type constructed by the English Steam Wagon Company, of Hebden Bridge, sole licensees for Great Britain, Colonies, etc., under the Herschmann patents. The main frame is of steel girder section, while the goods platform is 12 ft. long by 6 ft. 6 in. wide over all. It will be noticed that the driver is located in front of the boiler, thus having a clear view ahead. The boiler is of special fire-tube type with

gether rigidly when necessary on bad roads. Two speeds are provided, three and six miles per hour. The front axle arrangement (see Fig. 2) is of a patented type, there being no rigid action between the springs and the axle, the latter being free to assume any position without imparting the slightest strain to either springs or frame. The axle moves in guides and is so shaped that its centre will always move in a vertical line in the centre of the wagon, no matter what the relative position of the four wheels may be; another advantage of this type of axle is stated to be that it gives a bearing support close to both wheels. A 2-ton vehicle on somewhat similar lines is also being turned out. The engines in this class have cylinders $3\frac{1}{2}$ in. and 6 in. dia. by 5 in. stroke, and any type of flat platform, van, or omnibus body can be adapted to the frame. The road wheels are of the artillery type, the rear pair being 3 ft. 9 in. dia., shod with 6 in. wide tyres; the front wheels are 3 ft. dia. by 5 in. wide. Respecting fuel consumption, the makers inform us that in the type of boiler employed this is to be exceedingly low indeed. With the 2-ton wagon the amount of fuel consumed averages 200 lbs. per day, travelling 30 to 40 miles in heavy traffic and steaming for 12 hours. We learn that already there is a good demand for these wagons, and that orders are being executed for the North of



Figs. 1 and 2.—Plan and Front Elevation of the "English" Steam Wagon.



straight tubes, and specially constructed for being quickly opened out for cleaning and other purposes; it is also designed to give dry steam, and is fired from the top through a central shoot, gas coke or coal being used as fuel. The working pressure is 200 lbs. per square inch. The exhaust steam is passed through a re-heating coil in the firebox so as to be sent into the air through the chimney as invisible vapour. To feed the boiler a steam pump is fitted which exhausts its own steam, and provision is made for heating the feed water; an auxiliary injector with removable cones, or preferably a duplicate steam pump, is provided. The engines are of the horizontal enclosed type with splash lubrication, the cylinders being 4 in. and 7 in. dia. by 6 in. stroke, or, when preferred, link-reversing type engines can be fitted 4 in. and 7 in. dia. by 7 in. stroke, covered with a sheet steel casing. A controlling valve is fitted to admit high pressure steam to both cylinders when required. The system of transmission employed is of Herschmann's flexible type, the rear road wheels being driven by means of internal gear rings attached thereto, meshing with the driving pinions on a compensating gear shaft. The pinions are swung from the stationary rear axle by radius links and have also a swinging suspension to the wagon frame, so that when starting the engines the tendency of each pinion is to mount or climb up on the internal gear, which being resisted by the load on the vehicle, the ordinary springs of the wagon are brought into play to avoid shocks. In this way the operations of starting and stopping are effected without shock. The compensating gear is fitted with a special self-locking or braking device, which is automatic under some conditions and can be actuated from the driver's seat to lock the two rear wheels to-

Spain and South Africa as well as for a well-known English firm of carriers.

A MOVEMENT is on foot to form a motor-cycle club in Melbourne. One has lately been formed in Perth, and another in Adelaide, so that it is evident that the motor-cycle movement is making progress in Australia.

AUTOMOBILISM is a subject of considerable discussion in India, and those English owners of cars who have ever taken their vehicles with them when visiting the Dependency have done much to foster the popularity of motor-cars in a country where they will be of great service in the future. Unfortunately the roads in many of the Indian cities are totally unsuitable for rapid traffic, and even the three main streets of Bombay come within this category. But a motor-car service between that city and the suburbs should be productive of profit. A fleet of cars between Malabar Hill, Cumballa Hill and the Fort in the morning, and a return service at the close of office hours in the evening, would be acceptable to many. Another service between Bandora Station, Bandora Hill and Palli Hill would be patronised. Connection between Wathar, Poona, and Mahableshwar during the season is urgently necessary. The present arrangements for the last-named service are a disgrace, and more particularly so in connection with a Government Station. A fair estimate of what a motor-car would earn during the two hot seasons of May and October would be probably £250. During the rainy season the car could ply for hire at Poona and would certainly reap a rich harvest during the racing seasons at Poona and Bombay.

HERE AND THERE.

THE Roadway Autocar Company, Limited, is shortly removing from Burwood Place, W., to new premises at 19, New-man Street, Oxford Street, W.

MR. E. W. WELLS has been declared the winner of the gold badge of the Nottingham Automobile Club for his performance in the recent hill climb at Kettleby.

THE Main Wheeleries, Limited, has been registered with offices at 97, John Bright Street, Birmingham, to carry on dealings in motor-cars, motor-cycles, etc.

ALL persons who drove throughout the recent Reliability Trials, and against whom no complaints were upheld by the committee of the A.C.G.B.I., will receive certificates.

IT is reported that the American Darracq Company has ordered from the Paris firm a racing car of no less than 180-h.p. According to the rumours that are circulating it will have two four-cylinder motors, each of 90 horse-power, one mounted over the front axle and the other over the rear axle.

A MOTOR hose wagon is being built by Messrs. Merryweather and Sons, Limited, for the fire brigade of Valparaiso.

AT a meeting of the Institution of Electrical Engineers, on Thursday, Mr. W. Hibbert read a paper on "The Edison Accumulator for Automobiles."

THE University students at Princeton, N.J., U.S.A., have organised an automobile club. There are half a dozen large cars owned by students and as many light vehicles, with about a dozen motor-bicycles.

THE West London Motor Company, Limited, has been registered with a capital of £2,000 to adopt an agreement with the Begbie Manufacturing Company, and to carry on the business of motor manufacturers and dealers. The first directors are Messrs. S. D. Begbie and O. F. M. Mundy.

WE learn that the Passe Partout, which started a year or so ago on an eventful trip round the world, and which was dug out of a ditch in Russia by Mr. C. Friswell, has now passed into the hands of Mr. Harris, of Llangibby Castle, Monmouth, where it will serve as a station omnibus.

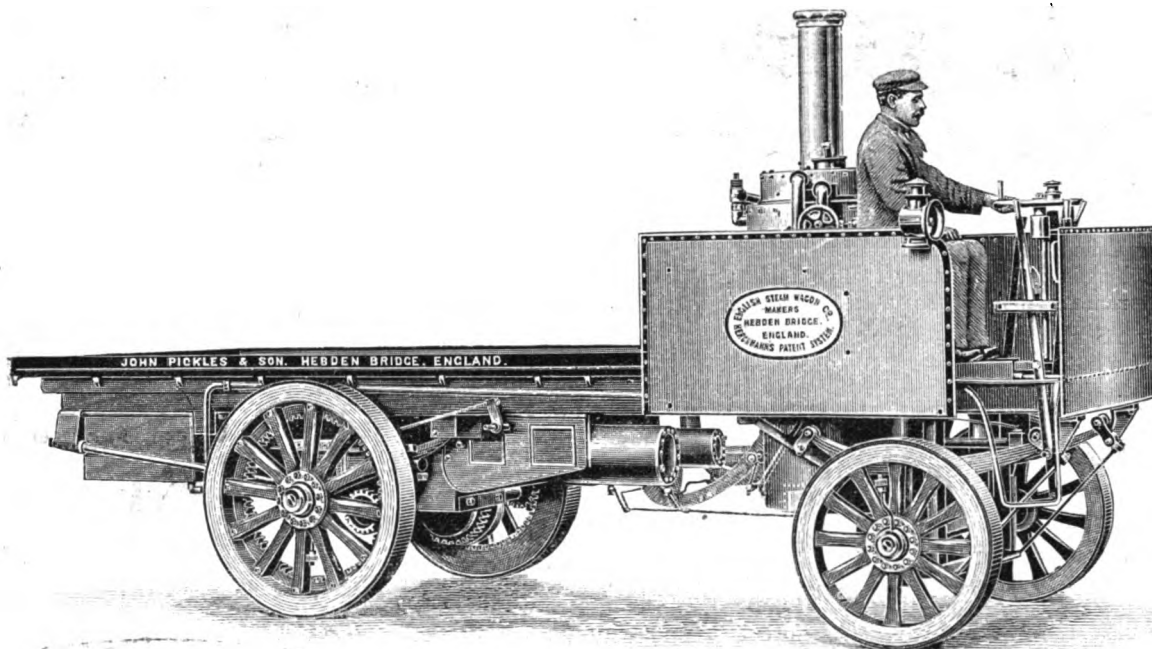


Fig. 3. — General View of the "English" Steam Wagon. (See opposite page.)

THE Electric Vehicle Equipment Company has just received an order for a number of electric motor vans to be substituted for the horse-drawn mail cars which carry mails between the general post office and the railway stations in Philadelphia.

AN excellent catalogue of some 180 pages has been issued by Messrs. David Brown and Sons, Limited, of Huddersfield, in which numerous illustrations and much descriptive and tabulated matter are published respecting their machine-cut gearing. Spur, bevel, worm, rawhide, screw and spiral gearing are included, together with certain information for determining the dimensions of different kinds of gearing.

THE first motor-cycle road race in Australasia was held by the Christchurch Cycling Club from Riccarton to Waddington, New Zealand, and back, on the 24th September. There were twelve starters, of whom seven finished. Unfortunately the scratch man, Best, on a $3\frac{1}{2}$ -h.p. machine, who conceded starts up to 40 minutes, had trouble with his driving belt, which prevented him from starting. The following were the results:—First.—Williamson (2-h.p.), 25 min. (2 hrs. 7 min. 30 sec.) Second.—Smith (3-h.p.), 10 min. (1 hr. 59 min. 32 sec.) Third.—Hargreaves (2-h.p.), 23 min. (2 hrs. 14 min. 15 sec.)

THE Sharp Air-spring Company, Limited, has been registered with a capital of £10,000 to adopt an agreement with Messrs. A. Sharp and W. T. Shaw, and to carry on the business of manufacturers of and dealers in compressed air springs, motor-cycles, motor-cars, etc. The registered office is at 47, Victoria Street, Westminster.

THE fact that ladies are debarred from membership in the different American automobile clubs will, in all probability, eventuate in the formation in New York of a ladies' automobile club. A movement is reported to be on foot among the wives of prominent members of the Automobile Club of America to organise, the Ladies' Automobile Club of London having furnished the example.

"How to detect the miscreant throwing glass in the street," was the title of a paper recently read by Dr. C. A. Howell before the Automobile Club of Columbus, O., U.S.A. It dealt with an existing evil, and the reading was followed by the adoption of a resolution requesting the legislative committee of the club to call upon the Mayor and insist on the enforcement of the ordinance relative to the throwing of broken glass and similar matter into the streets.

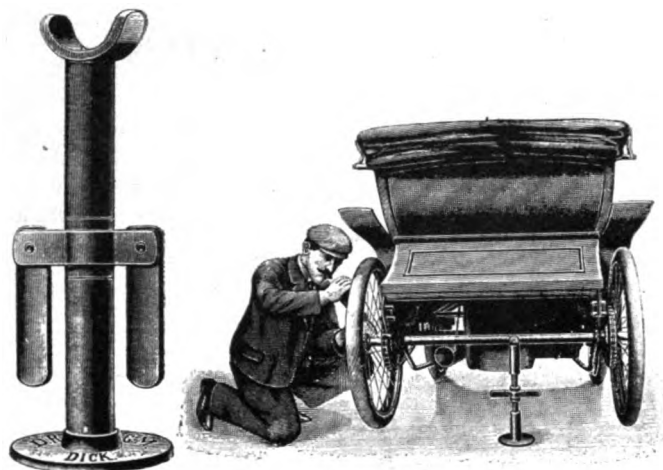
A COUNTY motor union is being formed in Hertfordshire.

MR. RADFORD COOKE has resigned the assistant secretaryship of the A.C.G.B.I.

A MOTOR-BOAT section is, we learn, being formed in connection with the Austrian Automobile Club.

WE hear that the Sunbeam Company are at present engaged on the construction of a new six-cylinder car.

THE new lifting jack illustrated herewith has recently been put on the market by Herr Friedrich Dick, of Esslingen,



Germany. As will be seen, it is a compact and simple affair; when closed its length is just under twelve inches, while by means of the internal screw it can be extended to twenty inches.

FROM Messrs. S. F. Edge, Limited, we have received a photograph of a light Gladiator lorry, to carry up to two tons, they have lately introduced. The engine is of nominally 12-h.p., but develops considerably more on the brake. Three speeds and reverse are fitted, the speed on the level, when loaded, being about 15 miles per hour, and a gradient of 12 per cent. can be negotiated. The length of the platform is 11 feet 3 in., while the petrol capacity is sufficient for a run of about 80 miles.

MOTORING is now regarded as fair game by novelists, and in the "Motor Pirate" Mr. G. Sidney Paternoster has availed himself of the modern pastime to the extent of 250 pages. The wonderful doings of the "Motor Pirate," who seems to have terrorised the users of many of the roads of the home counties, are set forth with a wealth of detail that is not without interest. Some of the accompanying illustrations are equally remarkable in their way. The book is published by Messrs. Chatto and Windus.

MR. PERCY RICHARDSON, who has long been associated with the Daimler Motor Company, Limited, has now resigned to take up the general management and a seat on the board of the Brotherhood-Crocker Motors, Limited. This is a private company recently formed in connection with the old-established engineering firm of Peter Brotherhood, Westminster Bridge, London, the other directors being Earl Fitzwilliam, Mr. Stanley Brotherhood and Mr. John Crocker. The Brotherhood-Crocker Motors, Limited, intend manufacturing touring motor carriages, and cars and wagons for commercial purposes.

AN interesting two days' race meeting came to an end at the Ingleside track, San Francisco, U.S.A., on the 7th inst. In all fifteen events were run off—eight on the first day and seven on the second. In the five-mile race for cars of 1,800 pounds and under Oldfield was signally defeated by Grothe on a White steamer, in a fairly fast race for this weight car, the time being 6 min. 4 2-5 sec. Later in the day, however, Oldfield redeemed himself by winning the ten-mile open race in the good time of 11 min. 15 1-5 sec., his fastest mile being 1 min. 1-5 sec.; while on the second day he covered the same distance in 10 min. 19 1-5 sec., with one mile ridden in 58 4-5 sec.

AN Isle of Wight Motorists' Association has been formed.

A MOVEMENT is on foot in Paris to form a club among military automobilists.

THE Lanchester Engine Company, Limited, now have one of their new type water-cooled cars running in London.

THERE will be no fewer than 213 registration authorities in the British Isles in connection with the Motor Car Act.

ALDERMAN SCOTT FOSTER, Major Cox, and Mr. F. T. Jane have been appointed to represent Portsmouth motorists on the Hampshire Motor Union.

FROM Messrs. John Marston, Limited, comes a neatly got up catalogue of the 12 h.p. Sunbeam car, one of the noticeable features of which is that the driving chains are enclosed in gear cases.

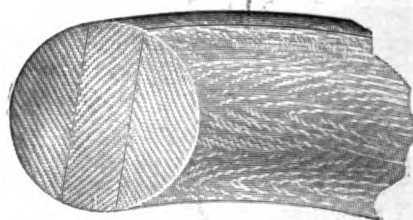
THE Manchester Carriage Company (1903), Limited, has been registered with a capital of £30,000, to carry on the business of hirers, etc., of omnibuses, wagonettes, motor-cars, and other vehicles.

WE regret to hear that Mr. S. F. Edge has been absent from business for some days owing to a serious illness. As we go to press we learn that he is fortunately entering the convalescent stage.

THE Lycett's Rawido Belt Company has been registered with a capital of £2,000 to acquire from the Lycett Saddle and Motor Accessories Company, Limited, the business of Lycett's Rawido Belt and Patent Connection, and to carry on the business of manufacturers of and dealers in raw hide, motor belts, motor and cycle accessories, etc. The registered office is at 164, Deritend, Birmingham.

DR. AUGUST GRETH, of San Francisco, is building an immense dirigible balloon, with the intention of competing for the £20,000 prize and gold medal to be awarded for the most successful airship at the St. Louis Exhibition. Dr. Greth recently sailed an airship of his own construction over San Francisco Bay, and claims to have demonstrated the advantage in the use of some features in the design of his machine over others, especially that of Santos Dumont.

A NEW steering wheel has lately been put on the market by the South British Trading Company, Limited, the advantages claimed for the same being that it is impervious to moisture and consequently will not warp or twist. The accompanying illustration shows an end section of the three-ply laminated rim of



the wheel. The grain of the wood running in different directions in each lamina ensures a very rigid and strong construction. The wheel is entirely self-contained, requiring no metal section to hold it together.

MESSRS. MICHELIN, in one of their weekly budgets, point out that many outer covers of motor pneumatic tyres are ruined owing to their coming into contact, when running, with the chain, with a bolt, or even the mudguard. They therefore recommend motorists to see that there is nothing near the tyre that is likely to rub against it. Another point worthy of notice, to which Messrs. Michelin draw attention, is that while many outer covers sent to them for repair are received in most elaborate cases and packages, little or no care is taken with the inner tubes. The latter are generally simply folded up and tied with string, with the result that further injury is done them in transit to the works. While outer covers may be safely sent wrapped in old pieces of cloth or even paper, inner tubes should be carefully packed so as to prevent them being damaged en route.

THE NATIONAL SHOW.

THE exhibits at the National Show, which is this week being held at the Crystal Palace, comprise a larger proportion than ever of motor-cycles, the principal displays being those of the Singer, Quadrant, and Rex Companies, and Messrs. Bayliss, Thomas and Co., Ltd. A number of new cars are also shown for the first time.

Undoubtedly one of the most interesting stands in the exhibition is that of the British Automobile Commercial Syndicate, Limited, on which are to be seen the 1904 models of the Talbot cars. These comprise so many interesting features that full justice cannot be done to them in the course of a show report, but a brief summary may now be given. The new models are three in number, 6-h.p. single cylinder, 11-h.p. double cylinder, and 20-h.p. four cylinder. With the exception that the 6-h.p. car has only one cylinder, and that in the 11 and 20-h.p. vehicles they are cast in pairs, the following particulars may be taken as applying to all three types.

Differing from the 1903 engine, the valves are on opposite sides of the motor and are mechanically actuated by different cam shafts. The inlet and exhaust valves are interchangeable. The bore and stroke of all three types are exactly similar, and therefore, whether in the 6-h.p., 11-h.p., or the 20-h.p., the pistons, piston rings, cylinders, valves, connecting rods, bearings, half-time gear, pump gear, nuts, springs, bolts, etc., are identical in size. This is the first time, we believe, that engines of such varying horse-powers have been thus standardised in their parts,

independently of any other part of the car. The clutch itself is made adjustable by means of one nut. Three speeds forward and a reverse are provided; and on top speed the power is conveyed to the rear axles without the interposition of any reducing gear. The brakes are of the expanding type similar in design to those fitted to the rear wheels of the 1903 cars, but have been considerably improved. The contact parts are metal; they are carried inside a dust-proof case and thus protected from grease or mud. The transmission is through bevel-gearing and a cardan jointed shaft, which is carried for the whole of its length in a phosphor-bronze bearing.

While the 11-h.p. and 20-h.p. cars comprise, as will be seen, a number of novel features, what is perhaps the most interesting vehicle is the new 27-b.h.p. Talbot voiture-de-luxe. Like the other models, this has a pressed steel frame. The engine is of a new type, comprising four cylinders, cast in two pairs, the diameter being 110 mm. bore by 130 mm. stroke. The inlet and exhaust valves are all mechanically actuated; the inlets are set in the top of the combustion chambers, and provided with a variable lift device controlled from the steering wheel. The ignition is by means of a magneto in which the sparking can be advanced or retarded. The water circulation is maintained by pump and honeycomb radiator. In place of the usual belt driven fan, the arms of the flywheel are formed as vanes, to induce a current of air through the cooler. Instead of the usual clutch, an ingeniously arranged one of the coil type of small dimensions is employed. The change gear gives four speeds ahead and one reverse, the various speeds being brought into mesh by a disc having

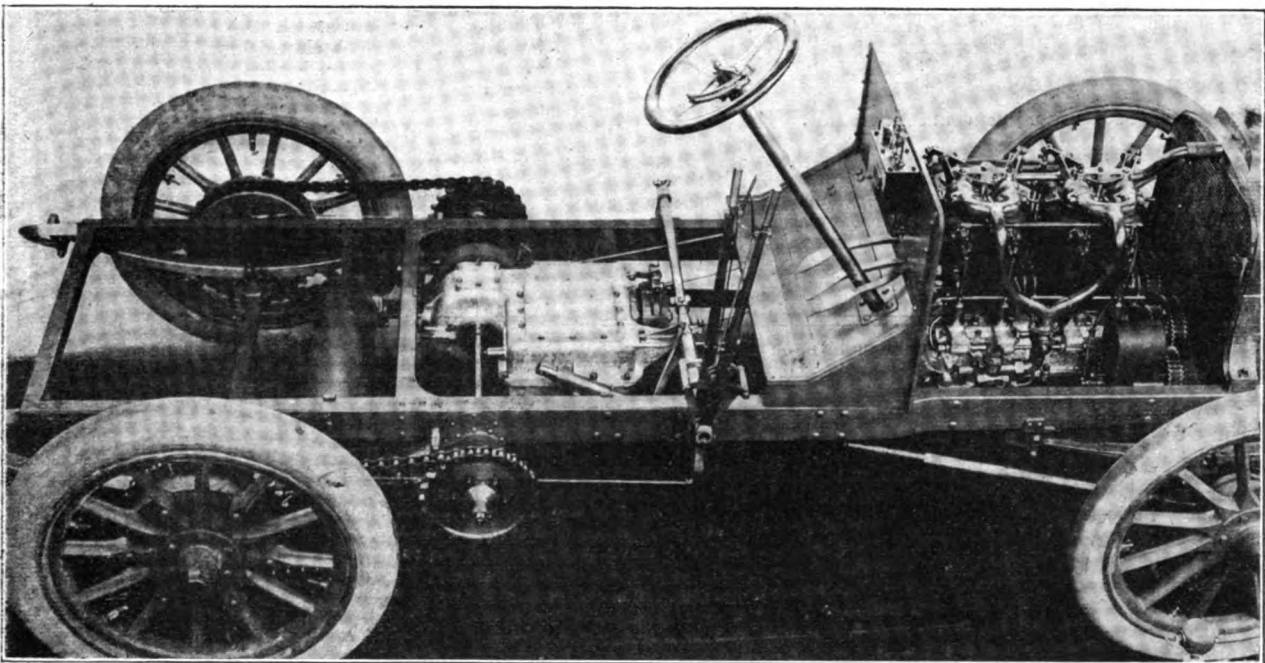


Photo by]

Fig. 1.—General View of Chassis of the new 27-h.p. Talbot Car.

[Russell.

and should prove an interesting point to users of Talbot cars, inasmuch as agents throughout the country will be more readily inclined to stock spare parts, and thereby ultimately benefit the users by giving greater facilities for their immediate supply.

The ignition is by means of a rotary magneto designed to permit of considerable advancing and retarding of the ignition spark. The pump is gear driven from the engine, and its position is varied from that previously customary, inasmuch as it is placed on the cylinder level instead of below the crank case, thereby facilitating examination. The carburettor, which is automatic in its action, is provided with a small automatic air-inlet valve; as the speed of the engine is increased or decreased, the valve is opened or shut to permit a smaller or greater quantity of gaseous mixture to pass into the cylinders. The governor, which is of course adapted to act on the inlet, is arranged to come into action at a speed of 1,200 revolutions per minute. The water circulation has been so arranged that there is barely two feet of tubing. In the case of the 6 and 11-h.p. engines, an ordinary radiator is used, whilst in the 4-cylinder car a honeycomb cooler is employed, a ventilating fan being also provided to induce a current of air through it. The lubrication of the engine is automatic, a small bye-pass conveying pressure from the exhaust, so that the oil is forced into the cylinders when the motor is at work. The frame is of hydraulically pressed steel suspended on exceptionally long carriage springs arranged outside the chassis. The clutch is of the ordinary cone type with a leather face, and the clutch head has the advantage of being detachable

cam-shaped grooves on its faces, the disc being inside the gear case. Quite a new and radical departure in the Talbot cars is the adoption in the 27-b.h.p. vehicle of side chain transmission in place of the cardan shaft and bevel gear. The starting handle is fitted with a simple spring device by means of which no injury can result to the operator should the engine give a back kick. The car is provided with no less than four brakes—a band brake operated by a right and left handed screw on a forward extension of the side shaft in the gear box, a large wide brake on the differential shaft, and internally expanding brakes connected with the hubs of the rear wheels. In contradistinction to the usual method, the latter are actuated by the driver pulling a lever towards him instead of pushing it forward. The differential shaft is carried in such a way that it may be detached without serious difficulty. The frame is attached to the rear axle by means of a special rocking arrangement connected with the springs. The new car is full of new features and its behaviour on the road during the coming season will be watched with interest. A prominent feature of the British Automobile Commercial Syndicate stand is the Bayard (Talbot) racer which played such a prominent part in the recent competitions at Dourdan and Gaillon. It is a marvel of light construction, the car complete, although equipped with a four-cylinder engine developing fully 75-h.p., weighing only 11½ cwt.

The well-known Garlio cleaning cloths shown on the stand of Messrs. M. and E. Marx appear to maintain their popularity among motorists, and are now being brought before the notice of motor-cyclists.

It is a new thing to be able to inspect the 1904 models of a French company in England ere they have been seen at a French exhibition, but, like the other concern already referred to, this is possible in connection with the extensive display made by Messrs. A. Darracq and Company. For 1904, this concern is making five types of cars: 8-h.p. single cylinder, 9-h.p. and 12-h.p. double cylinder, and 15-h.p. and 24-h.p. four cylinder. The 15-h.p. car is a new and interesting model;

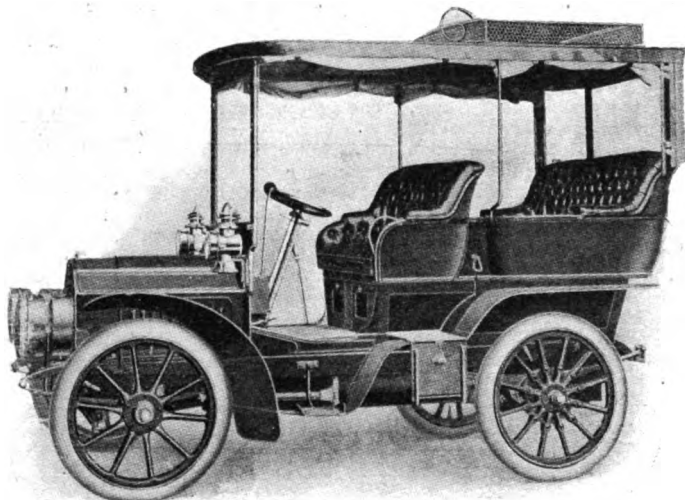


Fig. 2.—The 24-h.p. Darracq Roi des Belges Tonneau.

it has a pressed steel frame of new design, slightly turning in at the fore part to allow the car to turn in a much smaller circle than previously. The four-cylinder engine has mechanically-actuated inlet valves, accumulator ignition, governor acting on the inlet, honeycomb radiator and fan, and all other modern fittings. The cardan shaft and bevel gear system of transmission is still retained, while the gear box is adapted to give three speeds ahead and one reverse, with direct drive on the top speed. Another feature of the Darracq cars which is retained in the new model is that the change gear is actuated by a lever on the steering column. The lubrication is effected by pressure from the exhaust, while, in order that there shall be no failure in the supply of petrol to the carburettor when travelling over hilly roads, an auxiliary petrol tank is fitted under the bonnet. The brakes on the car are of the internal expanding type, and, of course, act equally well whether the car be running in a forward or backward direction. The 24-h.p. cars are on similar lines, and of these, handsome specimens are seen in a double and a single brougham, having side entrance, these special bodies being fitted on to an extra

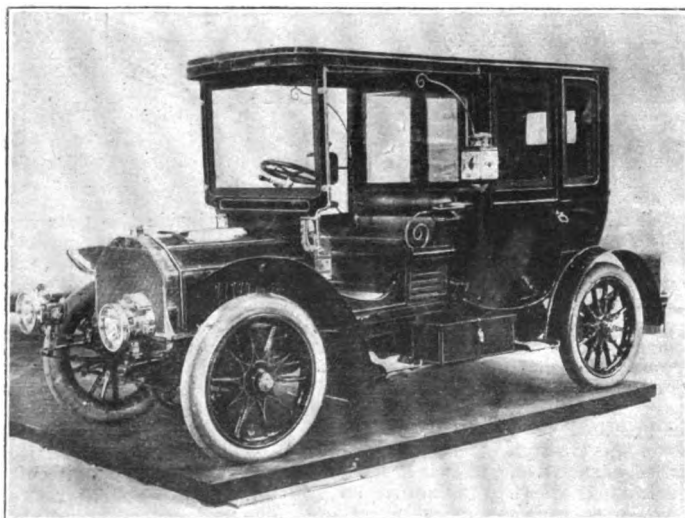


Fig. 3.—The Darracq Brougham with Side Entrance.

Photo by]

[Russell.

long chassis. The Darracq Co. are devoting much attention to the demand for cars, the rear seats of which can be reached from the pavement, and are building vehicles of this type in the 12-h.p., 15-h.p., and 24-h.p. models. The 12-h.p. car has a steel frame, but a framed ribbed-pipe radiator is employed in place of the honeycomb one. Other exhibits of interest on

the stand comprise an 8-h.p. van capable of carrying a load of 10 cwts. and one of the Darracq four-cylinder racing cars which took part in the recent competitions in France. This forms an interesting study of what can be done in the way of combining lightness with strength.

Messrs. Hall and Co., of Tonbridge, have an extensive display of De Dion and Darracq cars. Of the former only the 6-h.p. Populaires are shown, the bodies being painted in different colours. These little cars are now too well known to need description, but we may mention that among the detail improvements in the 1904 models are the fitting of a framed radiator and a separate cylinder head to the engine. Of the Darracq cars examples of 8-h.p. single-cylinder, 12-h.p. double cylinder, and 15-h.p. and 24-h.p. four-cylinder vehicles may be inspected. The 15-h.p. is quite a new type, and fitted with a Limousine coupe to seat six, and, with entrance at the side, forms a very attractive car. The frame of this vehicle is of one piece of stamped steel. Messrs. Hall and Co. also display an 8-h.p. double-purpose car. This is provided with a detachable tonneau and a van body to carry 5 cwt. It is well adapted for tradesmen's purposes, as either body can be readily substituted for the other.

For the 1904 season the Quadrant Cycle Company, Ltd., have brought out a decidedly novel two-seated motor-cycle known as the Tri-Car, of which we give an illustration in Fig. 4. Two separate motors of 2½-h.p. are employed, these being so arranged that they can be run singly or together by moving a foot lever. This feature of employing two motors is claimed to get over the difficulty of cooling a large single-cylinder motor. When disconnected, the electric current is also cut off from the idle engine, so that there is no waste of electricity or of gas. The control by one lever and the air tap is exactly the same as on the Quadrant motor-bicycle, whether one engine is working or both. The power is transmitted by V-section belts on to pulleys attached to each side of the back wheel. The latter is fitted with a special back-peddalling band brake, and the side wheels have band brakes actuated by Bowden wires. The driving wheel is fitted with a 2½-in. tyre and the side wheels with 2 in. The front carriage is coach built, and is suspended on extension coil springs. The principal spring is adjustable to different weights. Foot-rests with rubber mats are provided. The frame of the fore-carriage is attached by two tubular projec-

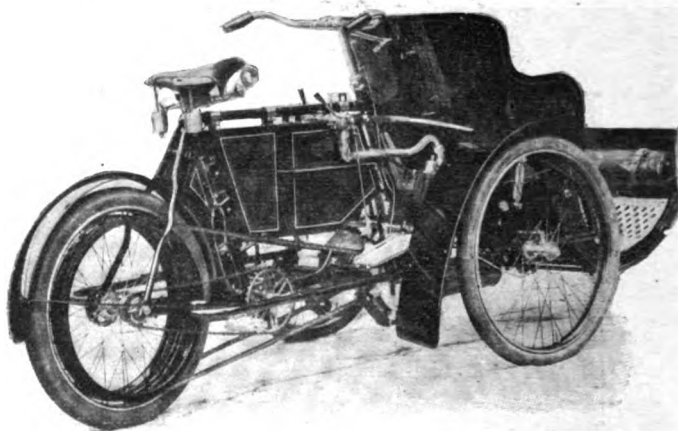


Fig. 4.—The Quadrant Tri-Car.

tions, which telescope into two open tubes of the tricycle near the bridge, and at the top by a bolt and nut on the steering head. It can be quickly removed when necessary, so converting the machine into a single-seated tricycle. A number of the Quadrant 2 and 3-h.p. motor-bicycles and tricycles are also shown. The engine has proved so entirely satisfactory that alterations have not been required except in very small details. Some riders having desired an exhaust-lift operated from the handle-bar, the makers inform us that this can now be supplied. As a result of experience, it has been decided to retain the surface carburettor. As, however, a little petrol is occasionally required for injection into the cylinder, a neat petrol extractor is now arranged in connection with the carburettor chimney, so that a charge can be withdrawn and applied in a moment. The radical change in connection with the Quadrant machine is the adoption of a spring fork which is claimed to largely reduce the amount of vibration usually experienced by motor-cyclists.

Practically the only firm showing a two-wheel motor-tandem is Messrs. Pitcher and Bartlett. It is arranged for a lady passenger at the rear; the motive power is supplied by a 2½-h.p. M.M.C. or Minerva engine, the driving belt being provided with a guard.

The Clarendon Motor-Car and Bicycle Company, Ltd., Coventry, have on view a number of their 3-h.p. "Clarendon" motor-bicycles. All machines made by this firm will be fitted with their patent adjustable outside pulley bearing, which has been improved for next season. A specially-designed 3-h.p. engine is fitted, the bore and stroke being 77 by 81 mm. respectively. A mechanical inlet valve is one of the improvements for next season, as also an effective silencer. No alteration in frame design has been made, this having proved satisfactory during the past year.

Although Messrs. J. R. Richardson and Co., Lincoln, Ltd., have been making motor-cars for some little time, it is the first occasion we have had an opportunity of inspecting them. Their attention is at present being centred on 12 to 14-h.p. cars, of which two are being exhibited, one having a standard tonneau body, painted in dark blue, and fitted with hood and side curtains, the other being provided with a special tonneau body upholstered in red leather, and painted the same colour. So far as the chassis is concerned both are identical, and, generally speaking, follow the lines which

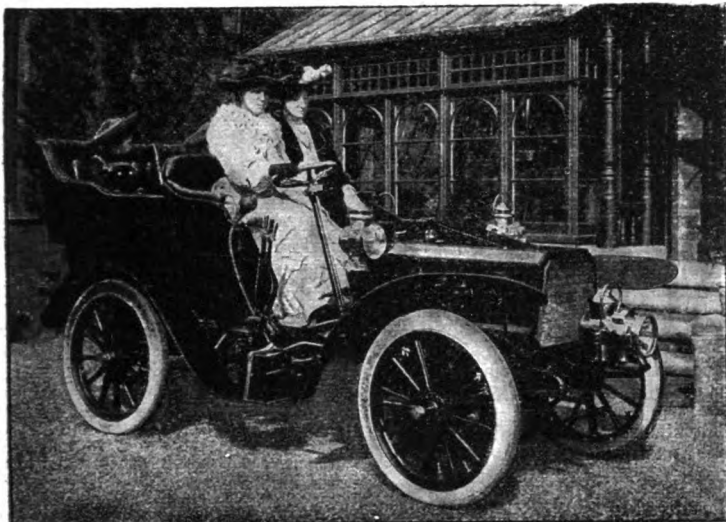


Fig. 5.—The 12-h p. Richardson Car.

may be said to have become standard. The frame is of tubular construction, in the fore part of which is set a 12-14-h.p. Aster double-cylinder engine. The governor, which is adapted to act on the inlet, is entirely enclosed. The water circulation is maintained by a chain-driven pump and a ribbed radiator of the latest type, neatly set in a frame which fills up the front opening in the bonnet. The power is transmitted through a specially-arranged, self-contained clutch to a gear-box, giving four speeds forward and one reverse. Thence a cardan shaft conveys the power, through bevel gearing, to the rear live axle. Special attention has been paid to the brakes, one being fitted on the forward end of the bevel gear shaft near the cardan joint. On the shaft is mounted a special disc, in which is an expanding brake, actuated by a cam controlled by a lever. Altogether the Richardson cars appear to be of high-class construction, both as regards the chassis and the carriage work, large provision having been made in the way of lockers and pockets for the convenience of the passengers.

Quite a new car, and one which has a number of interesting features, is the 18-h.p. "Windora," which is being introduced by Mr. Stephen A. Marples to meet the demand for a high-class, fully-powered vehicle of up-to-date design at a reasonable price. The frame is of channel steel construction, but in the later cars one of stamped steel will be employed. The motive power is furnished by a four-cylinder engine of the slow-running type, fitted with mechanically-operated inlet valves and a new automatic carburettor. The automatic governor is, as in all modern cars, adapted to act on the inlet. Either the ordinary high tension or magneto ignition can be provided. The Grouville and Arquembourg enclosed radiator is employed in connection with the water circulation, which is maintained by a pump. The fly-wheel, of special design, is fitted with helical arms, to create a forced draught through the radiator, the engine being entirely enclosed above and below. The clutch is made of rolled sheet steel pressed into shape and faced with leather. From the clutch the power is transmitted to the change gear-box, thence by bevel gear to a differential shaft, connected by side chains to the rear road wheels. The differential shaft is entirely separated from the gear-box, the power being transmitted from one to the other through a flexible joint. A new design of clutch brake is employed; slight pressure of the pedal when changing gears throws out the clutch, and a further pressure brings into contact with the latter a leather-faced brake, which instantly arrests its motion, greatly facilitating the operation of changing up gears. With a view of facilitating the control, the accelerating and advance sparking levers are arranged above the steering wheel. The irreversible steering gear is of a new type, claimed to present a great advance on the usual worm and segment type. Any play in the steering wheel may be adjusted by turning a single nut without risk of damage to the gear. All essential parts of the steering mechanism and front wheel control are in forged steel, case-hardened at the wearing points, and provided with small oil holes. Both front and rear axles are of forged steel, while the wheels are of large size—870 by 90. Altogether, the "Windora" appears to be a high-grade car, well worthy of the close inspection of motorists.

Four distinct types of Durkopp cars are exhibited by the Motor-Car Emporium, Limited. First we examined a splendid example of the latest Durkopp three-cylinder 15-16-h.p. car, which comprises too many special features to be fully dealt with in a show report. The general arrangement is similar to that adopted in chain-driven cars of the Panhard type, the motive power being supplied by a three-cylinder engine having mechanical inlet valves. The three cylinders are in one casting with an air space between each. In addition to the governor which acts on the inlet, the engine is also controlled by a variable cam fitted to the inlet valve, by which not only can the lift of the inlet valve be varied, but also the time of lifting, by means of a small lever on the steering column. This arrangement is claimed to result in an exceedingly elastic engine, it being possible to vary the speed from 120 to 1,000 revolutions per minute. A special form of cooler is employed, through which a current of air is induced by a fan, the water being circulated by means of a gear-driven pump. Either magneto or accumulator ignition can be fitted. Three forward speeds and a reverse are provided, the drive on the third being direct. Special attention has been devoted to the question of brakes and the lubrication, while the engine and gear box are protected from below by means of a sheet-steel casing. Those seeking a closed car with side entrance will find such a vehicle in the Durkopp brougham, which is fitted with a 10-h.p. two-cylinder engine. To admit of a low-built car the frame is of special construction, while modifications have also been made in the transmission mechanism; from the gear box the power is conveyed by a cardan shaft and bevel gear to a rotating shaft, below the fixed axle; on the ends of the shaft are pinions which gear with internally toothed rings bolted to the rear road wheels. What is undoubtedly the largest vehicle in the show is the Durkopp public-service vehicle, of which we give an illustration on page 739. In addition to the driver and conductor this car has accommodation for twenty passengers. The engine comprises three cylinders and develops 18-h.p. Three speeds and a reverse are provided, the maximum being about eighteen miles per hour. The vehicle has somewhat a heavy appearance, but we understand that a number of them are already at work in Germany and proving successful. On this stand is also to be seen a small 6-h.p. two-seated car on standard lines introduced to meet the demand for a popular-priced vehicle. What is perhaps the most interesting exhibit, at least from an engineering point of view, is the Durkopp six-cylinder engine. This is practically two 3-cylinder engines coupled up on to one large crank case. It develops 40-h.p., and is undoubtedly a fine piece of work.

For the 1904 season the Rex Motor Manufacturing Company, Limited, are introducing two new types of cars—12-h.p. and 24-h.p.—these being known as the "Rex Simplex," the 12-h.p. having two and the 24-h.p. four vertical cylinders, 4 in. dia. by 4½ in. stroke. Of the new type only one of the 12-h.p. models is shown. From an inspection of this we find that a frame of pressed steel is being employed, to which the engine and gear box, as well as the body, is directly attached, no underframe being employed. A feature of the engine is that no outside fly-wheel is employed, each connecting rod being attached to a couple of discs acting as flywheels inside the crank case. The exhaust as well as the inlet valves are located in the top of the cylinder head, the exhaust valves being operated by a side rod and suitable levers very much in the way adopted in the Buchet engines. The carburettor is of the float-feed type with a throttle valve attached. The gear box, which is adapted to give three forward speeds and a reverse, with a direct

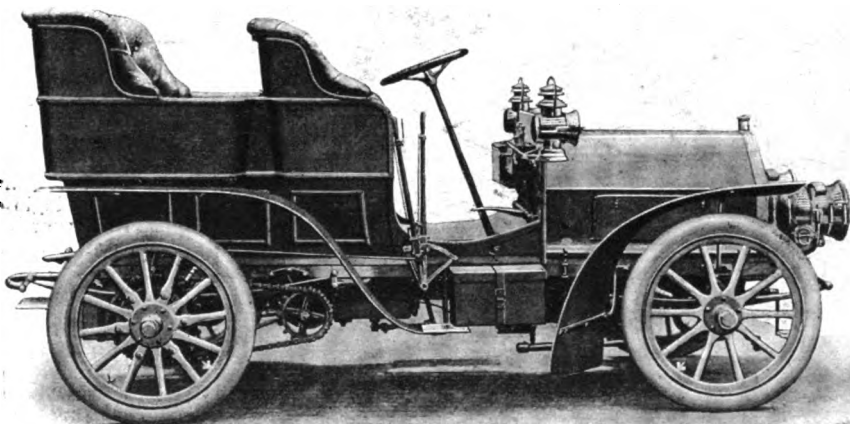


Fig. 6.—The 18-h.p. "Windora" Car.

drive on the third, is supported from the frame by long arms extending from the case to the sides of the frame. Very wide pinions are employed in the gear box; the cardan shaft and bevel gear system of transmission on to a live axle is adopted, universal joints being introduced not only in the cardan shaft, but between the gear box and the clutch. The latter is of the cone type, 15 in. in dia., and can be readily dismantled without disturbing the change speed gear. Altogether the new Rex car is a marked advance on its predecessors from the same works.

Still another new car is the "Wilkinson-De Cosmo," the joint production of the Wilkinson Sword Company and M. J. de Cosmo, until recently the consulting engineer in the motor department of the Fabrique Nationale d'Armes, of Herstal, Belgium. The vehicle, which is being introduced by the Cadogan Garage and Motor Company, Ltd., of Chelsea, is an excellent specimen of modern motor-car construction, and has been closely inspected during the week. The frame is of channel steel, in the fore part of which is arranged a four-cylinder engine developing 24-h.p. The cylinders are cast in two pairs, and are 130 mm. bore by 100 mm. stroke, the normal



Fig. 7.—The Wilkinson-De Cosmo 24-h.p. Car.

speed being 900 revolutions per minute. The gas is furnished by a special carburettor, in which the mixture is automatically varied according to the speed by means of a diaphragm. The automatic governor is adapted to act on the inlet and can be cut out by means of a pedal. The silencer is of new design, claimed to allow the engine to work quietly at all speeds, without any appreciable back pressure. A framed rib radiator is employed in connection with the water circulation, which is maintained by a gear-driven pump. Three speeds and reverse, controlled by one lever, are provided, the engine driving through a clutch, gear-box, and cardan shaft on to a rotating shaft inside the rear hollow axle, which carries the wheels, the power being communicated to the latter at the ends. In addition to the usual brakes, a ratchet sprag is fitted on the shaft which projects from the rear end of the gear-box, to prevent the car running back on hills. Altogether, the new car, as will be seen from the illustration (Fig. 7), is on up-to-date lines, being fitted with a luxurious tonneau body adapted to seat five persons. The Cadogan Company also exhibit two "Antoine" belt-driven motor-bicycles, of 2½ and 2¾-h.p. respectively. The engines, which are set vertically in a loop frame, are noticeable for the deep radiating flanges with which the cylinder is provided.

The well-known De Dietrich cars are to be seen on the stand of the Burlington Carriage Company, Ltd., whose exhibit comprises a couple of highly-finished 16-h.p. cars with tonneau bodies and the chassis of the

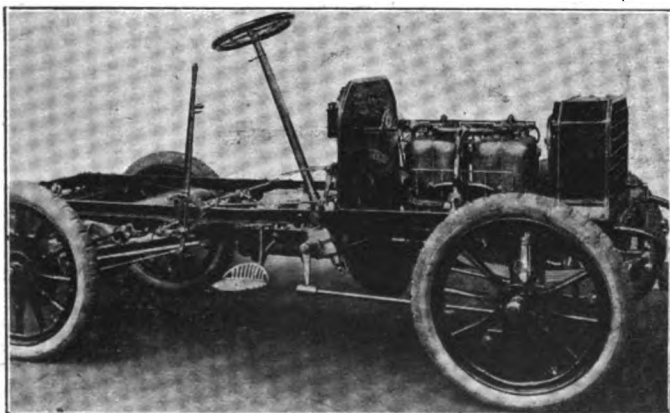


Fig. 8.—Chassis of the Wilkinson-De Cosmo Car.

12-h.p. type, permitting the details, which have already been described in the *Journal*, to be examined.

Quite a large family of Baby Peugeots is to be seen on the stand of Messrs. Friswell, Ltd., including one of the first of the 1904 models. Among the many minor improvements in the latest type we note that the rear axle is now being made stronger, and that adjustable ball bearings are fitted in the centre, outside the differential gear-box. The wheel base has been slightly lengthened. So far as the 5-h.p. engine is concerned no alteration

has been found necessary, except that an improved form of silencer is being provided. A new three-speed and reverse gear is now employed, ball bearings being fitted to the second shaft. An interesting little detail is that the oiler is now arranged so that it can be actuated by the foot. With a hood, side doors, and front glass, the new Baby makes a decidedly smart little car. Several of the 2-h.p. Peugeot motor-bicycles are also to be seen on the stand.

Messrs. Burkin and Clarke, of Beckenham, exhibit an ingenious form of portable canopy for the use of motor-cars. The blinds are fitted with springs, and, as they are independent of each other, fold up neatly when not in use. The side or back blinds can be used independently of each other, and employed to protect the passengers either from rain or dust.

Accumulators for use on motor-cars and cycles form the exhibit of Messrs. H. W. Cocks and Company, Richmond. They are made in celluloid, ebonite, and polished teak or walnut cases. A feature of the Cocks accumulator is that the plates are well raised from the bottom of the cell, and are fitted with non-short-circuiting separators. They are sealed with composition, and a special acid-proof cement is used, which is stated to neither crack nor allow acid to creep to the terminals.

A car, which since its introduction a few months ago has quickly run into the front ranks of popular-priced vehicles is the "Vauxhall," made by the Vauxhall Ironworks Company, Limited. The standard pattern is a two-seated car, but examples of vehicles capable of seating four persons are also on view. The motor consists of a 5-h.p. governed water-cooled horizontal engine of the slow-running type. The piston and all working bearings are automatically lubricated from a glass-sight feed drop lubricator, placed on the dash-board in full view of the driver. The crank case is so designed as to be readily opened completely in halves, by un-screwing four nuts. A large inspection door is also provided through which a quick examination of all the main working parts can be made. A heavy fly-wheel of large diameter is employed, which aids greatly to steady and easy running of the engine and car. The



Fig. 9.—The Vauxhall 5-h.p. Car.

carburettor is of the spray type, with self-adjusting air inlet, and is self-contained with the inlet valve and its case, the whole being detachable for inspection by unscrewing three nuts. The governor is of the centrifugal type, and is controlled by a small foot pedal, by means of which the speed of the engine may be varied as desired. Two speeds are provided—eighteen and eight miles per hour. On the top speed the power is conveyed direct from the crank shaft to the tubular back axle by a single chain. The low speed is obtained by a special form of rotary or crypto gear box carried on the motor shaft. The frame is of the flitch plate girder type, the strength of the wood body being incorporated with the steel frame. Leather-lined double-acting band brakes are fitted to drums on both back wheels, actuated either by a pedal or a hand lever. The control of the speed of the car and engine is effected by a handle conveniently placed to the driver's right hand on the top of the steering pillar. By slewing this handle partly round the pillar, the three positions, "1st Speed," "Stop," "2nd Speed," are obtained, and by slightly rotating the same handle the speed and power of the engine are controlled by limiting the amount of mixture admitted to the cylinder. The steering is effected by the left hand of the driver actuating a horizontal tiller so hinged to the top of the steering pillar that it can be thrown up vertically to permit of easy access to the driver's seat. The water circulation is maintained by a small rotary gear-driven pump and a series of brass radiators. A feature of the vehicle is the employment of spiral springs, these having been adopted in order to obtain the ease of motion associated with the best examples of heavy cars, at the same time adding generally to the neatness and strength of the design. Owing to the general design, low revolutions, and a novel form of exhaust silencer, the running of the car is extremely silent.

An immense display of motor-cycles is made by the Rex Motor Manufacturing Company, Limited, no less than fifty machines being staged. For the 1904 season the Rex is being fitted with a 3½-h.p. vertical engine, fixed in a cradle in front of the bracket. It is attached to the cradle by four of the crank chamber bolts, which slip into slots in the cradle, allowing the engine to be easily detached from the machine. The engine is now fitted with valves 1 7/8 inch in diameter, and a new quick detachment inlet dome which can be taken off by simply unscrewing one set screw.

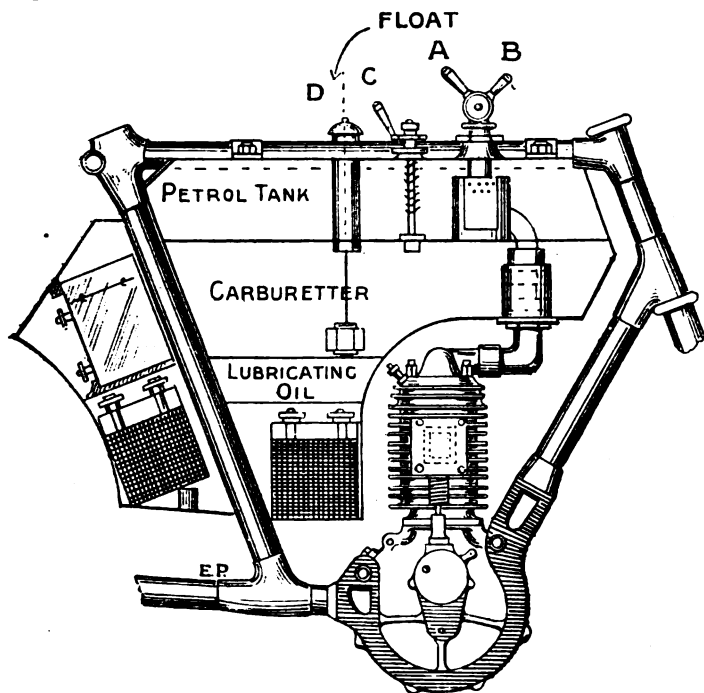


Fig. 10.—Sectional View of Tank and Carburettor of Rex Motor-Bicycle.

In Fig. 10 we show the arrangement of the engine, petrol tank, carburettor, lubricating oil tank, accumulators, and coil. The new engine is fitted with the Rex silencer, which is incorporated in the walls of the cylinder, but a departure has been made by casting a series of air ducts between the exhaust chamber and the cylinder wall in a direction fore and aft of the machine. Through these ducts a current of air is constantly passing when the machine is in motion, which is claimed materially to assist in keeping the engine cool.

The wipe contact has been adopted in conjunction with a trembler coil, and a spare accumulator is provided. New oval girder forks and extra wide mudguards make another feature of the machine, while the wheel base has been considerably increased. The mudguards over the rear wheel are now provided with a side extension, which covers the belt, and protects it from wet, mud, and dirt.

All the new models are finished in aluminium, and lined, a finish which the firm have adopted as a standard. Another feature which will be appreciated by users of these machines is a direct action brake operating on the inside of the belt pulley. This is put into action by means of the rider's foot without leaving the pedal. In addition to the motor-bicycles a number of the two-seated Rex "tri-cars" are on view, one being fitted with a small box in place of the front seat, and being intended for tradesmen's use.

The Beaufort Motor Company are early in the field with a car built to meet the demand for a vehicle the rear seats of which can be reached from either side, instead of at the rear. The car, which is known as the "Princess" phaeton, is of pleasing design, and has attracted much attention during the week. The rear part of the carriage body is of tonneau form, having ample room for three passengers. So far as the chassis is concerned, it may be mentioned that the frame is of pressed steel. The 12-h.p. engine is fitted with mechanically-operated inlet valves, actuated by two cams, these and the automatic governor running in oil baths. For ignition purposes, the Bergmann magneto is adopted. Three forward speeds and a reverse motion are provided, the cardan shaft system of transmission on to a live axle being adopted. A feature of the rear axle is that it is surrounded by a casing which relieves it of all strain. The brakes are of the internal expanding variety, while the water cooling is effected by a gear-driven pump and a special radiator, through which a current of air is induced by a large fan. The Beaufort 10-h.p. two-cylinder car is a no less interesting vehicle, comprising practically all the same features as the new 12-h.p. vehicle; while a powerful touring car is to be seen in a 20-h.p. four-cylinder chain-driven tonneau with canopy. On the stand are also to be seen examples of the Beaufort 9-h.p. single-cylinder cars, which are so well known as to render a description unnecessary at this time.

A car which has come into considerable prominence during the past few months is the "Sunbeam," made by Messrs. John Marston, Ltd., who

exhibit two well-finished examples of the same. While following the now standard lines of chain-driven cars, the details are such as to command attention. The motive power is supplied by a four-cylinder engine having a relatively long stroke, the cylinder dimensions being 80 mm. bore by 120 mm. stroke. It is of the slow-running type, the normal speed being 800 revolutions per minute. The governor is adapted to act on the inlet. Four speeds forward and a reverse are controlled by one lever, a safety device being provided to prevent the reverse motion being used when the car is going forward. The engine and gear are entirely protected below by a steel shield; while what is perhaps the most interesting feature of the car is the fact that the driving chains are entirely enclosed in oil-containing gear cases, which are so fitted as to move with the springs in every direction. There can be no question that by means of these cases the life of the chains is considerably increased. Messrs. Marston also display one of the curious-looking "Mabley" cars, which have already been described in these columns.

What appears to be a well-made 3-h.p. motor-cycle engine is that shown by Messrs. White and Poppe, Ltd., of Coventry. The cylinder has a bore of 80 mm. by 80 mm. stroke, developing 3½-h.p. on the brake. We understand, however, that a slight alteration is being made in these dimensions in order to bring the engine up to 3½-h.p. The inlet and exhaust valves are on the same side of the engine, both being mechanically actuated. The rods which lift the valve stems are provided with adjusting screws, so that any wear may be taken up, and prevent any noise or rattle in connection with the valves. Another useful feature is that the valve seatings, as well as the valves, can be readily detached, and that air can circulate completely round the externally-ribbed walls of the valve chambers.

An interesting display of the Westfield Autobikes is made by the Rising Sun Motor Works, of Brockley Road, S.E. The engine—of 2½-h.p.—is mounted vertically in the frame; the cylinder is 74 mm. bore by 78 mm. stroke, with large flywheels and bearings. Transmission is by means of a V-belt. A feature of the machine is that an improved twisting handle, connected with the exhaust lift and switch, enables it to be controlled without taking the hands from the handlebars. Two brakes—an expanding band brake in the back hub and a front rim brake—are fitted. Three sizes of engine pulleys are made—small, for forecarriage and trailer work in hilly districts; medium, for ordinary travelling and trailer work; large, for fast road work and racing; these pulleys being interchangeable and easily detachable. A couple of Trimos, or motor-bicycles with fore-carriages, for two persons, are also shown, one having a 2½-h.p. motor and the other an engine of 3½-h.p.

A large display of the "Britmo" motor-car components is made by the British Motor Fittings Company, Birmingham. Among these are examples of the firm's 9-h.p. and 12-h.p. vertical two-cylinder engines. These are of the slow-running type—about 900 revolutions per minute. The two cylinders are cast in one piece, the bore and stroke in the 9-h.p.

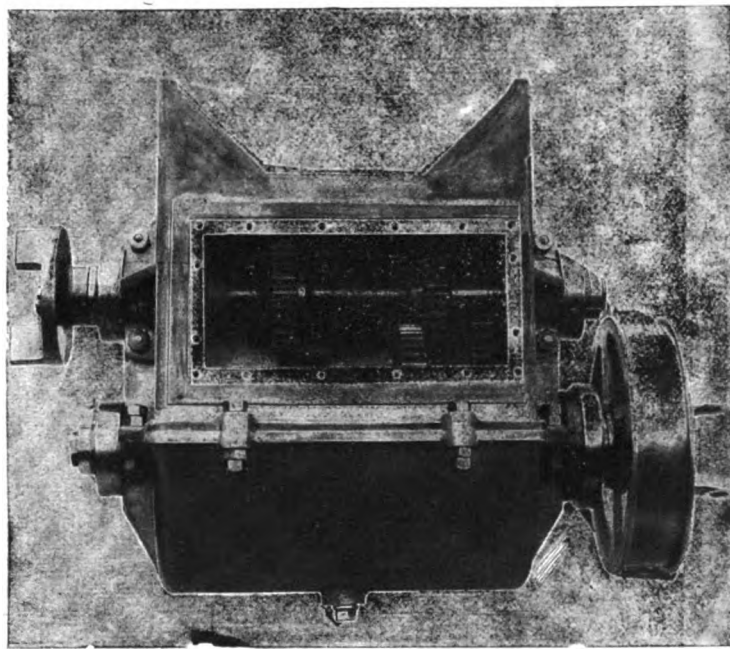


Fig. 11.—The British Motor Fittings Company's Change-Speed Gear.

type being 4 in. by 4½ in., and in the 12-h.p. 4½ in. by 5½ in. The contact maker is of the "wipe" variety, while the centrifugal governor is, as usual in all modern engines, adapted to act on the gas inlet. Change-speed gears are another product of the concern, these being made arranged for both chain-driven and live axle cars. Fig. 11 depicts the gear-box giving three speeds and reverse on one lever, adapted for chainless cars of from 7 to 10-h.p. Specimens of water-circulating pumps, front and rear axles, worm and segment steering gears are also included in the display, which is well worthy of inspection by motor-car agents and builders.

(To be concluded.)

THE STANLEY SHOW.

As at the National, there is a very imposing display of motor-cycles at the Stanley Show, at the Agricultural Hall, Islington, N.

One stand is devoted to a representative display of chain-driven motor-tricycles, bicycles, and tandems by Messrs. Humber, Limited, the presence of a working model of the engine being a popular feature. The chief development for the coming season is the fitting of the clutch illustrated in Fig. 1. This enables the engine to be started by means of a handle. It will then run without the machine being mounted on a stand. When the engine is running, the machine can be

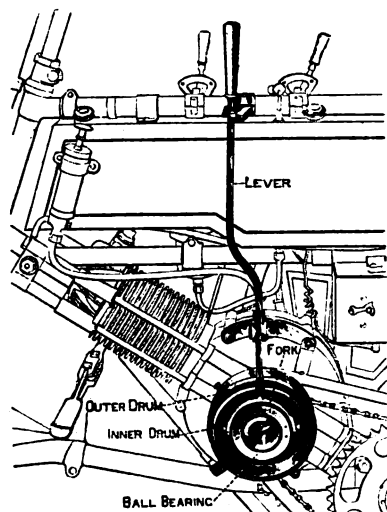


Fig. 1.—The Clutch on the Coventry Humber Motor Bicycle.

mounted and the clutch brought into play to connect the engine with the road wheels, thus obviating the necessity of pedalling. This clutch is shown on the 2½-h.p. Humber motor-bicycle, the 2-h.p. Humber motor-bicycle, and the 3-h.p. Humber Olympia motor-tandem. This latter has a water-cooled engine in the usual position on the Humber machines, the radiators projecting from the tank fitted behind the seat of the fore-carriage. A fore-carriage for the G.P.O. is also one of the attractions on this stand.

The Iris Motor Company exhibit a range of both air and water-cooled motor-bicycles. Although they have only been introduced into this country during the past season, they are already well known, while on the Continent they occupy a leading place among motor-cycles. The first machine to catch the eye is the 5-h.p. double-cylinder water-cooled motor-bicycle, fitted with friction clutch, 1½ in. flat driving belt and hand starter. The water tank has an ingenious little radiator on each side and carries sufficient water for a run of 200 miles. The whole machine, although water cooled and having two cylinders, does not appear clumsy or complicated, while the weight, 160 lbs., cannot be called great. The carburettor is of a new type, with

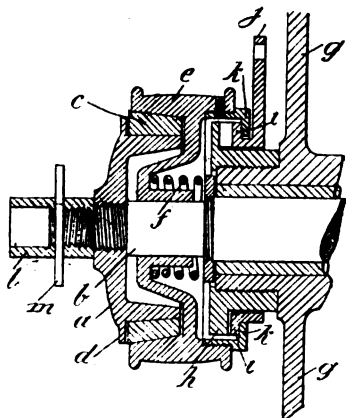


Fig. 2.—Section of Clutch on the Iris Motor Bicycle.

automatic mixture adjustment, and the only lever is for the throttle. As will be seen from Fig. 3, the engines are arranged in the form of a V, the two pistons working on to a central crank shaft. The cylinder dimensions are 65 mm. bore by 80 mm. stroke. As already mentioned, the engine pulley is provided with a clutch which enables the motor to be started by hand before mounting. A sectional view of the clutch is given in Fig. 2. The disc *a* fixed to the motor shaft *b* is covered with vulcanised fibre *c*, and forms a cone for engaging in the belt pulley *e*, which is forced into contact with it

by a spring *f*, but otherwise runs free on the shaft. The pulley *e* has a ring *k* engaging in a groove in the collar *i*. This collar and the fixed shoulder *h* have inclined surfaces, so that when the collar is rotated by the arm *j*, the pulley *e* is drawn out of contact with the cone *c* and the engine runs free. With the parts in this position the motor may be started by a handle applied to the extension *l* and cross pin *m*. The Iris Company also show a machine fitted with a single-cylinder, water-cooled 2½-h.p. engine, with multitubular water tank. This is also provided with friction clutch and hand starter, other details being similar to the 5-h.p. machine. The total weight is 120 lbs. For those not desiring water-cooled machines, 5-h.p. twin-cylinder and 2½-h.p. single-cylinder air-cooled machines are also made, as well as a very light 2-h.p. air-cooled machine weighing 80 lbs. The Iris Motor Company are also agents for Bara and Pascual, manufacturers of electrical accessories, Paris, and have a large display of accessories for motor-cycles and cars. Another line well worth carefully examining is the Nil Supra make of coils, an exhibit of interest in this section being a four-cylinder coil for cars with only one high-speed trembler for the four plugs.

Considerable interest is being shown in the exhibit of Griffon Motors, Ltd., and more particularly in the 4½-h.p. racing motor-bicycle which Demester, the well-known French racing motor-cyclist, has ridden to victory in several recent competitions and races in France and Belgium. The standard Griffon motor-bicycle is fitted with a 2½-h.p. engine, located vertically in the frame. The inlet valve is mechanically actuated, while the mixture is furnished by the latest type of Longuemare carburettor. The machine, which is belt-driven, appears to have been well thought out with the object of rendering all the parts of easy access, while the weight has been kept down as far as possible, the weight complete being 110 lbs.

One of the latest Coventry cycle firms to take up the manufacture of motor-bicycles is the Rover Cycle Company, Ltd., who have produced a very interesting machine. The frame is of special design for the purpose of carrying the motor in the popular vertical position. The motor is of 3-h.p., having both a bore and stroke of 3 in. The inlet and exhaust valves are mechanically operated, a separate cam being used for each valve, and the

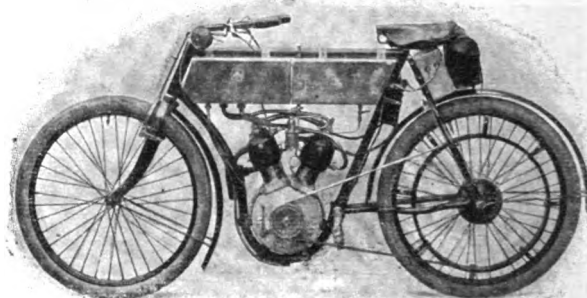


Fig. 3.—The Iris 5-h.p. Water-cooled Motor Bicycle.

lower end of each valve tappet being provided with a roller to minimise the friction. An improved method of retaining the valve springs is employed, consisting of a slotted collar which slides on to a reduced diameter near the end of the valve stem, over which a sleeve fits, holding it in its place; the top of the sleeve is cupped out to accommodate the lower end of the valve spring. The sparking plug is situated immediately above the inlet valve, and in the exact centre of the cylinder head is inserted a patent paraffin valve. Handle-bar control is provided by the left inverted lever actuating an exhaust valve lifter, whilst the right inverted lever breaks the electric current and also applies the front brake. The contact-breaker is an original design, having neither a trembler blade nor a platinum-tipped screw; it is a "wipe" contact, there being, however, no friction except at the moment of the contact being made. The carburettor is of the float-feed spray type. Two separate accumulators wired up to a two-way switch are provided, so that one accumulator can be always held in reserve and instantaneously switched into use upon the other evincing signs of exhaustion. Transmission is effected by a V-belt. In addition to the front wheel rim brake worked by the right hand inverted lever, a back-pedalling expansion brake actuated by a clutch on the crank shaft is provided.

At the stand of the Motor Manufacturing Co., the 8-h.p. M.M.C., which has figured so well in recent Trials is conspicuous, and the chassis, which is also shown, is worthy of close study. The company is making an important feature of bicycle motors, and that fitted with mechanically operated valves is receiving considerable attention from the trade. To this we hope to refer again in a later issue.

The new models of the Minerva motors and motor-cycles have already been dealt with in the *Journal*, so that it is only necessary to mention that a big display of these well-known engines and machines is made by Minerva Motors, Limited. Examples of motor-bicycles, with the engine set both vertically and inclined, are staged, the horse-powers ranging from 2 to 3½-h.p. Much interest is being shown in the 3½-h.p. racing and pacing machines, with their long and curious handle-bars, as also in the frames containing the component parts of the Minerva engine. Reference may also be made to a 2-h.p. motor-bicycle ingeniously arranged for the use of a lady rider.

With the view of overcoming the great vibration experienced on many motor-cycles, Mr. J. L. Thomas, of Barnet, is showing a very ingenious

spring fork. Although this is exhibited in connection with a 2½-h.p. motor-bicycle of his own construction, the spring fork is now made in such a way that it can be fitted to any machine. Not having had a trial, we cannot speak from experience, but the arrangement certainly looks one likely to at least reduce the amount of vibration transmitted to the rider.

Messrs. Alldays and O'ions have an interesting exhibit of their new pattern motor-cycles, some of which have fore-carriages attached. They are also showing their latest model of "Traveller" voiturette. There are several special features in the motor-cycles. The 2½-h.p. engine is made throughout by Messrs. Alldays, and all parts are interchangeable. The frame is designed with a special cradle for carrying the motor in an upright position. Lugs are provided on the crank case which correspond with the faces on the cradle, and are securely held by four bolts, an arrangement which is claimed to give great strength to the frame, and obviates the necessity of clamping the engine to, or bending the tubes. The tank has compartments for two accumulators, coil, lubricating oil, and sufficient petrol for 160 miles. A float register is provided for showing the quantity of petrol in the tank. The machines, fitted with fore-carriages, are strongly built, and a specially-designed frame is constructed for carrying a well-finished and smartly-upholstered bucket seat. The 5-h.p. "Traveller" voiturette, which has already been described in these columns, shows a few changes in detail, but is otherwise unaltered. We understand that the company are at work on a somewhat larger car, which will be fitted with a 6½-h.p. engine.

An ingenious motor-cycle belt fastener is exhibited by Messrs. Smith Bros. and Co., of Gloucester. It is designed so that both ends of the belt meet together; the top cleats have oval holes put in them, so that when passing over the engine pulley they come into operation and take away half the strain on the centre staple and allow the belt to be perfectly flexible. The fastener is intended for use with flat and V-shaped belts.

Among the exhibitors of tyres are Messrs. Reddaway and Company, who show their non-slipping treads; the Dunlop Pneumatic Tyre Company, Ltd., who, in addition to a full range of tyres for cars and motor-cycles, have a good display of motor clothing, including the Autosaque, the D.B. motor suit, driving aprons, etc.; and Messrs. Shippey Bros., with their Diamond motor-tyres and the "new puncture proof" jelly compound. The Palmer cord tyres, illustrated in the *Journal* last week, are attracting crowds to the stand of the Palmer Tyre, Ltd., while the identical set of tyres used by M. Jenatzy in the Gordon Bennett race render equally good service to the exhibit of the Continental Caoutchouc and Gutta Percha Company. The North British Rubber Company, Ltd., have a large display of Clincher-Michelin motor-tyres, Clincher motor-tyres and solid tyres for automobiles. Adjoining their exhibit is that of another firm from north of the Tweed, the Scottish Tyre, Ltd., which shows the "Scottish de Luxe" voiturette tyres, which are built up with rubber and tangential linings, the normal crescent shape being maintained throughout the whole process, to ensure resistance to punctures. The Clipper Pneumatic Tyre Company have a selection of motor repair outfits, and their Clipper-Continental motor tyres for heavy cars as well as for voiturettes. Messrs. David Moseley and Sons, in addition to a selection of leather goods for motorists, show their ribbed tyres for light cars, jointless motor tubes, and the Simplex motor-cycle cover.

A motor tool bag of good appearance is the principal exhibit of Messrs. Gough and Co., of Birmingham. This has separate compartments for each tool, and closes into a space of 8½ in. by 6½ in. by 4½ in., the shape being retained by reason of the thin sheets of aluminium with which the top and sides are lined.

Motor tools are shown by Mr. Joseph Bradbury, of Braintree, and from the same town come Messrs. Lake and Elliott with some of their specialties, which have been previously illustrated in our columns. Their "Millenium" universal motor jack has a long handle with easy adjustment, while its range is from 8½ in. to 21½ in. Brazing lamps, wheel-building tools, stands, and jacks of great variety make up Messrs. Lake and Elliott's good display.

Excellent motor castings in aluminium attract many visitors on entering the Arcade, these being shown by Mr. Robert W. Coan, of Myddelton Street, Clerkenwell, whose practical experience in the business has been the great factor in its success. His castings are characterised by good work, and Mr. Coan's clientele embraces the leading firms in the industry.

The portable steam vulcaniser shown by Messrs. Harvey Frost and Co. will prove a useful machine in many a provincial garage. This is adaptable to work either on the curve or the flat, and with steam heat at 80 lbs. pressure the temperature can be assured to be exactly that necessary for an efficient repair. The steam is raised by a Bunsen gas burner, located under the generator, and is easily regulated by the admission of more or less gas. By means of this simple device tyre repairs can be quickly effected. Messrs. Harvey Frost and Co. have also an assortment of accumulators, auto-tremblers, coils, plugs, contact breakers, and other accessories.

Bifurcated rivets are shown by the company bearing that name, whose offices are in the Wool Exchange, E.C. These are proving effective for the repair of belts, etc., and can be had in sizes ranging from ½ in. to 1½ in.

Motor clothing in almost confusing variety is exhibited by Messrs. Alfred Dunhill, Ltd., who is attracting visitors to his stand by means of a mighty motorist clad in a paraphia and accompanied by a diminutive lad in motor-cycling garb. These, perambulating the gallery, lead the onlooker to the stand, whereon is as fine a show of motor accessories and clothing as we have seen. Motor-car driving aprons, speed indicators, goggles of a hundred styles, lamps, cleaning outfits, etc., find a place, while the display

of motor coats and waterproof clothing is equally comprehensive. "Bobby finders" are a new feature of this firm's display, these consisting of a pair of opera glasses neatly embedded in a goggle frame.

Ample preparation for the new conditions which will be imposed on motorists by the new Act has been made by Messrs. Salsbury and Son, Ltd., who have brought out a new tail lamp fitted with a removable red glass at the rear. This, when taken out, enables the lamp to be used for inspection purposes. The side light is set at a proper angle to fully illuminate the number plate, and the lamp is well designed as well as neatly executed. To avoid the glare from the headlights some of the lamps are now fitted with a detachable shade, which can be drawn across to avoid frightening horses, etc. Recently Messrs. Salsbury and Son have extended the scope of their business to embrace motor accessories of every kind, and are now placing the "Strictor" belting on the market. Clothing is also within the range of their activities, their specialties in this department being distinguished by the trade name of "Komilfo."

The "Bartlite" acetylene lamps for motor-cars comprise a serviceable display made by Messrs. Bartlett and Co., of Monkfield Road, South Tottenham, N. These are of uniform good design and finish, being made with round or oval fronts in brass, German silver, or in nickel-plated brass. In this lamp the generation of gas can be stopped at once, and should the charge of calcium carbide not have been exhausted, the lamp can be put on one side and relighted when required, without recharging. The "Bartlite" lamp will burn in any position and will give a good light for twelve hours with one charge of carbide, and one charge of water. An excellent arrangement is that of an independent generator with two lamps. This is intended to be fixed under the driver's seat, and is connected with the lamps by flexible metal tubing. Each generator is provided with three taps, one of which can be used in connection with the tail lamp if desired.

From Nottingham come Chas. Binks, Ltd., with a novel four-cylinder motor-bicycle of 5-h.p., in which the rider sits in a spring bracket seat, properly upholstered, and provided with foot rests, giving something of the comfort associated with the car. Our illustration (Fig. 4) shows the machine with the cylinders arranged longitudinally, although these can also be fitted transversely, thus presenting a greater surface for air cooling.

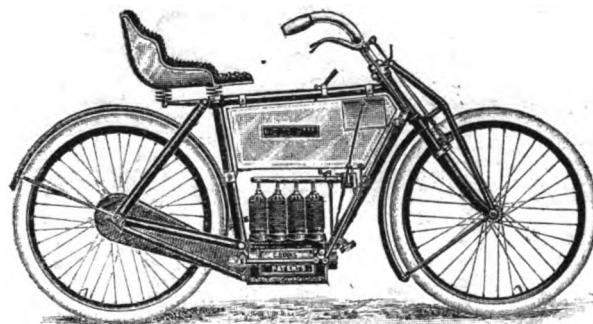


Fig. 4.—The Binks Two-Wheel Car.

The motor-cycle is chain-driven from the countershaft. The crank-shaft and the cam-shaft are both mounted on ball bearings. Mechanically-operated inlet valves have been fitted. The ignition is effected by a four-trembler coil and one set of batteries. To start the engine no pedalling is required. The petrol supply having been turned on, the machine is pushed about three feet, the rider takes his seat and raises the clutch lever and the machine will start at once. It is claimed that vibration is reduced to a minimum in this machine, which has an aspect of simplicity about the handle bar which will prove attractive to many riders.

(To be concluded.)

THE couplings on the exhaust pipe should be carefully watched when a car is new. It will be found that they are apt to work loose at first, owing to the expansion of the exhaust pipe when hot and its subsequent cooling. Occasionally tightening the couplings with a wrench will soon set them right, after which they should require no further attention.

A READY way to test petrol in the absence of a hydrometer is, remarks Mr. R. B. Bramwell in "The Automobile," to pour a quantity of the doubtful fluid on the palm, moving the hand rapidly about to aid evaporation. If the hand is left perfectly dry the petrol may be safely employed, but if an oily residue remains it should not be used.

WHILE in a petrol car the water jackets of the engine cylinders are the parts most likely to be damaged by freezing, in a steam car the piping system is the most exposed. As anti-freezing solutions cannot be employed in steam boilers, in very cold weather the tanks and pipes of a steam car should be completely emptied when it is stored in a cold stable.

CORRESPONDENCE.

CHARGING ACCUMULATORS.

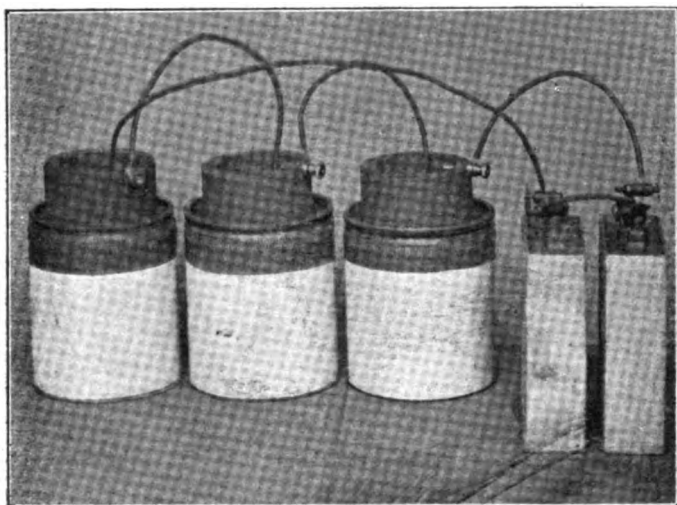
TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to Mr. Cave-Browne-Cave, the "Boron" battery is merely a double-fluid chromic acid cell, which is perhaps the best type for charging accumulators. Three cells of such a battery will charge two 2-volt accumulators in parallel, but as some car cells are made up permanently in pairs, as 4-volt accumulators, about five cells would be necessary, and, in this case, it would be advisable to have a resistance in circuit, which may be merely a length of, say, No. 16 German silver wire, so as to adjust the current to that suitable to the accumulator, generally between two and four amperes. Two-fluid chromic batteries work best if a proportion of potassium chlorate is used in the depolarising solution, a good formula being:—Chromic acid, 12 oz.; sulphuric acid, 12 oz.; potass. chlorate, 1 oz.; water, 40 oz. Batteries, however, are messy and troublesome at the best, and if power, or even a good water pressure suitable for running a miniature water motor, is available a small dynamo is much to be preferred, or the latter can be fitted on the car.—Yours truly,

R. W. BUTTEMER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The photo I send you shows my Boron battery applied to charging two accumulators, from which it will be seen that the method of using the battery is very simple and requires no extensive knowledge of electrical science. I have had the battery over four years. There are other batteries to be obtained, but I think the Boron battery would be hard to beat for economy, simplicity, and freedom from risk. Even if I could



get my accumulators charged 100 yards away I would prefer to do them myself. In fact, I have current in my shop driving a 2-h.p. motor, but I would not take the trouble to tap the supply while I have the battery. I have no interest other than that of a satisfied user. Mr. Cave-Browne-Cave or anyone else will get fullest particulars from the Boron Battery Company, of St. Domingo Road, Liverpool.—Yours truly,

J. HOPE.

DIFFICULTY IN STARTING MOTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Under this heading, "Anxious," who possesses a stubborn 2-h.p. Beeston, asks your readers for kind advice as to the treatment of his fractious engine. In your interesting editorial answer, the difficulty is attributed to a variety of causes, which, from their multiplicity, are apt to perplex the inexperienced beginner. After some years' practice I have always found the difficulty in starting due to one cause alone, and to none other, viz., the solidification of the lubricating oil in the cylinder piston rings. My own much-valued 2½-h.p. Clyde "Magneto" bicycle always annoys me in this manner. As it, happily, is not subject to the sparking troubles to which you refer, it is clear the cause is not to be sought for in that direction. Now, as to the remedy, let "Anxious," the moment he finishes a journey, run out the lubricant from the bottom of his crank chamber, and, as you say, inject some paraffin, or petrol through the compression tap. Motor-cyclists must, however, purchase portable stands—the McCurd I can recommend. Then, after another injection, before starting let them mount their stationary steeds, and the two hours' difficulty, which "Anxious" alludes to so feelingly, will resolve itself into two or three moments' vigorous pedalling, which breaks down the adhesions of the lubricating oil. Of course stale petrol in the carburettor might, if the machine has been put on one side

for some time—be responsible for faulty firing, but your correspondent tells us he sees to this. After trying my remedy, if "Anxious" will inform us of the results he obtains, in your columns, I think he will in future sign himself "a joyful motorist," instead of an anxious beginner.—Yours truly,

EDWARD KENNARD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to "Anxious's" letter in the last issue of the *Journal*, I think that his trouble is very likely due to the petrol, which of late has been very indifferent, though he must bear in mind that all surface carburettors are liable to give trouble in starting, especially in cold weather and after standing. He will possibly get over the difficulty by injecting petrol into the cylinder, so that the first few explosions may be obtained. A spray carburettor would certainly be preferable, and there should be no difficulty in affixing one to his tricycle.—Yours truly,

HAZELDEAN.

QUERIES RE BENZ CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you kindly inform me, through the *Journal*, (1) Is it possible to fit a 3½-h.p. De Dion engine in a 3½-h.p. Benz car in place of the original engine, and connecting the crank shaft with the present drum so as to retain the ordinary Benz belt drive? Of course the large flywheel would be taken off. (2) If so, would the gearing of sprockets require very much alteration, and would the original trembler coil and carburettor be successful? Also, would the present system (ordinary Benz) of water-cooling act all right? If possible at a moderate cost would you advise the alteration? Would it develop more power than the slow speed engine?—Yours truly,

W. R. COLLIS.

[It would be quite possible to fit a 3½-h.p. De Dion engine into a Benz car, but not without a considerable amount of alteration and expense. In the first instance the gearing down of the sprockets would need to be just double what they are at present, the Benz engine running at 750 revolutions per minute and the De Dion at from 1,500 to 2,000. The carburettor would probably prove satisfactory, but we are in doubt as to whether the coil would be sufficiently fast, as those usually fitted are not of the high-speed type. The water circulation would also need a pump and radiator, as with the present engine the water rapidly boils away, and this would be doubly increased with an engine running at double the speed. Upon considering all points, we should not advise the alteration. The power would be practically as at present.]

THE SPEED OF TRAMCARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should like to know what useful purpose is being served by the course pursued by Mr. Ford in regard to the speed of the electric tramcars. In these times people want to get from place to place in the quickest time possible, and I feel sure they will not thank Mr. Ford for his trouble. Who asked Mr. Ford to champion this cause? Does he hold any mandate from the British public to so act?—Yours truly,

CHAS. J. CLAMP.

CARBURETTOR TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I write to ask if you or any of your readers can explain the cause of the trouble I am experiencing with the float feed carburettor of my car. If the vehicle is not used for two or three days, the float and the interior of the float chamber become corroded to such an extent that the float is prevented from shutting off the supply of petrol. Each time the car is left standing for a few days I have to take the carburettor apart and remove the products of corrosion before it will again operate properly. Is there any method of preventing this corrosion? The carburettor is made of cast brass or bronze, while the float is of sheet brass.—Yours truly,

COUNTRY MOUSE.

[There should be nothing in petrol which can cause corrosion in brass fittings. If the car is a new one the cause might be looked for in an excess of soldering fluid left about the joints of tank, but this could hardly have a long-continued effect. Is the sticking due to actual corrosion, or merely to a deposit? There may be too little clearance for the float; but in any case trial should be made, after cleaning out the tank, with a good brand of petrol, before attempting to meddle with the construction of the carburettor.]

IGNITION TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I, and several fellow motorists, would like information on the following point. I have asked several electricians and motor experts, but they can only tell me what they "think." In my car I have a trembler coil and an ordinary De Dion contact-maker (with the contact screw tighter up, of course), and the trouble is the rapid burning or "pitting" of the platinum points in the contact maker.

The trembler coil is one of those with only one high-tension terminal, the other end of the secondary (or high tension) coil (connected internally) getting "earth," or complete circuit down the primary or low-

tension wire from coil to contact-maker; therefore both the high and low tension currents pass through the platinum points of the contact-maker. Query—Is the voltage at those points that of the two currents combined, and is that the cause of the burning or "pitting?"

I know someone will advise a wipe contact, but wipe contacts have to get "earth" through the oiled bearings, and misfires are the result; I have had one. With a positive contact maker and the base connected direct to "earth" there are no misfires, all else being in order, until the platinum points become "pitted."—Yours faithfully,

J. C. EDDISON.

[The voltage of the low-tension current is so small compared with that of the high-tension (4 volts to 30 or 40,000) that its effect is negligible. Not so, however, with the induced current on the make and break in the primary circuit, which (as there is not always sufficient condenser capacity in small coils) may assist in damaging the contact points. Try reversing the connections at the accumulator terminals. If this does not diminish the pitting, try larger platinum points, of well-known red pure platinum. It is quite possible, by the way, to arrange a wipe contact that does not necessitate "earth" through an oily bearing.]

THE TYRE QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 14th inst., in your correspondence columns I notice a communication signed "A Mechanical Engineer," declaring that his experience of pneumatic motor tyres has been such that no reliance can be placed on them, and he appears to favour solid tyres. He desiderates some appliance which will reduce puncturing to a minimum, to give assurance to travellers that, when they set out on a journey of some distance, they will get to their destination without mishap to tyres. He does not, it would seem, know of any appliance such as meets his complaint. Permit me to say that I have had an experience of motoring probably greater than that of your correspondent, and that, like him, I often desired that an effective appliance could be invented to overcome the inconveniences of punctures. Early this year I was advised to try a patent band, which is attached to the inner side of the outer cover. I obtained on trial the patent band known as "the Cassell non-puncturable band," and I have no hesitation in attesting, after having travelled for several thousands of miles, on all conditions and all sorts of roads, that this band absolutely meets the very requirements of "A Mechanical Engineer." Although the covers were cut to pieces I had not a single puncture, the bands and tubes are still in as good a state as at the beginning of the season.—Yours truly,

A MOTORIST.

THE PROPOSED FEDERATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The announcement made by you as to the severance of the Manchester A.C. from the A.C.G.B.I. emphasises the serious nature of the situation as regards the Club and its affiliated clubs. It is certain that something should be done at once, and it would be a good thing if the A.C.G.B.I. would meet the promoters of the proposed Federation and the affiliated clubs and talk the matter over, so as to endeavour to prevent the establishment of more than one organisation for automobilism. Perhaps mistakes may have been made and shortcomings have existed, but concerted action is needed, and now. I do not think, from my experience, that the amount payable to the Club is the stumbling-block. It is rather the fact that affiliated clubs simply pay and take no part in the work. Some such scope as outlined by you in last week's *Journal* is wanted, and then, taking part in the work, and possibly dealing with all purely local matters, and properly and proportionately represented on the executive and committees of the Motor Union, or whatever the body is to be named, I do not think there would be any desire to join anything but the A.C.G.B.I. The clubs realise the need of action, but affiliation with representation on a committee which never meets is not to the liking of the strong young clubs growing up all over the country (there are nearly forty now, without counting the motor-cycle clubs), and if they cannot work with the parent Club, will most assuredly have an organisation of their own, which will be far more powerful than the A.C.G.B.I., but, of course, far weaker than a united organisation having every club in the kingdom in its ranks. What is wanted is this opportunity of "talking the matter over," and it is to be hoped every club in the kingdom will be invited by the A.C.G.B.I. to a friendly conference to that end.—Yours truly,

G. WILKINSON.

SIDE-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to your South African correspondent, my impression is that he is a little too reckless on corners with his side car. He must bear in mind that it is a tricycle, not a bicycle, and moreover, that the bulk of its weight is on the extreme right of the vehicle. As an old racing tricyclist, I find that one must take it round corners much slower

than a bicycle or even a fore-car. The greatest care is necessary in turning to the left without a passenger in the car to keep the left wheel down. My plan is to throw all my weight on the left pedal, slipping partly off the saddle sideways so as to get my weight well over the basket; some riders drive sitting in the basket, but I regard this as inadvisable and even dangerous in frequented places. Once the hang of the machine is got the side-car is a very handy and sociable attachment and tends to convert one to the merits of the three-wheeler. I have done several long runs on it by myself and find it a great blessing to feel safe from side-slip on mud and also to have accommodation ready for a friend or luggage. The chief drawback is lack of engine power. One wants at least 5-h.p. and a two speed gear; a starting clutch is also very desirable, as restarting on an up-grade or in traffic is extremely tiresome and exhausting. The new patterns at the present shows seem to be likely to meet all these points. Yours truly,

BASIL CRUMP.

TIMING A TWO-CYLINDER MOTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Perhaps you can help me in timing a two-cylinder engine. At present it works as follows:

- (a.) 1. Inlet, compression, explosion, exhaust.
2. Exhaust, inlet, compression, explosion.

Should they not be timed:

- (b.) 1. Inlet, compression, explosion, exhaust.
2. Explosion, exhaust, inlet, compression?—Yours truly.

MOTOR STUDENT.

[In some of the earlier types of vertical two-cylinder engines it was usual to have the two cranks set one on each side of the shaft, at an angle of 180° to each other, the idea being to balance the moving parts, the cycle of operations in the two cylinders being in this case as shown at a by our correspondent. In modern engines, however, the usual practice is to have the two cranks on the same side of the shaft, the cycle in this instance being that given at b. The advantage of the latter arrangement is that an impulse on lower stroke is given to the crank shaft at each revolution, while with the cranks set at 180° the engine does not work so evenly, there being two impulses in one revolution and none in the next.]

THE ROUSSEL SPRING WHEEL.—In answer to F. Bassano and other enquirers, the address of the makers of the Roussel spring wheel described in the last issue of the *Journal* is De Cadignan and Company, 20, Rue Brunel, Paris.

WINTER USE OF MOTOR-CARS.—H. Trower, who enquires for the proportion of water to glycerine to prevent freezing, is referred to the article on "The Winter Use of Motor-Cars," in our issue of the 7th inst., and to the letter from "Chemist," in the last number.

6-H.P. DAIMLER CARS.—"Daimler" would like to hear from readers who have successfully converted, or added to the power of the standard 6-h.p. car.

MOTOR-CAR ACCIDENT.

AT the Kingston-on-Thames County Bench, on Monday, Mr. Rupert D'Oyly Carte, of 2G, The Albany, Piccadilly, London, surrendered to his bail to answer a charge of wantonly and furiously driving a motor-car on the Portsmouth road, at Long Ditton, on Sunday, November 15, and causing bodily harm to Theodora Franklin, aged three years. From the evidence it appeared that three motor-cars were passing along the Portsmouth road, some little distance apart, Mr. D'Oyly Carte riding in the third car, which, a witness stated, was going at the rate of twenty-three or twenty-four miles an hour. When the second car had passed a point about a hundred yards from Winter's Bridge, the child started running from the right side of the road to the left. Mr. D'Oyly Carte, proceeding from behind, turned his car to the left to avoid the child, who, however, came into contact with the vehicle, and was knocked down. The girl was picked up in an unconscious condition and taken into an adjoining house. After hearing the evidence the Bench dismissed the case.

A BRAKE TEST.

THE Birmingham and Coventry Cycle Company have sued Dr. Nankivell, in the Bournemouth County Court, for £77s., the cost of a brake supplied and fitted to the defendant's motor-car. After hearing the evidence His Honour said he had come to the conclusion that the design for the brake was such that it could not be efficient as applied to the defendant's car, and, therefore, there must be judgment for the defendant.

THE MOTOR-CAR ACT.

LINCOLNSHIRE.—The Spalding Rural District Council have adopted a resolution asking that the whole of the roads in the district should be scheduled against motor-car traffic over ten miles an hour.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED, M. P. H.	RESULT.
Coventry	S. Wright, Coventry	20	£2, etc.
West London	Marquis of Downshire	22½	£3, etc.
" "	R. Jones, Ascot	—	£3, etc.
Woking	*G. Kingsbury, Hampton	16	£2.
"	F. E. Willett, Cosham	20	£3.
Otley	A. Bastide, Brighouse	—	Dismissed.
Mullingar ...	T. Kent, Mullingar	—	£1, etc.

* Indicates Motor-Cycle Case.

CLUB NEWS.

SOUTH AFRICA.

THE annual general meeting of the Automobile Club of South Africa was held on the 2nd inst., Mr. A. T. Hennessy being in the chair. Mr. A. C. Fuller, the hon. secretary, read the report, which showed that considerable progress had been made during the second year of the club's existence. The committee expressed their appreciation of the co-operation they had received from the majority of motorists in the matter of driving with due care and consideration for other users of the road. It was thought, however, that it might be well to impress upon recent recruits the extreme importance of ever exercising the care and consideration in driving necessary to impress upon the public the fact that motorists as a body had a due sense of their responsibilities and appreciation of the rights of others. The report went on to state that the membership roll of the club now included nearly sixty names, the members owning among them over fifty cars. The Chairman in his speech said that most of the work of the club during the past year had been of an unostentatious nature, but in addition to matters dealt with in the report he would like to mention that the committee had endeavoured to compile a list of hotels throughout the country, and had advertised in the leading papers asking hotel proprietors and dealers who were prepared to accommodate motorists to advise the hon. secretary of the accommodation they had available with regard to storing cars and supplying lubricating oil, petrol, etc.; but to this request there had been absolutely no response. As a result of the club's inquiries and suggestions, a number of garages had been established in Cape Town, where motor requisites were supplied and repairs done at reasonable rates. In conclusion, the chairman emphasised strongly the importance of that portion of the report which urged upon individual motorists, especially new recruits, the necessity of cautious and considerate driving, more especially in crowded thoroughfares, and to remember that it was not merely safe driving which was required, but driving with due consideration to the feelings of those who were unaware of the ease and safety with which a motor could be manipulated. A number of proxies being then handed in to the secretary, the election of officers for the ensuing year was proceeded with, the hon. president being Sir Walter Hely-Hutchinson, G.C.M.G., in terms of the constitution of the club. The retiring vice-presidents, Mr. H. M. Arderne, Mr. W. E. Park, and Mr. A. T. Hennessy, were re-elected, Mr. Fuller being also re-elected hon. secretary.

POLICE TRAPS.

Two or three police traps have lately been reported on the main road between Ipswich and Colchester.

A TRAP one eighth of a mile in length has been laid by the police along the Bayswater Road, W.

THERE is a police trap between Preston and Lytham, on the Preston side of Lea Gate public-house.

DEFENDED ON PRINCIPLE.

EARL RUSSELL has successfully defended an action brought against him at the Maidenhead County Court by a local firm of engineers, who sued him for 14s. 6d. for repairs to motor-lamps, etc. His lordship's engineer and gardener said they had paid for the goods. Earl Russell said he defended the action because it was the habit of tradesmen to supply servants, and then three or four years later send in bills to their master or mistress. The action was dismissed.

CLAIM AFTER STORAGE.

At the Southampton County Court, the case of Patterson v. Giddings has been heard. The plaintiff, who resides at Kenilworth, claimed £10 for damages done to a motor-tricycle. It was stated that on September 10th the plaintiff left the machine at the defendant's shop at Lyndhurst Road, to be stored until sent for. At that time the tricycle was in good condition, but when it was returned it was badly damaged. The defendant did not appear. Judgment was given for plaintiff for £8.

COMMON SENSE IN SCOTLAND.

At the monthly meeting of the Western District Committee of the County Council of Stirlingshire the Clerk submitted the recommendations of the Parish Committees on the regulations for the speed of motor-cars on the district roads. Mr. David Wilson, who presided, thought they could hardly agree to the recommendation of the Campsie committee. Motor-car traffic had come to stay, he believed, and as the Crow road, which was recommended for prohibition, was the natural outlet from Fintry to the railway at Lennoxtown, it would seriously affect the letting value of the large houses thereabouts if motor-cars were prohibited. A carriage and pair took two hours to do the distance, while a motor-car could accomplish the journey in half-an-hour, so that they could see the serious effect this prohibition would have. It was pointed out by the Campsie representatives that this was the most dangerous road in the whole district, that it was unfenced, and in some parts very narrow. To fence it would entail an expenditure which the Committee would not be justified in incurring simply for the motor-car traffic. Going round by Killearn would add ten miles to the journey, but that was not much to a motor-car. The Chairman said he was convinced the Local Government Board would not permit them to prohibit the traffic entirely, and he moved that danger posts be erected on the road, and that the speed of cars be restricted to ten miles. This was adopted against an amendment for prohibition.

THE Grappler Pneumatic Motor Tyre Syndicate, Limited, has purchased from the liquidator of the New Grappler Tyre Company all the patents and patent rights in connection with the Grappler motor tyre. Mr. J. G. Bartlett will be the manager of the Syndicate, and arrangements have been made with the Hyde Rubber Works, Limited, of Woodley, near Stockport, for the supply of materials and the sale of the tyres.

A MEETING of the shareholders of A. Darracq and Company, Limited, has been held in London, Mr. J. S. Smith-Wenby presiding. The balance-sheet showed a net profit for the year of £100,275. The Chairman said it had been arranged to construct about 1,200 cars for the 1904 season, and that types, ranging from the 8-h.p. single-cylinder car to the 30-h.p. four cylinder car, would be put on the market.

MR. E. FAILES BAKER, who drove the winning Duryea in the Phoenix Park, Castletwellan and Southport trials, met with a startling experience on Saturday, which came very near to ending his career as a *chauffeur*. An attempted ascent of the Aero Club was being made in the Crystal Palace grounds, and Baker found himself amongst the spectators when the balloon became unmanageable in the strong wind then prevailing. He was among those who helped to restrain the balloon, which, however, gave a violent plunge, and in an instant Baker found himself high above the tree tops hanging on to a rope. Happily it was not long before the balloon was got down again, and once within measurable distance of mother earth he lost no time in getting there, and now says motor-car racing is quite exciting enough for him.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, DECEMBER 5, 1903.

[No. 248.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

IN the sad accident by which Mr. S. Loewe met his death at Hounslow the other day, the nervousness of a young woman crossing a road seems to have been a great contributory factor. The jury, in finding the death was accidental, and exonerating the driver from all blame, added a rider expressing an opinion that the power of lamps used on many cars was greatly in excess of what was necessary. In the evidence it was stated that the lady was confused by the bright lights carried by the automobile. There is no doubt that the

lighting of motor-cars is a subject which motorists will have to consider very seriously. Some firms are already providing masks or covers to lessen the illuminating power of the lamps on the approach of restive horses and the like, while others have decided to throw the lights directly upon the road surface rather than on the hedges and all round. In view of the early operation of the Motor Car Act, designers are also considering the lamps used at the rear of cars, and at the recent shows several good types were exhibited with a side glass fixed at a proper angle to illuminate the number which will now have to be carried at the rear. Altogether the subject of the lights carried on automobiles is sufficiently important to warrant discussion by some of the clubs which arrange regular debates on motor-car topics.

Recent Floods.

THE heavy rains of Saturday and Sunday had the effect of raising the waters of the Mole to an abnormal height, and where the river has overflowed its banks the low-lying grounds are flooded to the extent of many acres. The main road which connects Reigate with Dorking was covered to the depth of two feet or more, and a motorist who tried to pass through had an unpleasant experience. The machine came to a dead stop when half-way through, and the driver had to seek help on foot. A neighbouring farmer was prevailed upon to send a horse to haul the motor to the other side—an experience resembling somewhat that which occurred on the Great North Road just before the Reliability Trials of the present year.

Police Timing.

TWO cases have been brought to our notice during the past week in which the unsatisfactory nature of police evidence with regard to the timing of measured distances has been thoroughly exposed. At Otley, in Yorkshire, a Bradford gentleman who has had considerable experience in the timing of races, etc., was able to show the Bench that an inexperienced policeman in charge of a stop watch with which he was probably inadequately acquainted was altogether untrustworthy in dealing with the speed of automobiles; and at Barnet the cross-examination of a constable revealed such an unsatisfactory and crude knowledge of the principles of timing that the Bench had no alternative but to dismiss the case. We hope that defendants in motor-car cases will instruct their solicitors to give the

police a thorough cross-examination on these points, because the new Act is coming into operation in less than one month's time, and there will be absolute need of accuracy. Seeing the number of cases at present heard where the speed is only twenty or twenty-one miles per hour, it will be readily recognised that this is a matter which may mean all the difference between conviction and acquittal.

The "Pedrail."

A SUBJECT with which the name of Professor Hele-Shaw has lately been associated is the "Pedrail," upon which he read a paper at Liverpool on Saturday evening. The meeting was held under the auspices of the Liverpool Self-Propelled Association, whose president, the Earl of Derby, was in the chair. Only last week we referred to Mr. Diplock's "revolution in mechanical locomotion," of which a full description was given in our issue of January 3rd, so that the features of the "Pedrail" are familiar to our readers. After the lecture, in the course of which Professor Hele-Shaw spoke with enthusiasm of the invention, Lord Derby moved a hearty vote of thanks to the speaker and wished him "Godspeed" in his work in South Africa. Mr. Thornycroft Vernon seconded the motion, which was carried with enthusiasm. Messrs. Diplock and Vernon Hill were associated with a similar compliment to the Chairman, who, in reply, said it seemed to him that a great point in the use of the "Pedrail" would be that they would localise the expense of their transport. The importance of this kind of traffic would be felt in its effect in military operations.

The Conduct of Drivers.

OFTEN have we referred to the dissatisfaction among motorists with regard to the persons employed as drivers, and while there are many of the latter who work conscientiously and well, it must be confessed that too large a proportion appear indifferent to the interests of those by whom they are employed. A motor-car driver committed suicide at Mortlake recently, and the inquest brought out two or three unpleasant facts. On one occasion he took the car out without the authority of his employer and was summoned for exceeding the legal limit. His employer paid half the fine and warned him of dismissal should such an unwarranted liberty be taken again. But this was ignored, and again he took the car out without permission. This time he collided with an electric brougham and smashed the two front wheels of the car. Then came the suicide.

Firmness on the Part of Owners Essential.

FREQUENTLY have drivers met with mishaps when taking friends out in cars without permission. Many think nothing of taking out private cars worth hundreds of pounds for the gratification of friends, without any thought of wrong. But drivers will have to realise that such proceedings are quite unwarranted, and employers will have to be firm in dealing with cases in which their orders are wantonly disregarded. So general has the evil become that the registration of drivers will

have to be encouraged, and employers will have to give a preference to those men who are on the register of the A.C.G.B.I. Otherwise motorists are at the mercy of drivers whose conduct may be exemplary when in the presence of their employers, but altogether wanting when out of their sight.

**An Interesting
South African
Photograph.**

On this page we reproduce an interesting photograph sent us by one of our South African readers. The first car in the picture is the 14-h.p. New Orleans, belonging to Mr. A. T. Hennessy, Chairman and Vice-president of the South African Automobile Club. Mr. Hennessy is at the wheel, and the lady sitting on his left is Mrs. Joseph Chamberlain. The gentleman in the second car is Sir Walter Hely-Hutchinson, K.C.M.G., the Governor of Cape Colony, and President of the S.A.C. The photograph was taken just as the party was about to start on a trip round the mountain, *via* the Victoria Road, Hout's Bay Nek and Constantia Nek.



Mr. A. T. Hennessy, Chairman of the South African Automobile Club, on his 14-h.p. New Orleans Car.

**Helping Friendly
Councils.**

ALTHOUGH an automobilist is bound to take out his licence to drive in the county in which he resides, he can register his car in any county he pleases. A good many inquiries have in consequence been received asking advice as to the best counties in which to register cars. In order that information may be available for the guidance of automobilists, the secretary of the Motor Union has addressed a letter to the clerks of most of the administrative counties of England and Wales and we advise our readers to delay their application for the registration of cars for a week or so until replies have been received. According to the letter sent out by Mr. Rees Jeffreys it appears to be the desire of many motorists that their registration fees of 20s. per car shall be paid to those counties which are most anxious to adapt their roads and their administration to modern requirements. The Motor Union has therefore under consideration the desirability of compiling, for the guidance of automobilists generally, a list of those county councils which have shown a desire to encourage the development of mechanically-propelled vehicles, in order to secure to those counties a considerable proportion of the revenue to be derived from registration fees.

**10 or 20 Miles per
Hour.**

At the meeting of the Perthshire County Council some useful points have been elucidated with regard to the Motor Car Act, and, although the Scottish view may not be parallel with the English practice, it is as well that it should be known. Sir Alexander Mackenzie, the chairman of the Council, has been in correspondence with the Secretary for Scotland on the subject of the speed of cars, and during the meeting referred to received a telegram from that high authority, in which he said, "As a matter of law have no doubt that the only speeds which are allowable are ten and regular speed of twenty miles an hour. You may quote this.—A. G. M." Sir Alexander said he presumed this to mean that they must either allow the speed allowed by the Act to be up to twenty miles an hour or restrict it to ten miles an hour (not less) where in the words of the Act places are "especially dangerous." This should be interesting reading to those who have sought to reduce the speed to six or eight miles an hour.

**A Quartette of
Questions.**

THE points upon which information is desired by the Motor Union are: 1. Is the council disposed to encourage road improvements and road widenings as distinguished from ordinary maintenance operations? 2. Does the standing joint committee (half of which is elected by the council) authorise or permit the setting of "police traps" on straight or open stretches of country road? 3. Is it the intention of your council or its responsible committee to apply to the Local Government Board to sanction, under clauses 8 and 9 of the Motor Car Act, the closing of any considerable length of road to motor traffic, and upon others to impose a speed limit of ten miles an hour. 4. Is it contemplated to carry out in a liberal manner the duty imposed upon them of erecting signposts denoting precipitous places, cross-roads, or to incur the expense in the near future of rendering them safe? Thus the councils are being brought to face an interesting position. Will they do what they can to encourage automobilism and so secure the registration fees, or will they prove hostile and so allow to be diverted to other bodies the pounds that they would otherwise obtain?

Taxing Automobiles.

ALTHOUGH the local authorities of Lincolnshire have shown an uniform consideration for the rights of motorists on the roads, it must be confessed that the Holbeach Rural District Council is a conspicuous exception to the rule. From what we hear, this Council is mainly comprised of farmers, full of bucolic prejudice, and quite ignorant of the wider aspects of the question. They have passed a resolution to the effect that motor-cars should keep strictly to a speed of ten miles an hour on the roads under their jurisdiction. They also object to put up warning notice boards as required by the Act, and, encouraged by this attitude, the chairman of the council expressed the view (in which several other members concurred) that motor-cars ought to be taxed at £20 and motor-cycles at £10. If such a rule were, however, to prevail, we are afraid it might extend to chairmen of councils who considered such matters without any regard to public convenience or the general welfare. Should such take place, the chairman of the Holbeach Council might possibly be taxed out of existence altogether.

Enlightenment in the Island.

IN conspicuous contrast to the narrow view of these Holbeach wisacres is the attitude of the Isle of Wight County Council. This body is more widely representative of various classes of the community than the Lincolnshire authority, and, recognising the prosperity to a district that comes from the circulation of tourists and others upon well-kept roads, has decided to conform to the spirit of the Act, at the same time giving full consideration for the rights of motorists upon highways. The Council has, with practical unanimity, decided not to apply to the Local Government Board for a limit of ten miles an hour to be applied to the roads in the Isle of Wight. They rightly recognise that section 1 of the Act provides against reckless driving, and this is really all that need be considered, so far as public safety is concerned. Had the House of Commons recognised this and accepted the principle of the abolition of the speed limit, the Motor Car Act would have been welcomed rather than accepted as an inevitable evil by the great body of motorists.

Motor Election Corps.

IT is rather late in the century to write of the value of motor-cars in connection with electioneering work, but not until the other day has the subject been gravely considered by political associations with a view to the organisation of Motor Electioneering Corps to play a similar part in the political world to that of the Motor Volunteer Corps in connection with military manoeuvres. The eastern division of the National Union of Conservative Associations met at St. Ives, and Mr. Ablewhite, of Stamford, moved a resolution that arrangements be made for obtaining a supply of automobiles for use at election times throughout East Anglia. His object was, if possible, to arrange for an equal distribution of available motor-cars in the various county constituencies. Mr. George Montagu, M.P., seconded the motion, which was carried unanimously, after Sir Samuel Hoare, M.P., had enthusiastically supported it. We understand the idea is to tabulate a list of owners of cars in the district who will place them at the service of political candidates at election times, and thus obviate overlapping in some places and possible paucity in others.

The Edison Accumulator.

AT a meeting of the Institution of Electrical Engineers on Thursday last week, Mr. W. Hibbert, chief of the Physics and Electrical Engineering Department of the Regent Street Polytechnic, read a paper on the "Edison Accumulator." The cell contains twenty-eight plates, fourteen positive and fourteen negative, which are placed alternately, and carefully insulated. The foundation is a thin sheet of nickel-

plated steel, in which twenty-four rectangular pockets or pouches have been made by a stamp. Into these pockets is placed the compressed active material, and fixed in position by a powerful press. The pockets on the positive plates contain nickel peroxide, and those on the negative plate finely divided iron. The twenty-eight plates, after being placed together and insulated, are put in a steel box, which is closed by a cover and soldered down. The cell is then filled with a twenty per cent. solution of caustic potash, which reaches the active material through fine holes in the walls of the pockets. For working on the road, a car fitted with a battery of thirty-eight cells was put at Mr. Hibbert's disposal. With these he ran 500 miles, and has watched the cells during further travel, in which the total distance covered was about 2,500 miles. The cells worked well, and the only attention actually needed during the long run was the occasional addition of distilled water. The paper was of a most exhaustive and highly technical character, based on the author's own experiments, which have led him to the opinion that the Edison accumulator is a decided step in advance.



Photo by) Mr. T. Thornycroft Vernon on his 18-h.p. Mercedes. (Mr. V. A. Stemon.

Dust.

LAST week's meeting of the Automobile Club was to discuss a matter which is a source of annoyance to passengers by motor-car and to pedestrians within their range. The problem has not been solved, although theories have been propounded, and we are inclined to agree with some of the speakers, that flour, which was the medium used in connection with the experiments, was not the most suitable way of testing the subject. Anyhow, it was done, and the authorities who investigated the dust problem gave their views in a paper which we summarise on another page. Their conclusions are somewhat halting on all points save in the view that it is desirable that cars should slope upwards towards the back.

The Discussion.

IN the discussion which followed, Mr. John Brown, of Belfast, believed that the unevenness of the lower part of the body of the car was responsible for more dust than were the wheels. Mr. Mervyn O'Gorman pointed out that disc wheels might be less likely to aggravate the dust nuisance than those built on present lines, a view supported by the Hon. J. Scott Montagu, who also drew attention to the position of

the exhaust, a point which Mr. Cozens-Hardy and Mr. Roger Wallace subsequently also emphasized. Mr. Shrapnell Smith would have preferred slaked lime to have been used in the experiments instead of flour, and the discussion was concluded by Mr. R. J. Mecredy, who extolled the merits of Westrumite in connection with the laying of dust.

An Association for Motor Van and Wagon Users.

As recently announced, it has been decided to form an Association for Motor Van and Wagon Users as a section of the Motor Union, and a circular letter has been addressed by the A.C.G.B.I. to all known users of such wagons in the United Kingdom. The Local Government Board has agreed to appoint a Departmental Committee to consider the existing conditions of usage and to frame new regulations respecting tare weight, diameter of wheels, width of tyres, etc. It is of the utmost importance, therefore, that the opinions and requirements of users should be placed authoritatively before this Committee. Accordingly, as the matter presses, the Automobile Club have appointed an expert Committee, to nominate witnesses, and to collect and prepare evidence to lay before the Departmental Committee. The proposals of this sub-committee will be available for the members of the Motor Van and Wagon Users' Association at their first meeting. A general meeting of members will be held at an early date, and in addition to looking after the interests of motor van and wagon users at the forthcoming inquiry, a vast field of utility is before the Association in protecting its members against the restrictions which local authorities propose to impose upon them, collecting and distributing information with regard to the use of heavy vehicles, securing for them legal protection, and placing at their disposal expert advice.

The Car as a Last Resource.

REALLY we should have thought that politicians like the Hon. G. J. Goschen, M.P., would never trust themselves to the uncertain tendencies of horse-drawn vehicles. But he, greatly daring, seems to have done so, to his regret. Anxious, a few evenings ago, to attend a meeting at East Grinstead, and finding no convenient train from Hawkhurst thither, he had to drive fourteen miles to Tunbridge Wells, starting at three o'clock and allowing two hours for the journey. But the horse broke down en route, and, as he passed through no villages, he could not get any other. Then Mr. Goschen missed the last train to East Grinstead, and tried to get a motor car in Tonbridge, without success. It would appear that the safer plan would have been to have started out with a motor-car and not to have suggested its use when the horse-drawn vehicle failed.

Side Slip Trials.

INVENTORS and motorists alike will regard with interest the side-slip trials now under course of organisation by the A.C.G.B.I. A committee has been appointed to examine the merits of the various ideas which will be submitted, and those that appear really practical will be subjected to a preliminary test over a greasy and tortuous route. Those that survive this ordeal will then be subjected to a further run of at least 500 miles, so that the trial is likely to be a thoroughly practical test of the capabilities of the devices entered for competition. A total sum of £200 will be offered as prizes, and the last day of entry will be February 29th next, on which date drawings and particulars of the competing devices must also be submitted.

Federation or Affiliation.

CONVENED by the Reading Automobile Club, who are to be congratulated on taking the initiative in a matter of national importance to the automobile movement, a representative conference of delegates from many of the provincial automobile clubs was held at the Inns of Court Hotel, London, on Wednesday. Mr. J. Hopkins Walton.

the president of the Reading organisation, having been voted to the chair, made a brief statement, in which he urged that the proposed federation, while working in harmony with the central body, would give the provincial clubs a voice that was now impossible in the councils of the A.C.G.B.I. Mr. Dobbs, of Reading, proposed a resolution in favour of a federation of all the automobile clubs in the country. This having been seconded, a general discussion took place, in which representatives of the Cheltenham, Eastern Counties, Midland, Oxford, Southport, Southern Motor, Motor Cycling, Manchester Motor Cycling and Birmingham Motor Cycling Clubs took part. After a somewhat protracted conversation the representative of the Eastern Counties Club moved as an amendment that "owing to the necessity of working in line it is the opinion of this meeting that the question of federation should be deferred until the meeting in February, and that motor-cycle clubs must be represented."

What the Clubs Want.

SUCH a conclusion was come to in view of the promise of the A.C.G.B.I. to hold a conference of clubs early next year—a decision arrived at since the issue of the Reading circular, and which undoubtedly affected the voting on Wednesday. This took place by clubs, and by seven votes to six the resolution in favour of immediate federation was lost, the amendment securing general assent. Subsequently the representatives of the various clubs met to consider the points upon which they desire concessions from the A.C.G.B.I. in the matter of affiliation. It was evident that the feeling of many of the clubs has been aroused and that the central organisation will have to give heed to their views if it desires to prevent the formation of another association on a national basis. The questions at issue involve not merely finance—that is a secondary matter—but the local rights of the clubs and their representation on the committee of the central body. This latter point is one upon which they feel strongly and which they will not willingly forego.

THE authorities of the Liege International Exhibition are offering £4,000 as a prize in an airship competition.

THE municipal authorities of Schöneberg, Germany, have decided to equip their fire brigade with steam motor fire engines.

THE Swiss Budget for 1904 includes a sum of £400 to enable the Postal authorities to make experiments with motor vans for the collection of mails.

IT is stated that about fifty physicians in Newark, N.J., U.S.A., have sold their horses and carriages and are using motor-cars exclusively in visiting their patients.

THE Fiat Motors, Limited, has been registered with a capital of £15,000 to adopt agreements (1) between the F. I. A. T. Motor Agency, Limited, and Mr. E. M. Davey, and (2) between Messrs. C. E. Foster, V. H. Miller, and D'Arcy R. Baker of the one part, and Mr. E. M. Davey of the other part, and to carry on the business of motor-car manufacturers and dealers.

FROM the Leipzig publishing firm of Grethlein and Co. comes a copy of a new book entitled "Der Automobil Sport." It is from the pen of Herr Max R. Zechlin, and, after a section devoted to the history of the automobile, deals in detail with modern motor-cars. The action of the four-cycle motor is described and illustrated, while chapters are devoted to carburetors, ignition, engine cooling, etc. Altogether the book is one which should prove useful to German motorists.

ANOTHER addition has just been made to the list of firms supplying petroleum spirit for use on motor-cars, Messrs. Whitaker and Co., of St. Mary's Works, Lower Broughton, Manchester, having sent us a two-gallon drum of one quality of the spirit they are now in a position to supply. Altogether three qualities are being made, viz., '680 deg., '700 deg., and '710 deg., the price varying accordingly to the extent of 1d. per gallon between each. Messrs. Whitaker inform us that their '680 deg. spirit is already being largely used by motorists. It is supplied in square screw-top two-gallon tins, packed four in a box.

AN AUTOMOBILE TOUR ON THE CONTINENT.

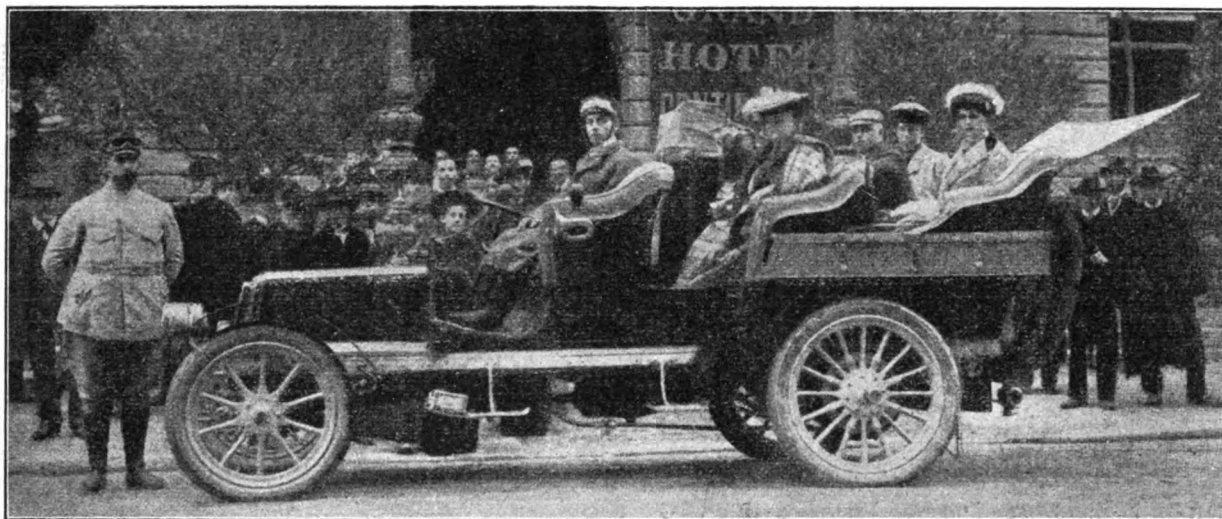
—*—
BY S. WOODWORTH.

WE started on our 3,400-mile tour from the Grand Hotel of the most beautiful city in the world at 2 p.m., May 24th, 1903. Our mechanic, from a Paris workshop, could speak French, English, Italian and Russian. Often we covered from 140 to 190 kilometres in a day, with stops varying from twelve hours to five days, depending upon mood and interest in the objects to be seen. There were five in our party, three ladies, the writer, and the mechanic. A general course was marked out, but this was to be varied, according to circumstances, as we went along. The tour extended over 71 days, with 50 days of driving, and about 3,400 miles were covered. There were steep grades to climb, mud and water to wade through, and suspicious Customs officers with whom to contend.

The tour could not have been made with any ordinary car. Mine weighed nearly two tons, and would carry seven persons comfortably. It is the heaviest and largest touring car yet turned out by the Panhard-Levassor Company, of 60 horsepower, and has a 10-foot wheel base. The two petrol tanks hold 42 gallons. The driving sprockets used were of small diameter, the smaller pair having only 16 teeth and the larger

to Mommingen; to Tuttlingen; through the Black Forest to Strasburg, stopping for dinner at Triberg; to Heidelberg, crossing the Rhine and stopping for dinner at Karlsruhe; to Frankfurt; along the Rhine to Bingen; to Prince Henry's castle at Rheinstein; along the Rhine to Cologne; to Aix-la-Chapelle; to Brussels; to Ostend, crossing Flanders and stopping at Ghent for dinner; to France and Amiens by way of Lille; to Versailles; and finally to Paris.

The finest roads are in France, and are of three classes—the *routes nationale*, the *routes ordinaire*, and the *petits chemins* or cross roads. It was a constant pleasure to glide over the French roads, generally smooth and clean, without stone or stick to jar even a springless conveyance. The new Corniche road is the best of all the roads we went over, and a masterpiece of engineering; but from Nice to Monte Carlo it was hard running because the surface was broken by a constructing tramway. There was a good road along the Mediterranean from Monte Carlo to Genoa. The Italian roads were mostly rutted and rough, with many loose, sharp stones, which cut the tyres; but seven miles from Milan toward Verona we found them much better, and there was a fine, wide, level highway between Mestre and Udina. From Genoa to Milan the roads were atrocious. The Austrian roads are generally good, but roughened in places by the absurd practice of dumping crushed stones and leaving them to be rolled



On Tour through Europe.

[Motor, New York.

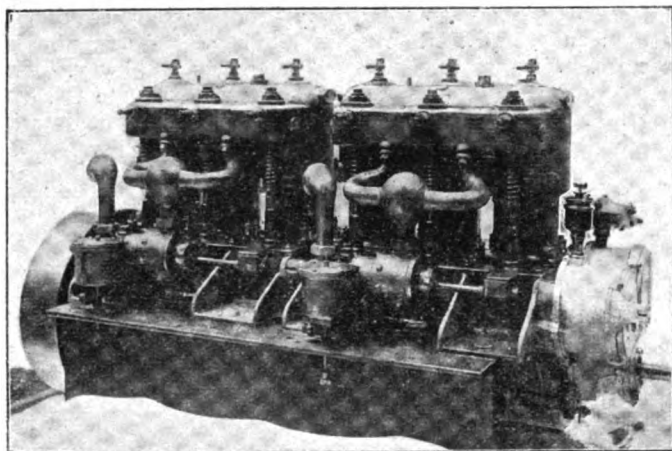
35 teeth. This did not allow very high speed, but gave great climbing power, enabling us to go up steep grades at the rate of 25 kilometres an hour. During the entire trip the motor did not have to be adjusted or touched except to regrind the valves once at Budapest.

A resumé of what we accomplished, omitting details of dates, times and distances, is given herewith:—From Paris to Fontainebleau; to Cosne, to Rouen; to Avignon, with brief stop at Orange; to Monte Carlo via Aix, Frejus and Cannes, and across the Alpes Maritimes; along the Mediterranean to Genoa, crossing the frontier into Italy at Ventremille; to the overflowed river Po, and then 175 kilometres out of course to Piacenza to find a bridge; to Milan; to Verona; passing Lake Laguna; to Mestre, where the automobile was left and train taken to Venice; back to Mestre by train, and thence by automobile to Udina; to the Austrian frontier and Austrian Alps, and up the mountains to the hamlet of Ternova; to Raibl, to Villach; to Judenberg, crossing over the famous Semmering Pass; through Gloggnitz to Bruck on the Mur River; to the valley of the Danube and Vienna; on the south side of the Danube to Budapest; back to Vienna on the north side of the Danube; along the mountains to Salzburg; to a hotel on Lake Zell, through Saalfelden to Innsbruck; over the Zirl Pass to avoid the railroad, passing from Austria into Germany at Mittenwald, and through forests to a small hotel on a miniature lake; to Munich;

down by the wagons of traffic—a cheap but prolonged smoothing process which is provocative of swear words to those who drive over them. Germany has a variety of roads, some of which are equal to those of France, and others almost as poor as those of Italy. The roads of Baden are better than those of Bavaria, which are execrable. Between Tuttlingen and Triberg, in the Black Forest we descended a long hill so steep that there was a drop of 600 metres in 12 kilometres. From Strasburg to Heidelberg, Frankfurt, and Bingen, the roads were very good, and the best of all the German roads we tested was that along the Rhine from Bingen to Cologne. The Belgian macadam roads are excellent, but the block pavements of that small nationality are almost universal, and generally worn rough with many loose or obtruding stones. It was a relief to strike the smooth French macadam again after leaving Lille. We returned to Paris without any one of the party having experienced accident or sickness in the ride of 3,400 miles. Nor had a tyre been punctured, but we had worn out seven rear outer covers. The speed laws throughout the Continent are so liberal that one may drive his car as rapidly as he pleases, provided he has due regard to passing traffic and conveyances and people. The Customs officials are sometimes slow in unwinding their legal red tape, but polite and obliging, and although an occasional money deposit is required when first passing frontiers, it is returned wherever the country is left, minus a small and reasonable commission.

THE DURKOPP SIX-CYLINDER ENGINE.

WE are able to illustrate the six-cylinder petrol engine exhibited by the Motor-Car Emporium, Limited, last week, and which is normally rated at 40-h.p. It consists of two three-cylinder motors built up on a large crank case and with a six-throw crank shaft, the three cranks of each half of the engine being set at an angle of 120 degrees to one another. Each pair of three cylinders is made in one casting, with an air space between each cylinder. The inlet and exhaust valves are arranged on opposite sides of the engine. All are mechanically actuated and interchangeable. Two carburettors



are employed, each furnishing the gas for three cylinders, a feature being the employment of a gas-collecting and distributing chamber in the inlet pipes. The governor, which is entirely enclosed, is connected up to a throttle valve in connection with each of the carburettors. The speed of the engine can be further controlled by means of a variable cam actuating the inlet valves, by means of which not only can the lift of the valves be varied, but also the time of lifting. The plugs can be fitted either in the top or at the side of the combustion chamber. The engine is well balanced and is stated to be extremely flexible and quiet in its operation.

OPPOSITION to the motor-omnibuses at Eastbourne has now subsided, consequent upon the improved running of the vehicles.

THE Cambrian Railways Company are reported to have placed an order for a number of motor-carriages to be run on their line next summer.

AN institution of Motor Engineers is being suggested, one aspect of whose work will be educational and practical, including the carrying out of tests of vehicles and experimental work in connection with automobiles.

THE Four Wheel Drive Wagon Company is the name of a new company which has just been formed in Milwaukee, U.S.A., with a capital of £200,000. The principle upon which the vehicle is to be made depends upon the distribution of the power to each road wheel separately, in addition to which all four wheels will act as steerers.

A GOOD catalogue of their special lines for motorists has been issued by the Motor Castings Company, Limited, of 101, Gray's Inn Road, W.C. This gives particulars of the firm's motor-bicycles, accumulators, motor lamps, horns, etc., as well as of motor castings of every kind.

THE Kent Motor Car Company has been formed to take over the businesses of Mr. L. Cosh, of Gravesend, and Mr. George Senior, of Rochester, the first directors being Messrs. R. L. Cosh, H. L. Cosh, and G. Senior. The premises of the new company will be 144, High Street, Rochester, and the Clarendon Royal Hotel Cottage, the Terrace, Gravesend.

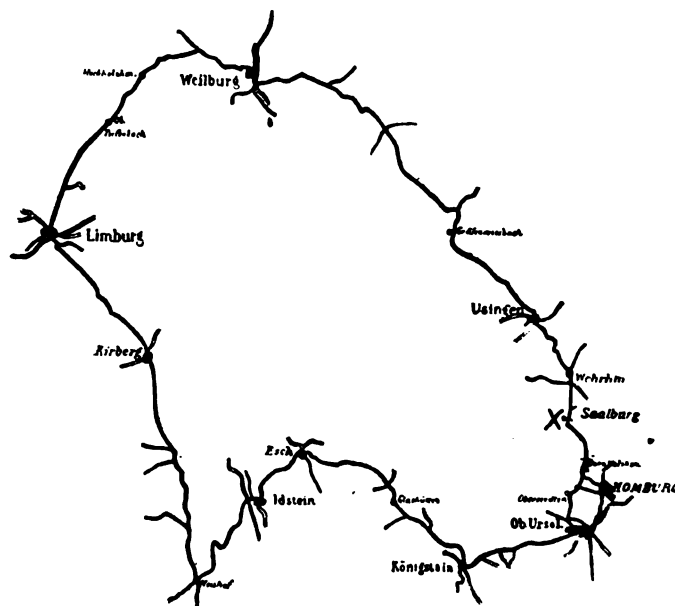
CONTINENTAL NOTES.

THE all-important matter, the route for the 1904 Gordon Bennett race, was settled at a meeting of the German Club in Berlin on Saturday last, that in the Homburg district being definitely chosen. An outline of the route is given herewith. The circuit is 137.6 kilometres long and will therefore have to be covered at least four times, the start and finish being at Saalburg. The most important places passed through and the distance is shown below:—

Town.	Distance in Kilometres from starting-point.
Saalburg	—
Wehrheim	3.9
Usingen	8.3
Grafenwiesbach	17.1
Weilburg	38.2
Heckholzhausen	47.6
Obertiefenbach	51.7
Limburg	59.7
Kirberg	71.3
Neuhof	88.3
Idstein	97.1
Esch	103.2
Glashütten	111.7
Königstein	118.8
Obernursel	128.1
Ober-Stodten	131.5
Dornholzhausen	133.5
Saalburg	137.6

Georges Prade, of "L'Auto," who, with Fournier, went over the route last week, describes it as "splendid, wide, and with a granite surface on which speeds of 100 kilometres per hour can be attained without danger."

WHILE a definite date for the race has not been fixed, it will take place some time in June, and it is probable that a series of kilometre and mile races as well as a hill-climbing contest will be held during "the automobile week," at Homburg. The Ger-



Map of Course of 1904 Gordon Bennett Race.

man firms which have so far entered cars for the eliminating trials are Messrs. Benz and Company, the Durkopp Company, the Neue Automobil Gesellschaft of Berlin, the Protos Company of Berlin, and Messrs. De Dietrich of Niederbronn.

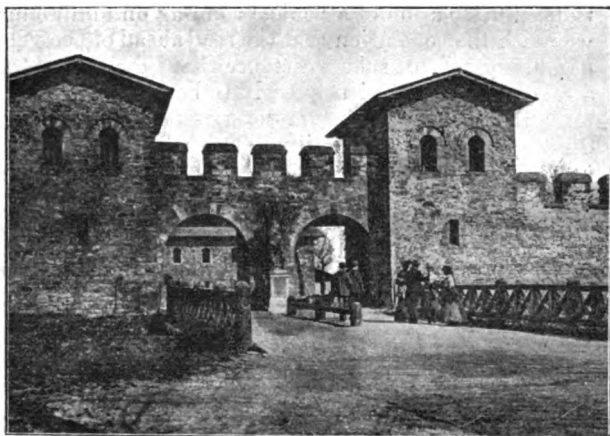
DURING the past week the A.C.G.B.I. has enquired of the Belgian Club whether it would be possible to obtain the use of the road forming the Circuit des Ardennes for the British eliminating race. The A.C.B. replied that while it was favourable to the project they do not yet know whether they can obtain the necessary authorization from the Government.

QUITE the feature of the past week in Paris has been the visit of the large party of British members of Parliament, who reached the French capital on Wednesday, the 25th ult., finding a large number of motor-cars awaiting to convey them to their headquarters at the Hotel Continental. What with receptions and banquets the visitors had an enjoyable time and have had many opportunities of noting the rapid strides the automobile movement has made in France. On Thursday, the 26th ult., driving parties were arranged during the intervals of private or official receptions, accompanied in many instances by French deputies, making use of the large number of motor-cars which had been provided for the visitors. The French Automobile Club had arranged to supply the vehicles, and the drivers of the latter wore red, white, and blue badges, with the inscription "British Parliamentary visit, Automobile Club of France." On Saturday evening a reception was given to the party by the A.C.F. The latter paid a graceful compliment to the English visitors by deferring until this occasion the opening of a new suite of rooms which has been added to the existing premises. Four salons have been fitted up opening one out of the other and looking on to the Place de la Concorde, and these were as new to the club members as to the guests. The British M.P.'s turned up in full force at the club, where they were received by the President, Baron de Zuylen. An excellent pro-

petroleum to be employed in the tests will have a specific gravity of .800 to .810 at 15°C.

STILL another competition which is being organised in connection with the *Salon* is that relating to the automatic starting of the engines of motor-cars. Only those motors will be eligible for the competition which can be started by means of an electrical or mechanical arrangement which will release sufficient energy to put the engine into operation, such energy having been stored up when the motor was previously working. The points which the jury will consider in making their awards are (1) certainty of operation, (2) weight per horsepower of the starting device, (3) dimensions, and (4) cost.

"LA GAZETTA DELLO SPORT," of Milan, has decided to organise a touring competition for motor-cycles weighing under 50 kilog. It is to be held in January next, the route being Milan, Pavia, Fortona, Busalla, Genoa, Savona, San Remo, Ventimille, Monaco, Nice, the return being *via* the Col de Tende, Coni, Alba and Asti. The total distance is about 700 kilometres; the course includes the ascent of the Col de Tende, the altitude of which is over 4,000 feet. Should this be covered in snow at the time, which is not improbable, a somewhat longer return



Entrance to the Castle at Saalburg.



The Main Street of Konigstein.

THE 1904 GORDON BENNETT RACE.

gramme of music, recitations, and dancing was carried out on the stage of the small theatre in one of the rooms.

THE Grand Palais in the Champs Elysee, Paris, is rapidly being prepared for the forthcoming *Salon*, workmen being now daily employed from 7 a.m. until 11 p.m. in preparing the stands. Ere the next issue appears the great annual exhibition will have opened its doors not only to the French Automobile world, but to thousands of visitors from Great Britain, Germany, Italy, Austria, Belgium, Holland, and the United States. It may be of interest to mention that for the third year in succession the *Motor-Car Journal* will have its stand at the *Salon*, at which a hearty welcome will be given to all English visitors.

A TRIAL of carburettors adapted for using ordinary petroleum as fuel is to be held in the Grand Palais during the course of the forthcoming exhibition. Below are some of the conditions of this competition:—The tests will be made by the jury with motors placed at its disposal by the Executive Committee. The jury will award prizes, consisting of medals and diplomas, for the most meritorious devices entered. In addition, a cash prize of £40 will be awarded for the best carburettor, provided it operates equally well with ordinary petroleum, petrol, and carburetted alcohol, without necessitating any changes. The

route will be followed. During the competition a series of brake and stopping trials will be held.

ACCORDING to "La France Automobile" a French firm is building a 6-cylinder motor of 65-h.p., reported to be intended for a new motor-car for King Edward.

ONLY two entries have been received for the competition for alcohol motor tractors organised by the German Ministers of War and Agriculture. Both vehicles are of 40 h.p., one having been built by the Neue Automobil Gesellschaft and the other by the Siemens-Schuckert Co., both of Berlin. They are at present being subjected to a series of tests.

It is reported that during the coming winter the Allgemeine Elektrizitäts Gesellschaft will carry out some trials with a snow automobile or motor sleigh on the trolley omnibus line between Dresden and Klotzsche, on which electricity-propelled vehicles are run for passenger transport. The motor sleigh is very similar to the electric bus, with the difference that the hind pair of wheels is replaced by a pair of sleigh runners, while the driving wheels in front are fitted with tyres specially designed for taking hold of slippery surfaces.

THE "CORONET" PETROL ENGINES.

THE Coronet Motor Company, Limited, Coventry, have now been manufacturing petrol motors for the past four years, and the engines illustrated herewith are the outcome of experience covering this period. Fig. 1 shows the $3\frac{1}{2}$ -h.p.

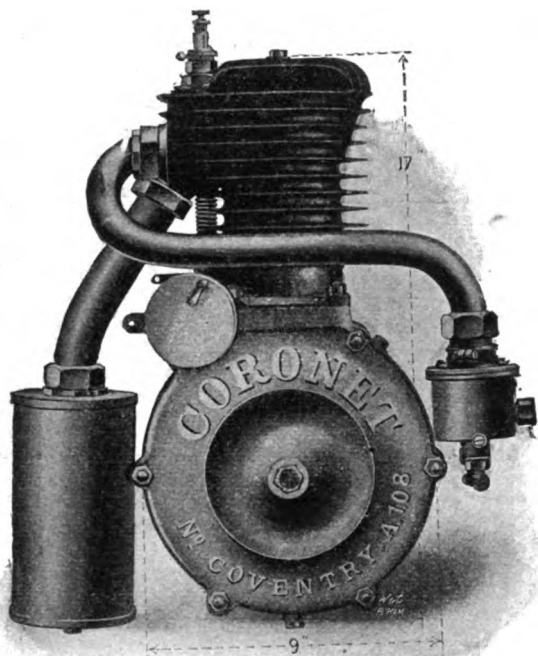


FIG. 1.

air-cooled motor, which has a bore and stroke of 3 7-16 in. The flywheels are hard steel stampings, the shafts being stamped solid therewith, which enables the makers to produce a motor exceptionally narrow, the extreme width over all, with the

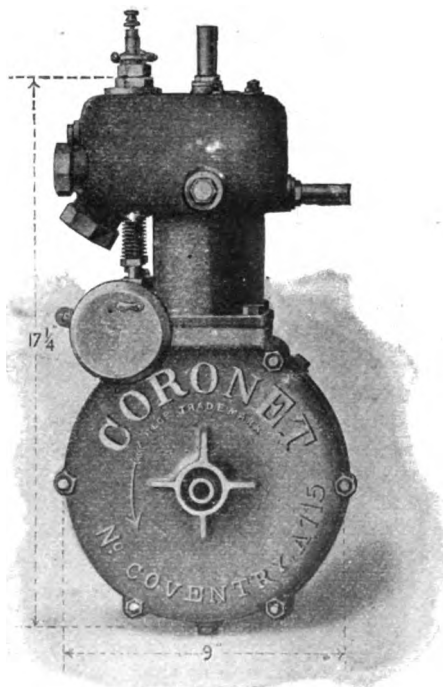


FIG. 2.

pulley attached, being only $7\frac{1}{2}$ in. The inlet valves are mechanically operated, the cams being solid with the half-time shaft. The valves are of large diameter; an exhaust valve lifter

and wipe contact breaker are fitted. The latter is carried on the cam shaft at the opposite end to the half-time wheels. The cylinder and cylinder head are in one casting. Three standard types of pulley for cycle work are being made. At present a Longuemare type of carburettor is being employed, but the Coronet Company are experimenting with one of their own make, which will shortly be placed on the market. Fig. 2 shows the $3\frac{1}{2}$ -h.p. water-cooled engine, which is in every respect similar to the air-cooled motor, except as regards the cylinder. As will be seen, the water jacket extends round the valve chambers as well as the cylinder. The weight of the water-cooled engine, as illustrated, is $58\frac{1}{2}$ lbs.

ACETYLENE LAMPS.

AT the annual meeting of the German Acetylene Association, recently held at Eisenach, Herr Ernst Neuberg read a paper on the subject of "Acetylene Lamps for Automobiles," with the object of interesting the association in a prize competition to be organised jointly by the German Automobile Club, the Mid-European Motor Wagon Association and the German Acetylene Association. The speaker dwelt in the first place upon the probable future of the automobile movement, and upon the importance of proper illumination.

If we inquire into the theoretical requirements with regard to the illumination of a vehicle running on unilluminated roads, we reach the conclusion that the road ahead of the vehicle should be illuminated for such a distance that the driver may recognise a road obstacle sufficiently early to be able to avoid it. As the braking power of most motor-cars is almost phenomenal, the distance which should be illuminated depends to a large extent upon the quickness of decision of the driver. It is not possible to specify a definite standard for the size of burner as a function of the vehicle speed, as the efficiency varies according to the construction of the reflector, and it also depends upon whether the car is equipped with one searchlight and two side lamps, only two lamps, or only a searchlight.

Another factor which necessitates the carrying of lamps at the front of a motor-car is the fact that pedestrians, animals and vehicles on the road should be able to recognise the car from a distance, and to clear the road in time to avoid being run over or coming into collision. Acetylene illumination has the advantage over all other systems that with it the luminous intensity per unit of flame surface is the greatest, and that the light is comparatively inexpensive.

The following are, in Herr Neuberg's opinion, the essential requirements made of the illuminating apparatus of a motor-car: (1) The lamp must be of tasteful form; (2) the material used in the construction of the generator must not be attacked by the acetylene gas; (3) in the construction of the reflector no material (German silver, for instance) must be used which suffers under the heat of the acetylene flame; (4) the lacquer with which the lamp may be coated must not suffer from the heat of the flame; (5) the attachment and locking mechanisms must be so constructed and attached that it is impossible for them to be lost or open during the run; (6) the generator must be provided with a safety valve; (7) precautions must be taken that neither the gas passage, the water feed channel, nor the burner can get choked; (8) the generator must be easy to fill and to clean—the parts to be cleaned must have smooth walls; (9) the lamps must not extinguish in even the strongest wind, independent of direction of same; (10) the cost price must be low; (11) the illuminating economy must be good; (12) in the case of interruptions in the gas consumption with full feed to the generator the economy must not be appreciably reduced, and the burner must resume operation immediately; (13) in the design of the lamps and the lamp brackets account must be taken of the vibrations produced by the motor and by running on uneven roads. The speaker then demonstrated with a number of acetylene lamps and searchlights to what degree these different requirements are met in modern lamps.

HERE AND THERE.

THE annual dinner of the Burnley Automobile Club will take place at the Bull Hotel, Burnley, on Tuesday next.

THE Glasgow Motor Lorry Company has been formed with a capital of £1,500. The registered office is at 169, Finnieston Street, Glasgow.

DR. RUTHERFOORD HARRIS, who, as we announced last week, has become the owner of *Le Passe Partout*, has just been adopted as a candidate at the Dulwich bye-election.

THREE Hotchkiss cars will take part in the eliminating contest for the French Gordon Bennett team; they will be driven by Henri Fournier, W. K. Vanderbilt, jun., and Achille Fournier respectively.

THE first diary for 1904 to reach us is from the office of our contemporary, the "Cycle Trader." This, in addition to the usual features of a diary, comprises a variety of references of use and interest to the cycle and motor trades.

IN addition to the standard *chassis* suitable for tonneau and similar carriage bodies, Messrs. De Dion Bouton are now able to supply the 8, 10, and 12-h.p. cars with longer frames, on which comfortable double phaeton, victoria and such bodies can be built

A MOTOR omnibus service will be inaugurated next summer on the east coast of Ross-shire, with the town of Tain as headquarters.

PERMISSION has been given to the omnibus company at Brighton to run a motor omnibus from Old Steyne to Portslade, by way of North Street and Western Road.

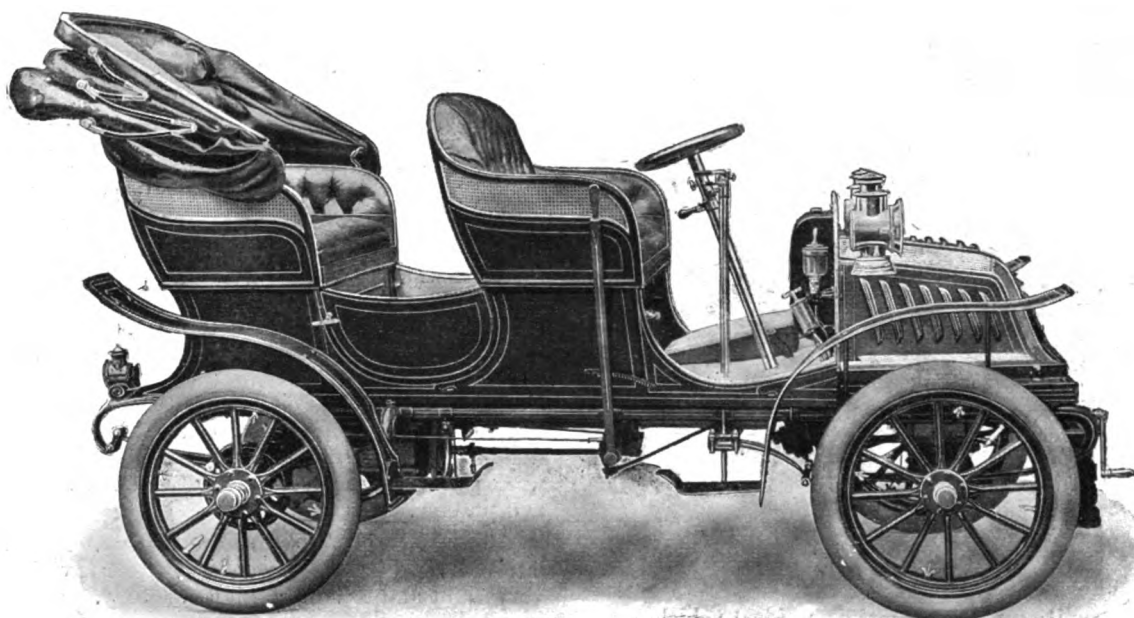
WE hope to describe the new O. H. B. car which made its first appearance at the Stanley Show, and also the Stevens-Duryea which was exhibited at the National Show, in an early issue.

ONE of the employees of the Stirling Motor Company, Mr. Smith, son of a Tamworth gentleman, has left for New Zealand in connection with a new motor-car venture in that colony.

A MOTORIST has been fined 40s. at the South West London Court for being drunk and for having a loaded revolver in his possession while vainly endeavouring to mount his motor-bicycle

MESSRS. J. R. HAMILTON AND CO., LIMITED, has been registered with a capital of £2,000 to carry on the business of manufacturers and repairers of, dealers in, and agents for the purchase and sale of motor-cars, motor-vans and vehicles, etc. The first directors are Messrs. J. R. Hamilton and A. C. Pritchard.

JOSEPH WILKINSON, driver of a motor-waggon, of White-chapel, has, at the Lambeth police-court, been acquitted of the



The De Dion Double Phaeton, with side entrance.

with entrance direct to the back seats from either side. The accompanying illustration shows an 8-h.p. double phaeton of this type. We may add that the building of side-entrance cars is not a new departure for the De Dion Company, as they remind us that nearly twelve months since a *chassis* of this model was built with a brougham carriage body, for the King of the Belgians.

FROM Messrs. S. F. Edge, Limited, we have received two photographs of a 24-h.p. Napier car they have recently supplied to the Duke of Bedford. It is fitted with a landaulette body with side entrances, with accommodation for three passengers in the rear portion, and room for an extra one by the side of the driver. The engine is a 4-cylinder one. The petrol capacity is sufficient for a 200 mile run.

AT the annual meeting of the Automobile Club of America, just held in New York, Mr. Winthrop E. Scarritt was elected president in succession to Mr. A. R. Shattuck, who has been president of the club for three years. The report of the membership committee showed that the club now has 464 members, of whom 395 own one or more automobiles. The total number of cars owned by the club members is estimated at 500.

charge of having caused bodily harm to George Tyler. The prosecutor was knocked down and run over by the waggon in Brixton Road, as he was wheeling a hand truck.

HUBBARD'S MOTOR AND ENGINEERING COMPANY, LIMITED, has been registered with a capital of £1,000 in £1 shares, to acquire the business of manufacturers of and dealers in motor engines, carburettors, etc., carried on at Much Park-street, Coventry, by Mr. C. Hubbard, as Hubbard Brothers.

A DIRECTORY and Map of Automobile Charging Stations has been published by the "Electrical Times," which contains particulars of upwards of 700 places in the United Kingdom where the batteries of electrically-propelled automobiles and the ignition accumulators of petrol motor-cars may be re-charged. The information given includes such details as the hours of business, the current available, price charged, and whether repairs can be carried out and garage given. The map shows clearly all the main roads, while all the places mentioned in the directory are marked in various ways according to the nature of the facilities offered. The work is of convenient pocket size and is bound in leather with rounded corners, the map being mounted on linen.

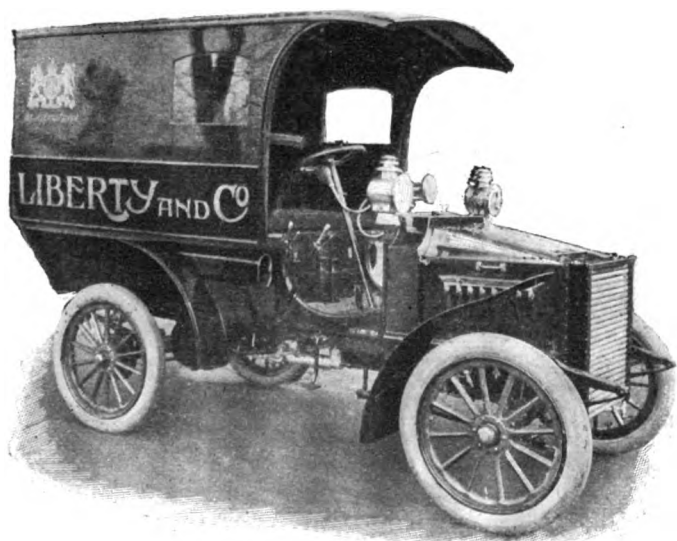
THE Hulbert-Bramley Motor Company, Limited, has been registered with a capital of £600 in £1 shares, to adopt an agreement with Mr. F. Hulbert, and to carry on the business of manufacturers of and dealers in motors, motor-cycles, etc.

THE British Accumulator Company, Limited, has been registered with a capital of £5,000, to acquire the business of electric accumulator merchants carried on as the British Accumulator Company, at Parliament Mansions, Westminster, S.W.

SOUTH HAMS, in Devon, is to have a service of motor 'buses, owing to the enterprise of the South Hams Motor Carriers, Limited. These are to be of the Milnes-Daimler type, and will be supplied by Messrs. H. Andrew and Company, of Yealmpton, Plymouth.

THE Cadogan Garage and Motor Company, Limited, has been registered with a capital of £3,000 to carry on the business of garage proprietors, manufacturers of and dealers in motors, etc. The first directors are Messrs. H. Kirchbaum and J. T. Musgrave.

WE herewith illustrate a steam delivery van which the White Steam Car Company have just completed for Messrs. Liberty, of Regent Street, W. This van is built on a standard 10-h.p. chassis, and, on account of the facility in stopping and starting continually during the day without incon-



venience and delay, will, it is hoped, make an ideal vehicle for the purpose for which it is designed. Messrs. Liberty are to be congratulated on their enterprise, which forms another step towards the general adoption of motor-cars for purposes of general utility.

THE Belsize Motor Car and Engineering Company, Limited, has been registered with a capital of £30,000 to adopt an agreement with Mr. J. H. Smith for the acquisition of the business of motor and motor-car builders and electrical and mechanical engineers carried on by Messrs. E. F. Hunter and J. Makeague, at Belsize Works, Clayton-lane, Clayton, Manchester, as Marshall and Company, and to carry on the said business. The first directors are Messrs. J. Barber, C. Higginbotham, H. Summers, J. H. Smith, and J. Whitehead.

ON the 15th ult. Mr. C. A. Smith, of the White Lion Hotel, Cobham, heard of police traps for motorists in his district, and was busy for several hours conveying the news to drivers of cars. In the evening the police visited his premises, discovered a man apparently under the influence of drink, and summoned him for permitting drunkenness on his licensed premises. Mr. Sherwood, for the defence, submitted that the action of the police in summoning him for permitting drunkenness was the result of a desire to retaliate for his action in connection with motor-cars. In the end the Bench dismissed the case.

ABOUT 200 persons attended the first lecture on the automobile at the Y.M.C.A. in Boston, U.S.A., the other week. The course is to be divided into two main divisions—petrol, and steam and electricity.

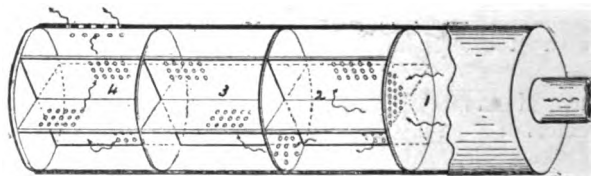
A NEW densimeter for testing the specific gravity of petroleum spirit is being introduced by Messrs. A. W. Gamage, Limited. The apparatus, which is known as the "Cossor," is illustrated herewith, one of its features being that the indicating scale is provided with three special red lines, the purpose of which is given below. A small glass jar is provided into which the sample of petrol to be tested is poured. The densimeter is then dropped in the liquid, care being taken that the stem does



not touch or cling to the side of the jar. If the broad red line or limit mark is above the surface of the fluid, the petrol is too dense and should be discarded. In winter or cold weather, the red line marked winter, and in warm weather the red line marked summer, should not be above the surface of the fluid. The densimeter, with glass jar, can be had either packed in a small tin or morocco leather case.

A SECOND edition of the work on "Gas Engine Design," by Mr. E. J. Stoddard, has just been published by Messrs. Parker and Burton, of Detroit, Michigan, U.S.A. The book, which has met with a favourable reception in America, is an attempt to place the subject of the design of explosion engines on a rational basis. While it is intended to avoid mathematics as much as possible, as, for instance, in the diagram by which the compression, explosion pressure, and generally the indicator diagram may be approximated without mathematics, and the diagram from which the mean effective pressure may be read directly, still it has not been necessary to omit mathematics entirely. An earnest effort has, however, been made to bring the theory and mathematics within the reach of those who are only familiar with the elements. Graphical methods have been used to cover almost the entire subject, and one capable of using graphical methods and not analytical can still go thoroughly into the theory of compressed air and the gas engine. The price of the work is normal, to cover merely a part of the cost of production and postage.

THE Krastin Automobile Company, of Cleveland, Ohio,* has lately devised a new silencer for petrol cars which they claim to be very light and to have a high efficiency. It consists of a sheet iron cylinder, divided into four compartments by three sheet iron discs. Three of these compartments are subdivided by sheet iron walls into four quarters. The motor exhausts first into compartment No. 1, and then, by a series of holes, equal in area to the exhaust pipe, into a quarter section of compartment 2; thence the gases pass through the other three quarters of com-



partment 2 into compartment 3; through its four quarters successively into compartment 4; then through its four quarters and out to the atmosphere. The number of small holes decreases gradually as the exhaust goes into each successive quarter section into the open air, and the discharge is effected through a few holes of small area. The result is said to be a gradual cooling of the gases as they pass through the various sections, so that they reach the outside air at a very low pressure, making no noise. As a result of a series of tests it is claimed that the silencer causes no appreciable back pressure.

THE NATIONAL SHOW.

(Concluded from page 753.)

ONE of the most novel two-seated cars we have seen was that exhibited by the Kyma Car Company, Ltd., and, in view of its relatively low price, it should meet with a large demand. The body is constructed of wicker, and is hung on special springs, which make it very easy riding. It is made in two varieties, one with a 4-h.p. water-cooled motor, the other with a 2½-h.p. air-cooled engine. In both patterns the transmission is by chains from the motor to a secondary shaft, and from thence to the driving wheels by flat belts. Two speeds, varying from six to twenty-five miles an hour, are provided, with free engine, and friction clutch operated by a pedal. Steering is by a wheel on an inclined shaft, to which all control levers are brought, within easy reach of the driver's hand. The engine is placed in a vertical position in front of the car, and petrol and oil supplies sufficient for a run of 120 miles are carried in a tank suspended immediately over the engine. Ignition is of the ordinary high-tension type, while the water circulation in the 4-h.p. machine is on the thermo-siphon system. Two pedal-operated brakes are fitted; these are of large dimensions, and act on the outer surface of the rear belt-pulleys. The two speeds are obtained by the aid of a feather, by means of which either one of the pair of enclosed chain drives from the engine to the countershaft can be made to transmit the power. No differential is used, the rear wheels being allowed to overrun each other in turning corners, by means of a free-wheel clutch in one of the small belt pulleys. The car is, as we have said, on exceedingly novel lines, and from an independent source we learn that it is

price, the "Little Star" has been introduced, the one at the Show having attracted considerable attention during the week. In general arrangement the vehicle is a reduced facsimile of the larger cars, chain transmission being adopted in place of the cardan shaft usual in this class of vehicle. The motive power is supplied by a 6-h.p. single-cylinder engine with water circulation maintained by pump and radiators. The cylinder is 4 in. bore by 4 in. stroke. Three speeds forward and reverse are provided, a direct drive being available on the top speed. Altogether the little car is one which should meet with a large demand, especially on the part of travellers, as the vehicle is not only of a convenient size but has ample space at the rear for bags, &c.

In a recent issue we announced that arrangements had been completed for the manufacture of the engines and component parts of the Duryea cars by the well-known engineering firm of Messrs. Willans and Robinson. The first of the English built 12-h.p. cars was last week exhibited by the Duryea Company, Coventry, and came in for keen inspection, not only by the general public, but by engineering critics. Needless to say the workmanship is of the highest class, the new model being a distinct advance on its progenitor. The three-cylinder horizontal engine is retained, but a number of modifications have been made with the view of increasing its efficiency. Thus the water jacket is larger than hitherto, it being carried not only round the cylinders but the valve chambers as well. The water circulation is maintained by a chain-driven pump and radiator. Both the inlet and exhaust valves are mechanically operated off one cam shaft, and all six valves are interchangeable. The crank chamber is now of aluminium with removable inspection covers, and the three-throw crankshaft is no longer hollow, but cut solid out of

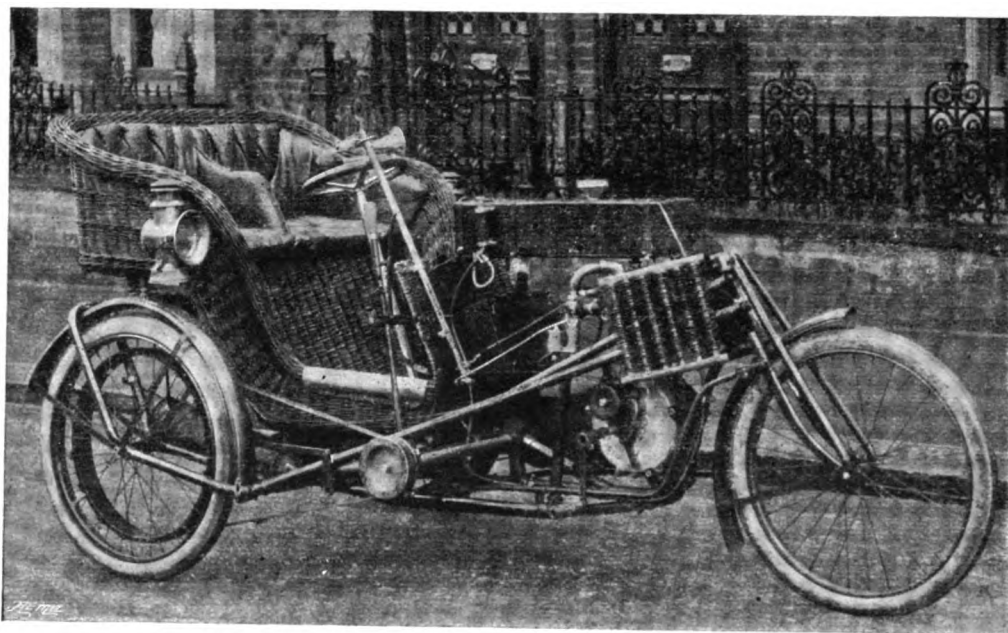


Fig. 1.—The "Kyma" Car.

an excellent hill-climber, notwithstanding the belt drive, and that on favourable roads it has attained a speed of twenty-five miles per hour.

Mr. R. Owen Allsop exhibited an exceedingly interesting motor designed to use paraffin or kerosine as fuel. The feature of the engine is that in addition to a cylinder working on the usual four-cycle principle, it has at the side a small fuel vapour pump cylinder, operated from the crank shaft. The paraffin is sprayed into this, compressed, and afterwards admitted as gas into the combustion chamber proper. Owing to the positive feed of gasified hydrocarbon, there is no condensation on the walls of the cylinder, and no carbon or tarry deposit. The combustion is stated to be perfect, and the exhaust smokeless and inoffensive. The running is very regular, the engine picking up readily without any alteration to the feed of fuel or air. After many experiments the engine has been adapted for motor-car purposes. It is a high-speed engine with electric ignition, the motor cylinder being 100 mm. bore by 120 mm. stroke.

Occupying a leading position on the stand of the Star Engineering Company was the famous "Star" racer, which in its finished form as a touring car bears but little resemblance to its former self. It is now fitted with a large and comfortable tonneau body, capable of seating three persons at the rear. Various improvements and alterations have lately been made in the vehicle, notable among which is the adoption of a pressed steel frame. On the stand were also examples of the Star Company's 18-h.p., 12-h.p., and 7-h.p. cars. The first-named vehicle was well worthy of examination; it is fitted with a vertical four-cylinder engine of 18-h.p., the inlet as well as the exhaust valves being mechanically actuated. Four speeds forward and a reverse on one lever are available, the chain system of transmission from the differential countershaft being adopted. In view of the demand for a small two-seated car at a popular

one piece of steel. Whilst the magneto generator is still retained for spark generation, it is chain driven, and the current is passed through a coil, transformed to high tension, and used in the engine through ordinary sparking plugs. Several important improvements are introduced in this system, the magneto generating current of sufficient intensity for sparking at "dead slow" speed, and not only so, but automatically governing the spark advance in accordance with the speed of the engine. In the gearing, too, the ratio has been altered, the gear now provided being a three to one, instead of a four to one, reduction (and a reverse), thus making the low gear much more useful, and, by an alteration in the clutch, permitting of clutch slipping on the high gear in traffic. The power is transmitted by a specially constructed Renold roller chain. The engine is used as a brake, and supplemented by three powerful metal to metal grip brakes, two of which act in direct connection with the wheels. The axle is made of nickel steel, and by the construction of the new forecarriage not only is the front (tubular) axle held to its work by tension rods, but these are so fitted on universal joints that the axle is free to move vertically at either end without throwing any strains on other parts of the car, and an entirely new front spring system is introduced. The steering and control system is modified by separating the gear changing from the steering and throttle control, these latter being effected by a horizontal, instead of a vertical, lever, whilst the changing of the gear and the manipulation of the clutch are effected by a lever at the left hand of the driver, by the side of which a second lever actuates the reverse, and applies the reserve brakes, the differential brake being worked by the foot, as before. The steering handle is not only reversible, so that it may be used by either occupant of the front seat, or moved up out of the way when entering or leaving

the car, but can be adjusted to the height of the driver—a feature which will be appreciated by users. The carburettor has been improved, and is now fitted close to the inlet pipe, whilst the wheelbase has been considerably lengthened. There are several other important features in connection with the car which, in the absence of drawings, cannot be properly dealt with, but sufficient has been said to show that the new English-built Duryea is more than likely to uphold the reputation this vehicle has already attained. In addition to the chassis of the new type the body-work for a similar car was shown, as also a 10-h.p. Duryea brougham or coupe, controlled from the inside, and a 10-h.p. wagonette, with a hood over the front seat.

Messrs. W. Montgomery and Company, of Bury St. Edmunds, exhibited a number of the "Montgomery" side-carriages for bicycles, the special features of which are the compensating joints which connect them to the machines. The advantage claimed for the arrangement over a rigid connection is that the side-car rides much more comfortably, and that the steering and taking of corners are each rendered perfectly safe. Moreover, the machine can be ridden without a passenger in the side-car without any difficulty. Any up and down motion from the bicycle is entirely compensated for by the joints, the only motion the side-car has being due to the single wheel only.

The General Motor Car Company, Ltd., which have recently acquired large works at Mitcham, Surrey, are devoting special attention to a light form of car for general trading and commercial purposes. One of the most attractive vehicles exhibited was that specially adapted for the use of doctors or commercial travellers. This is fitted with a 6½-h.p. Aster engine, having throttle control, three speeds forward and a reverse, a cardan shaft conveying the power to a rear live axle. This type of car can be provided with either a two-seated body, or, when arranged as a commercial vehicle, with a readily detachable van body. The General Company had also on view a 12-h.p. van they are building for Post Office work. This has a long wheel base, and is intended to carry loads up to one ton. The power is furnished by a 12-h.p. Aster engine, chain transmission being in this case adopted. A smaller 9-h.p. van has been used by the G.P.O. for some time past, and has, we are informed, already run over 5,000 miles.

Quite a new departure in transmission has been made in the Starley motor-bicycle, made by Messrs. Starley, Coventry. The 2-h.p. air-cooled engine is, as will be seen, set vertically, but at right angles to the usual position. The crank case is in two parts, and is attached to the cylinder by means of a threaded collar. Through the rear side of the crank case the crank shaft projects into a small gear case. Referring to the sectional view (Fig. 2), the pinion wheel A is fixed rigidly to the crank shaft, and revolves at the same speed, while meshing at all times with the wheel C on the countershaft beneath. The wheels B and D are similarly related, but while B is free to revolve on the main shaft, the pinions C and D are rigid with the countershaft. The main shaft carrying the worm drive E is normally unconnected with the wheel A. Within the wheels A and B are expanding clutches, which are operated by means of cones attached to a sliding sleeve, free to move longitudinally, but not to turn except with the main shaft. When, therefore, the sleeve is pressed forward by means of the lever and flanged collar seen on the main shaft, the forward cone

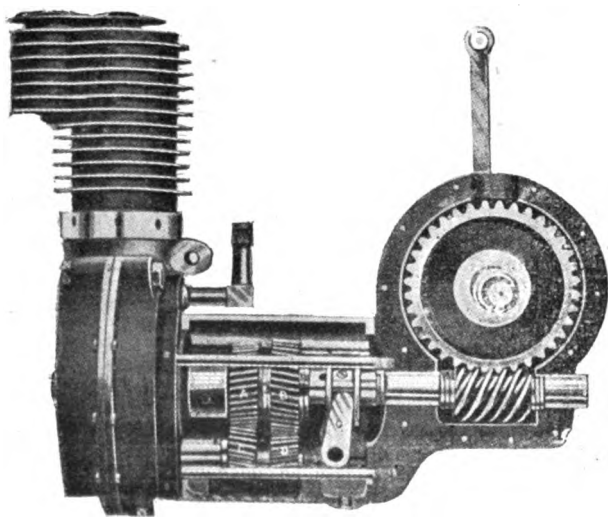


Fig. 2.—View of Engine, Change-Speed Gear, and Worm-Gearing on Starley Motor-Bicycle.

engages gradually with the expanding clutch within A, thus rendering it rigid with the main shaft and constituting a direct drive, the other three wheels meanwhile revolving idly. If the sliding sleeve be pressed rearward, releasing the clutch in A, till the rear cone engages the clutch in the wheel B, the latter becomes rigid with the main shaft, which it drives by means of the power received from the motor through A, C, and D. This reducing gear gives a ratio to the direct drive as 5 to 9. On the same shaft as the large worm wheel is a chain wheel which transmits the power to a chain wheel on the rear spindle. This chain is the only one used, and can be

operated by the rider's pedals either to start with while the engine is running free, the cones being neutral, or to assist the motor on a hill. Thus, a fixed drive is provided in lieu of the usual belt, and in addition a change-speed gear with a gradually-tightening clutch, and a free engine at will. The ignition and the exhaust valve lifter are controlled by one lever.

Another Coventry concern to take up the manufacture of motor-cycles is the Centaur Cycle Company, Ltd., whose machines comprise a number of special features, the most noticeable being the inclusion of the silencer as an integral part of the frame, this taking the place of the usual tube from

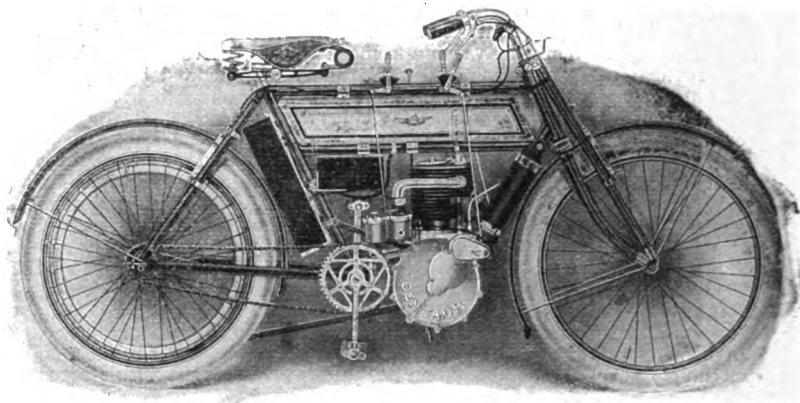


Fig. 3.—The Centaur Chain-Driven Motor-Bicycle.

the bottom of the head to the bottom bracket. Two types of machines—belt and chain-driven—were shown, both being fitted with a three-h.p. air-cooled engine with mechanically-operated inlet valves. A Longuemare float-feed carburettor furnishes the mixture, while duplex accumulators are provided, the latter being connected up to a three-way switch. Another special feature is the antivibratory fork. The two fork blades, which are of a strong duplex section, are carried right through the fork crown to the head lug. In the ordinary fork, the point at which the vibration is concentrated is immediately below the fork crown, but in the Centaur machine there is no brazed connection at this point, the eyes of the crown being fitted with rubber cushions, through which the fork blades pass. The vibratory shock, instead of meeting with a dead resistance at this point, falls upon the rubber cushions, in which there is a certain amount of "give" in both a forward and backward direction. This is supplemented by a vertical movement, caused by the lower crown plate connecting the two fork blades being supported by a thickened rubber head, forming part of the cushion. The movement caused by the compression of these is provided for by an elongated slot and stud at the point at which the fork is hinged. In the chain-driven machine the engine drives a chain wheel on the bottom bracket by means of a sprocket on the engine crank-shaft, and thence by means of a second chain on a smaller sprocket to a larger chain wheel on the rear driving wheel. Pedalling forward is provided for as well as starting the engine by means of a ratchet clutch on the bottom bracket spindle and a ratchet clutch on the rear wheel hub on the right-hand side, in which the usual chain drive, with a very low gear, is provided for pedalling and starting.

The "Lithanode" accumulator in a variety of sizes formed the exhibit of Messrs. Longstreth's, Ltd. It is claimed for these ignition batteries that they are capable of being discharged at exceptionally high rates, and that the elements are not injured by being short circuited. The positive plates are constructed of solid material cast up into lead sections. A new accumulator for use on motor-cycles is provided with an ingenious anti-acid spilling arrangement, any acid which may find its way out of the cell passing into a side receptacle forming part of the accumulator. Another point to which attention may be directed is the non-corroding terminals, the positive terminal, where it leaves the accumulator, being surrounded with a short closed tube of celluloid containing resin oil. On this stand were also displayed a series of induction coils made by Marconi's Wireless Telegraph Company, Ltd. These are constructed both with and without tremblers, and for one, two and four-cylinder engines. One type of coil is fitted with a special high-speed trembler, in which, instead of "screw" and spring contacts, each contact is fixed at the end of a flat spring. The upper spring is so adjusted that when the circuit is closed the break is slightly retarded, so allowing the core to be more fully magnetised.

The well-known "Renold" silent chain for high-speed driving was exhibited by Messrs. Hans Renold, Ltd. This is made in pitches ranging from ½ in. to 1½ in., and in widths extending up to 6 in., and is being largely used on motor-cars for conveying the engine power to the gear box. A range of roller chains in English and French sizes were also on view, these being designed to give the greatest strength with a minimum of weight. It is claimed for these chains that, owing to the very large bearing surface on any given pitch, the maximum length of wear can be extracted from their use. Reference may also be made to a new specially strong ½ in. roller chain for chain-driven motor-cycles, which has been adopted by the Humber, Singer, Centaur, Juhu and other motor-cycle builders.

In addition to a 3½-h.p. motor-bicycle with vertical engine and belt drive, the Wearwell Motor Carriage Company, Ltd., exhibited a water-

cooled "Motette." The engine is of $3\frac{1}{2}$ -h.p., the water tank being fitted behind the front seat, while below the tank is a small ribbed-pipe radiator, its position being such that it meets with a considerable cooling draught. The power is transmitted through a chain and a Bowden clutch in the rear wheel hub.

The See Motor Car Supply Company exhibited several of the Lamaudiere motor-bicycles, for which they are sole English agents. The feature of this machine is that the motor is made entirely of steel, and is built into the frame, taking the place of the usual down tube from the saddle to the bottom bracket. The bore is $2\frac{1}{4}$ in. and the stroke 2.45 in., the engine actually developing over $2\frac{1}{2}$ -h.p. An outside flywheel is employed. The power is transmitted by a raw-hide belt working over a jockey pulley. The latter can be raised or lowered at will by the rider from his seat, thus obtaining, when desired, a free engine. The See Company also exhibited samples of the Samson-Hutchinson non-skidding and unpuncturable bands for pneumatic tyres, of which an illustration was given in a recent issue.

A new motor-bicycle of American design was the "Marsh," to be seen on the stand of Mr. W. P. Brough, Kettering. The engine is a large one, 80 mm. by 82 mm., stated to develop $3\frac{1}{2}$ -h.p. It is built in the frame, slightly inclined to the rear, and drives through a $1\frac{1}{4}$ in. belt on to a large pulley made in one with the rear wheel rim, a jockey pulley being provided to tighten the belt.

Mr. B. E. Dickinson showed his "Morette" motor-carriage of 4-h.p., and also a petrol-saver and strainer. The delivery tube is fitted with a rigid bend, so that it may be hung on or into the tank, and at the other end of the tube is a strainer. Waste of petrol is prevented by this useful device, which can be folded up into a small space.

A varied and comprehensive display of motor clothing was made by Mr. C. R. Base, whose exhibit always contains some features of interest. Leather and cloth coats, vests, etc., with special linings to render them

The Longuemare type of carburettor is fitted; high-tension ignition with detachable contact, and a new pattern speed regulator. The Dupont two-speed gear engaging with phosphor bronze spur wheel, mounted round the differential on the axle, is another feature. A wicker body of good design completes a well-made miniature car. The Eddington tandem motorette, No. 2 pattern, is a bolder vehicle with a 4-h.p. water-cooled engine of 80 by 104 mm. cylinder dimension as compared with 75 by 80 in the lesser vehicle. The water circulation is on the thermo-syphon system. Other details are on similar lines to the 3-h.p. machine. The wicker body is removable for a parcels box or carrier at will, and, altogether, Messrs. Hillsdon and Company have made a good effort to popularise "the poor man's car." A motor-bicycle with engine of 3-h.p. was also shown on the stand.

The "Buckley" Patent Motor Wheel and Carriage Company showed an open-sided accessible motor wheel fitted to a motor-bicycle. The machine is gear driven, and it is claimed by the makers that there is no sacrifice in mechanical principle in the mounting of the wheel or of the axle.

The Ilford Motor Car and Cycle Company, Ltd., were represented by the "Regina" motor-bicycle, fitted with $2\frac{1}{2}$ M.M.C. and 3-h.p. Fafnir engines respectively. The engine is placed in a vertical position, low down between the wheels, the transmission being by means of a solid V belt. Lubrication has received careful attention, this being by means of a positive sight-feed pump, fitted in position to be easily operated while running. The oil tank capacity is for 400 miles, and the petrol capacity $1\frac{1}{2}$ gallons. The control is by a switch on the left hand side of the bar and Bowden twist handle on the right-hand side of the handlebar and exhaust governor.

The Woodcote Engineering and Motor Works had a show of accumulators, charging batteries, coils, measuring instruments, etc.

The "Anglian" motor-bicycle, with its $2\frac{1}{2}$ -h.p. air-cooled De Dion engine

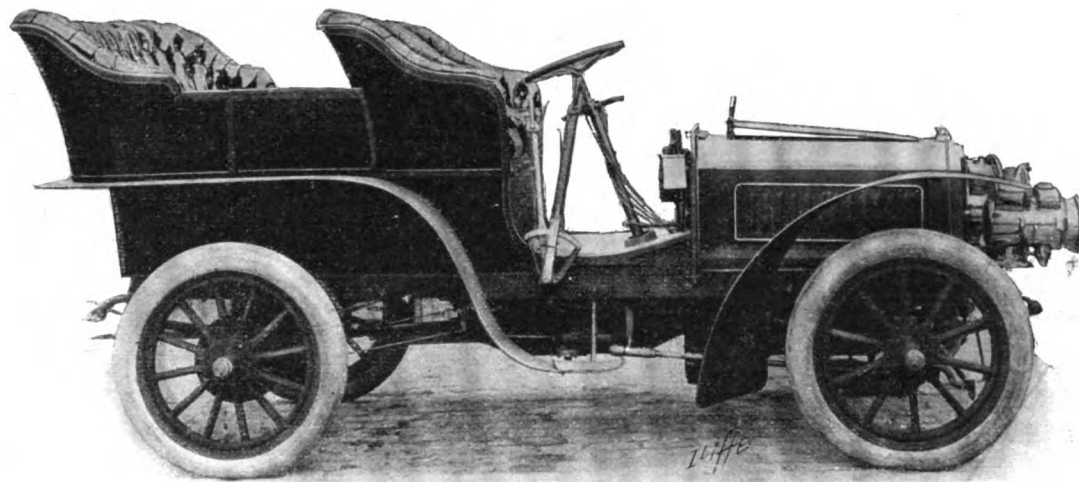


Fig. 4.—The 24-h.p. "Regal" Car. (See page 772.)

absolutely wind and air-proof, were a feature of the display, caps and hats for both lady and gentlemen motorists being also in profuse array on the stand. A selection of goggles, muffs, foot-muffs, and other goods necessary to the motorist in such weather as lately experienced revealed the growing scope of Mr. Base's activities.

A useful display of the Millford forecarriages, side cars, front carriers, and other of their specialities was made by Messrs. Mills and Fulford. This firm have become well identified with this particular line, and in bringing out fresh ideas have been prompt in meeting the changing demands of the industry. Their 1904 pattern of fore-car differs from the previous models in several details, the most important being in the fitting of the front portion. The front of the cycle is removed entirely and a special steering stem inserted; this dispenses with the spring in the forks, and renders the steering much more positive. The extension of the main tubes to the back portion of the motor-cycles makes the vehicle more rigid, besides allowing of their use as foot rests. The attachment admits of the fore-car being removed in less time than formerly.

Now that fore-carriages and similar devices have become so popular, the exhibit of Messrs. J. J. Plater and Sons was naturally of great interest to the trade. Cane and wicker fore-car bodies in all styles and designs, trailer bodies, side baskets, etc., were shown in infinite variety.

Among the minor exhibits was a "quick-grip" spanner and nut gripping pliers shown by Messrs. A. G. Taylor and Co., a time and temper-saving device of effective utility.

Messrs. Hillsdon and Company had a tandem motorette—a two-seated vehicle of somewhat ingenious design. In one pattern a 3-h.p. air-cooled engine is fitted. In this the inlet valve chamber is slightly to one side of the engine to secure it being entirely exposed to the rush of air.

and carburettor, was shown by the Anglian Motor Company, Ltd. The transmission to the rear wheel is by means of a V-shaped belt.

Messrs. J. Lacoste and Company exhibited an internal wipe contact-breaker, the feature of which is a red fibre ring placed in a gun metal body. A steel contact piece is provided in the ring, and on the end of the rotating shaft is a brass arm fitted with a steel roller. This makes contact with the insulated contact piece in the fibre ring, the results being very satisfactory. Accumulators, coils, sparking plugs, and other small goods made up an interesting display.

In tyres there were a few exhibitors, including the Dunlop Company, of whose exhibits it is difficult to say anything new, their merits being so well recognised; the Scottish Tyre, Ltd., with the Scottish de Luxe voiturette tyres built up with Para rubber and tangential linings; the North British Rubber Company, Ltd., with the Bartlett-Clincher motor-cycle tyres, the Clincher motor tyres, and the Clincher-Michelin motor tyres; the Wilkinson Tyre and Tread Company, Ltd., with their non-skidding tread—a device for vulcanising over the outer covers of motor-cars and motor-cycles; and the Williams Tyre Company with a non-slipping "Uvula" tyre for motor vehicles.

Recognising the early operation of the Motor Car Act, Messrs. Worsnop and Co. have brought out head lights and tail-lamps with side lights to illuminate the numbers. This formed a central feature of their display, which also comprised motor-bicycle lamps and several minor accessories for automobiles.

The Martin Pneumatic Tyre Company, Ltd., showed a number of their motor-tyres, the feature of which is their easy method of detachment, and the fact that inner tubes are not used. In addition to the ordinary form a tyre with a flat tread is now being made, while the company also exhibited a car shod with Martin tyres, which are stated to have been run 4,000 miles without having been pumped up or met with a puncture.

THE STANLEY SHOW.

(Concluded from page 755.)

The Enfield Cycle Company, Ltd., showed examples of their 6-h.p. and 10 h.p. Enfield motor-cars, an illustration of the latter being given in Fig. 5. The engines are of the vertical type with cylinders $3\frac{1}{2}$ in. diameter and 5 in. stroke, with mechanically-operated inlet and exhaust valves, Longuemare carburettor and centrifugal governor. The cylinders and water-jacket are cast in one piece, the valve chambers are also an integral part of the cylinder, this construction ensuring reliability of running. The

transmission being adopted. On the same stand were a couple of highly-finished motor-cycles, one being of $2\frac{1}{2}$ -h.p. and one of $3\frac{1}{2}$ -h.p., the latter being water-cooled. The motor, which is fixed vertically in a loop frame, has a steel cylinder, into which the cylinder-head is screwed. In both machines belt transmission is adopted.

"The Princeps" motor-bicycles were exhibited by Messrs. J. E. Hutton, Ltd., both chain and belt-driven designs being on view. One type to be used in connection with a fore-carriage was fitted with a 4-h.p. twin-cylinder engine of 70 mm. stroke by 72 mm. bore. A small lever is provided to admit of the engine being started before the rider mounts. A spray carburettor is fitted as well as adjustable valves. A special form of commutator is provided, necessitating only one coil for the two cylinders. A Hans Renold $\frac{5}{8}$ -pitch chain is employed, and ample wheel base has been given the machine. The F. N. motor-bicycle was again shown by Messrs. W. R. McTaggart, Ltd., its standard features being retained for the coming season. The $2\frac{1}{2}$ -h.p. engine is placed vertically in front of the bracket, a noticeable point about the motor being the wide bearings.

On the stand of Messrs. Bradbury & Co., Ltd., was the 2-h.p. Peerless motor-cycle that obtained a first-class certificate in the 1,000 miles trial of the Auto Cycle Club. In addition to types of their machines the firm also had a set of engine parts noticeable for their excellent design and workmanship.

Messrs. G. Strauss and Co. are well identified with the Fafnir engines, which were shown of various powers. For motor-bicycles this has an exhaust-valve governor worked by a rod from the handle-bar.

Werner Motors, Ltd., displayed their new models for the coming season, these including two machines with engines of $2\frac{1}{2}$ and $3\frac{1}{2}$ -h.p. respectively. The improvements which have been introduced include a free engine and speed regulator, while a new form of engine pulley has been adopted to prevent the slipping of the belt. A dust-proof carburettor,

a new system of brakes, including a rear rim-brake, and a new contact breaker are also features of the new Werner, which show the intention of the makers to keep well to the front.

Messrs. Brown Brothers had a complete range of accessories and fittings, and also showed their 6-h.p. "Brown" single-cylinder two-seated car. Their motor-bicycles for the coming season will be fitted with 2-h.p., $2\frac{1}{2}$ -h.p. and $3\frac{1}{2}$ -h.p. engines. In all these sizes the engine is rigidly fitted in front of the bottom bracket, so that it can be easily detached from the frame by removing two bolts. The $2\frac{1}{2}$ -h.p. and $3\frac{1}{2}$ -h.p. engines are fitted with mechanically-operated valves and extra large flywheels. The bearings are of exceptional length, being 2 inches wide on the driving pulley side. Special attention has been paid to the construction of the crank case,

crank shaft gives large and ample bearing surface for the thrust bearings, and also for the connecting rod bearings. The flywheel is of large proportions, ensuring great regularity in the running of the engine. The tubular frame is carried on four springs slung so that they will give a comfortable suspension under the most trying conditions. The change-speed gear gives three speeds forward and one speed reverse, the drive on the top speed being direct, and the intermediate speeds being automatically thrown out by the top speed engagement. The foot brake acts directly on the transmission shaft from the change-speed gear. Several excellent arrangements have also been devised in other parts, while the comfortable tonneau should make the Enfield a popular car for the 1904 season.

Mr. O. C. Selbach made an interesting display of the Regal cars, the features of which have been made familiar to our readers. He also showed a 24-h.p. four-cylinder car, fitted with a tonneau body, and having a most effective appearance (Fig. 4). The vehicle has three speeds forward and one reverse, the drive being through gears and cardan shaft on to the live axle. The mechanically-controlled valves, being set in the crown of the combustion chamber, are easily accessible for inspection when necessary. The coil, commutator, and lubricator are located on the dashboard. On the standard below the steering wheel are the levers for air, gas, throttle, and ignition, operated by means of Bowden wires.

The "Jaxon" car was shown by Messrs. Seabrook Bros. This is a 6-h.p. engine two-seated car at a popular price. The motor is located at the rear. The radiating coil is of brass tubing fitted with corrugated copper flanges, and the water tank is placed under the bonnet, rotary pump circulation being adopted. Two speeds forward and reverse are provided, the live axle being fitted with a spur differential gear. The London agents for the "Jaxon" car are the Central Motor Co.

The Roots Oil Motor and Motor Car Company are familiar to motorists in connection with their 5-h.p. and 12-h.p. cars, in which paraffin oil can be employed as fuel. Tube and electric ignition, the latter of either the magneto or accumulator type, can be provided. The governing is effected on the centrifugal principle at a normal speed of 750 revolutions. This can if desired, be reduced to 400 or increased to 850. A friction clutch and Renold chain effect the transmission, the gear box having three speeds and a reverse. There is a pedal brake and also a band emergency brake. These vehicles can be made with bodies to carry four, six, or eight persons, and are proving their serviceability in countries where petrol is dear, and in places where it is not to be obtained.

The Société des Automobiles Française occupied a stand in the Minor Hall, where they made a feature of a display of their Papillon cars, motor-bicycles and skeleton sets for motor-cycles, as well as of a varied assortment of accessories. The cars shown were of 6, 9, and 12-h.p. respectively, with tonneau bodies. With their long wheel base and low-slung bodies the cars attracted much notice. Power is transmitted by means of a cardan axle with cone clutch, the cooling of the engines being by rotary pumps worked by the motors. The engines are of the genuine De Dion type. Three speeds forward, and one reverse, all operated by one lever, are provided.

Hidden away in a corner, La Société Mécanique et Moteurs, of Liege, exhibited a 12-h.p. car, interesting from the fact that in place of the usual arrangement the power is transmitted through a Jenatzy magnetic clutch. The two-cylinder engine has mechanically-operated inlet valves. Three speeds and a reverse are provided, the chainless live-axle system of

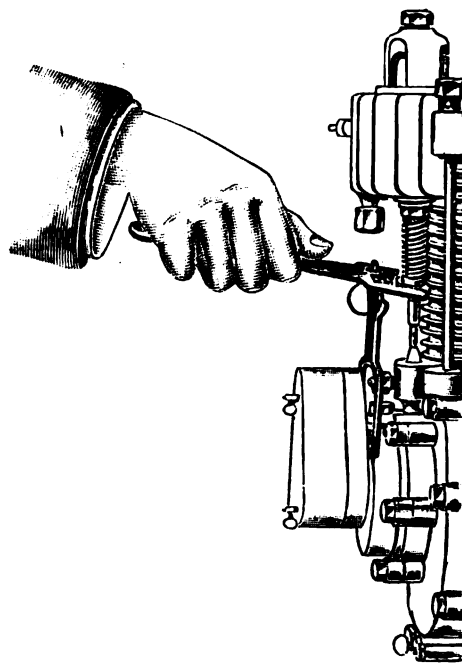


Fig. 6.—The "Duco" Exhaust Valve Spring Remover.

which is absolutely oil tight. The belt pulley is also oil-retaining, thus keeping the belt free from oil. An efficient silencer is provided. The contact breaker is very neat and compact, and is of the universally used "make and break" type. An exhaust valve lifter is fitted. This latter and the advanced sparking are actuated by one lever. Fig. 6 shows the "Duco" exhaust valve spring remover lately introduced by Messrs. Brown Bros. The illustration clearly shows the method of using the device, which will be found a useful addition to the tool bag.

The Faceler Motor Syndicate had a set of the component parts of their "Faceler" motor, and a chain-driven motor-cycle fitted with one of their engines of 2½-h.p. The arrangement of the flywheel and gearing has been devised to give a narrow crank case, while the intermittent action of the second shaft allows the valves to open quickly without the use of cams.

A good show was made by Messrs. Hobart Bird and Co., Ltd., whose motor-cycles have an emergency handle-bar control, the movement of one lever breaking the electric circuit, lifting the exhaust valve, and applying a brake to the back wheel—the three operations being in succession. The firm are still fitting 2½ and 3-h.p. engines to their motor-cycles, while they have brought out a Tri-car with a 3½-h.p. engine, belt driven. In this a foot-rest is provided for the driver's feet, while foot-plates are fitted near the rear axle for mounting the car after the machine has been started.

On the stand of the East London Rubber Company was a lady's motor-bicycle and Kerry motor-bicycles of 2½-h.p., 2½-h.p. and 3½-h.p. Special attention was also directed to the "Empire" back-peddalling support, which is adjustable to all inequalities of the road, and when in use has a base of 18 inches, adequate to meet all danger of side-slip. It can be brought in and out of use practically instantaneously, and does not interfere with the machine being wheeled backwards and forwards. As an emergency support, a stand, a jack, or an anti-skid this "Empire" device is equally valuable.

Messrs. John A. Prestwich and Company showed their motor-cycle set and a 3-h.p. motor-bicycle with mechanically-operated inlet and exhaust valves fitted on the top of the combustion head.

The "Vincos" motor-cycles with Minerva engines of 2½ and 3½-h.p. were exhibited by Messrs. W. H. Heighton, Ltd.

The Coventry Chain Company had their familiar exhibit, much interest being shown by visitors in their motor-cycle belt fasteners and drives.

Messrs. J. E. Hopkinson and Co., of West Drayton, had a good display of solid tyres for heavy motor work, motor-cycle inner tubes, and covers. The London Tyre Repairing Company also took occasion to draw attention to their facilities for the repair of tyres.

Reference has already been made to the good show of motor garments made by Messrs. Alfred Dunhill and other firms. The Grapholine Manufacturing Company, Ltd., also had a selection of motor clothing, gloves, gauntlets, and rainproof coats, as well as levers for removing motor tyres, voltmeters, and sparking plugs.

Mr. Theo. Masui had a selection of motor and motor-cycle tyre covers fitted with "Samson-Hutchinson" non-skid bands. These bands consist of chemically-treated chrome leather, which is protected by rivetted steel studs. Being very light they do not slacken the speed of the cars, and being vulcanised on are not likely to come off.

The "Vindec" special motor-cycle was shown by the South British Trading Company. This is fitted with the 2½-h.p. "F. N." engine and carburettor, the engine being placed in a vertical position in the frame, and easily detachable. A hinged rear mudguard, to facilitate the removal of the rear wheel, is also provided.

"Garlio" was shown. These cleaning and polishing cloths are so familiar to motorists that their special advantages need no detailing here. They are made entirely from silk, and have the virtue of being non-inflammable.

Motor-car headlights, sidelights, and rearlights formed the attractive display of the Twentieth Century Manufacturing Company, who also exhibited special hand lamps burning acetylene gas. In the gallery, Mr. C. Lohmann had the "Perfecta" acetylene lamps for motor-cycles. Messrs. H. Miller and Company, Ltd., had a motor "Edlite" to burn oil.

Messrs. Steiner and Company, of Houndsditch, made a big show of lamps and of motor-horns, the former department including several powerful patterns intended to fulfil the requirements of the new Motor Car Act. Flexible tubing, with reversible clips, was also in great assortment.

Motor lubricants, greases, etc., were shown by the County Chemical Company, Ltd., of Birmingham, who are making a special feature of their motor carbide and of the G. B. puncture-proof device; the High Level Brand Company, of Newcastle-on-Tyne; the Elephant Chemical Company, who introduced "Calcoid," a new substitute for carbide, which is claimed to be economical and effectual, and are maintaining the repute of their "Motorol," which does not solidify in winter.

In the position long associated with the firm, Price's Patent Candle Company, Ltd., made a comprehensive display of oils for cylinders, motors, axles, chains and gearing, etc., as well as of the well-known "Belmoline" solidified oil and "Rangraphine" for motor chains. Oils, grease, and lubricants for automobiles were shown by the Stern-Sonneborn Oil Company, whose specialities are well known to motorists. These include the "Sternoline" lubricant for Stauffer and other grease lubricators.

Accumulators were shown by the Cologne Accumulator Works, who made a special feature of the "K. A. W." type. Messrs. H. and D. Friedenhain had a comprehensive selection of contact breakers, motor-cycle fittings, etc., and also showed several of the high-speed trembler coils made by L. Gianoli, of Paris. In the Arcade, electric motor-car lamps, batteries from three ampere hours up to sixty ampere hours, and accumulators of every description were shown by Messrs. Sanders; Messrs. Rehders and Company had a new accumulator on view with a solid fitting of special composition. The "Empire" ignition accumulators for motor-cars and motor-cycles were on the stand of Messrs. Sutherland and Marcuseon, where the "Empire" storage battery hand lamps were also to be seen. They also had a battery in which every part is readily accessible. Each element is independent of the others, and is fitted with non-corroding terminals.

When the lid is placed in position and the fly-nuts screwed down, the battery is practically liquid-tight. All connections are made with wire outside the lid. The elements are of the "Empire" type, in which ribbed porous separators entirely occupy the space between the plates, preventing the active material from falling away from the supporting grids. Messrs. Mason and Brown were present with voltmeters, improved ignition coils, and a motor-bicycle switch.

For attachment to ordinary bicycle frames the Bord Motor Company showed their 1½-h.p. engines. Light-weight motor-cycles were also on their stand, fitted with these engines. The carburettor has been improved, and an exhaust valve lifter, spark, and balanced flywheel have been introduced into the design of these motor-cycles.

The South British Trading Company, Ltd., showed the Kingston carburettors, motor wheels, Fisk tyres, and the well-known Sterling tool-bag, the features of which have already been described in the *Journal*. The Fisk tyres are steadily coming to the front in this country, and we hope to illustrate their principle of construction in an early issue.

Messrs. Shippey Brothers, Ltd., in addition to the Diamond tyres, referred to last week, had on view a 7-h.p. "Toledo" steam-car, with leather hood, admirably designed for the use of doctors.

Among the exhibits of the Crypto Works Company, Ltd., was an electrical speed indicator for cars. This can be placed in any position where driving is most convenient and can be arranged so that it is only working at the time when required to be read.

Weldless steel tubing, radiators for cars, &c., were part of the exhibit of Messrs. Accles and Pollock, who also showed a new sparking plug, terminal clips, and spare petrol tanks for motor-cycles.

Among miscellaneous goods not without interest to motorists were noticed the polishes, enamels, etc., of the Page Manufacturing Company, and the "Nugget" enamel and polishes.

Messrs. J. Dawson, Limited, took advantage of the Exhibition to show their "Linoona" motor-cycle belts, a feature of the display being a large belt for use upon high-powered cycles and where carriage attachments are used. In King Edward's Hall a display of motor-cycle beltings was made by Messrs. R. Lloyd and Co., special attention being called to the Bolata and canvas V-shaped "Motorite" motor-cycle belting and the "Motorite" belting in chrome leather.

Messrs. Clarke, Cluley and Co. exhibited the Globe belt-driven motor-cycle; the "Roc," with its 3-h.p. Kelecom engine and belt drive, was shown by Messrs. A. W. Wall, Ltd.; Messrs. May Brothers had the Lynx motor-cycles with belt drives, but fitted with various engines, including the M.M.C., Rex, Fafnir, and De Dion; Messrs. Graham Brothers showed the Parade and the Ariel motor-cycles, and also made a feature of their "Liberty" detachable sociable, in which the danger of side-slip is claimed to have been effectually prevented; on the stand of the Edmonton Manufacturing Company, Ltd., was an Edmonton motor-cycle, fitted with a 2½-h.p. Lurquin and Coudert engine.

The Abington Works, Ltd., were represented by the "King Dick" motor-bicycle, the novelty at the stand, however, being a motor-tricycle with a patent driving axle.

Messrs. J. E. Hopkinson, Limited, of West Drayton, had a good display of matting and motor-car rubber sundries, as well as solid tyres for heavy vehicles, an motor-cycle inner tubes and covers.

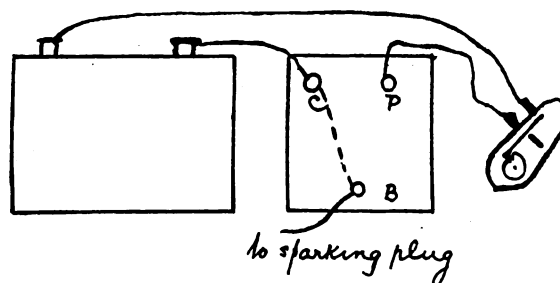
The Clyde Cycle and Motor Company had a motor-bicycle with a 3½-h.p. motor. Magneto ignition and mechanically-operated valves were two important features.

CORRESPONDENCE.

IGNITION TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having experienced the same trouble as your correspondent, I think I can give him the information he requires re his ignition troubles. The cause is not so much the combination of the high and low tension passing over the same wire, but mainly to the fact that the high tension current is of a slightly longer duration than the low tension, therefore



causing a jump spark between the platinum points after the contact is broken. This is undoubtedly due to the "stored-up" current passing from the condenser of the coil. I have remedied my trouble by two methods, both of which have proved very satisfactory. In the first method I connected an extra wire from the coil to a convenient place on the cylinder, thus getting the high-tension current to pass over this instead of through the contact breaker. Secondly, I connected the accumulator to coil the

reverse way round and run to "earth" through the accumulator.—
Yours truly,

H. J. T.

THE MOTOR VOLUNTEER CORPS.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your reference to the discussion on the Motor Volunteer Corps at the Automobile Club, Lieut.-Colonel Mark Mayhew is reported to have given as the reason for the distinction between officers and men in the corps the fact that it is a military organisation, and that all such organisations had officers to lead and control the regiment. Such a reply seems a wholly inadequate one to the criticisms that have been made. Will Mr. Mayhew tell us the name of the regiment where the proportion of officers is twenty-four to forty-nine privates—to say nothing of the Adjutant and others high in authority?—Yours truly,

A VOLUNTEER.

WARMING A MOTOR-CAR HOUSE.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Would a Tortoise stove be suitable and safe for warming a motor-car house? No petrol would be kept in the house other than that in the petrol tank in the car, on which acetylene lamps are used.—Yours truly,

ENQUIRER.

[We would strongly advise "Enquirer" not to use a Tortoise stove for warming his motor house. Although no petrol is kept in the house there is always the possibility of a leakage. The draught from the stove

on a clear country road. Then we stopped, and the first lesson was begun. I was told all about valves, spark advance levers, lubricators, pumps, and compression levers, to say nothing about the clutch, water and petrol tanks, and a dozen other things, until my head fairly spun trying to memorize them all. Finally, I had so mastered the seemingly intricate mechanical details of my car—or at least thought I had—that I was allowed to try and start the machine.

I did everything as directed, and was overjoyed to hear the motor buzz. My joy was short-lived, however, for a moment later the engine ceased its rhythmical puffing, and stopped. However, we were soon off again, and, at the "breakneck" speed of five miles an hour, we went along, until the expert insisted that the top speed should be thrown in. I demurred at first, but he insisted, and forward the lever went. As the high speed was locked in and the car leaped ahead, I almost wished that I'd never attempted to run the thing, and I was trying to decide which way would be the easiest to get out should a hasty exit be necessary.

An hour's practice in starts and stops brought confidence with it, however, and I began to feel that the expert's presence was unnecessary—in fact, an imputation and reflection on my skill as a *chauffeur*, for, like all beginners, I already had inflated ideas of my own powers. I knew how to start and stop the car, and could also steer it with considerable confidence, and the throbbing mystery beneath the bonnet didn't worry me, at least, not while it gave every indication of running all right. So back to the agent's depot we went, and, despite the timely warning about over-confidence, I left the paid expert and started out alone. The car worked to perfection, and my nervousness rapidly disappeared as I found how easy it was to operate the clutch and to change the gear at will.

I was speeding along a country road, congratulating myself on my



The Beaufort Company's "Princess" Phaeton with Side Entrance. (See page 759, last issue).

would tend to draw the fumes from this, with disastrous results. Hot water pipes would be a much safer plan.

A NOVICE'S EXPERIENCES.

To the Editor of the *MOTOR-CAR JOURNAL*.

SIR,—I read with much interest the article in your last issue on "The Care of Motor-Cars." The difficulties and troubles of an inexperienced beginner with a petrol car during the first few weeks of ownership are things long to be remembered.

Like many others, a desire to become a motorist had taken hold of me, and, after a good deal of preliminary enquiry and investigation, I finally purchased a 4½-h.p. car. Bearing in mind the fact that I hardly knew a sparking plug from a valve, I climbed timidly into the car a day or so after it became mine, and sat in anxious expectancy while the agent's expert turned cranks and handles and pressed down levers, until, finally, with a spasmodic snort, the engine started puffing away, making the car shake and vibrate from end to end. Still, the thing didn't move, and I sat, momentarily expecting to see the vehicle spurt forward and kidnap me, for, in my ignorance, the best I could have done would have been, possibly, to have guided the vehicle until it dashed both itself and me to destruction against some convenient obstacle.

The expert, after fussing about a little, climbed up beside me, and, pressing his foot on what he termed "the speed accelerator" (a Greek term to me then), set the motor buzzing faster, and, with the kind explanation that he had to start on the low gear in order to let the motor generate more power, he pushed forward a lever, and we were off with a jump. Then followed a series of quick runs and stops until we were well out of town and

ability to manage my new found treasure, all unsuspecting of danger, when a dog of the vehicle-chasing variety jumped out directly in my path, barking loudly. Fearing a collision with the brute I dragged back one of the levers, and, in my excitement, forgot to apply the brake. There was a sudden jerk, followed by a ripping, tearing, grinding noise, then a whirring of wheels, and the sound of the motor racing. It didn't take me long to bring the car to a stop, and then, frightened, I shut off the petrol, and waited for the motor to stop. It dawned upon me in a moment that I had stripped those precious gears, as to the location of which I had little or no idea.

A few days later, when the necessary repairs had been made, I ventured out again to do and dare. I concluded to run out into the country and try my luck, but before I returned home I was convinced that I was not possessed of any of that uncertain quality. A five miles' run was completed in good time without a mishap, and, rejoicing at this new experience, I started on the homeward trip. I had gone about a mile, when suddenly, when half way up a small hill, the motor stopped. This was a new experience, and, while holding the car at a standstill with the brakes, I shut off all the various levers, and then, opening them again, went through the starting operation, but it was no use.

Unable to get the motor going, I let the car back slowly to the side of the road, then got out to investigate. My first move was to get out the book of instructions, which was stowed safely away in the tool box, and then I sat down to read over again, for the thousandth time, the "Hints to Beginners; or, What to Do When the Motor Won't Run," despite the fact that hours of study had made them all familiar to me. First I tried the battery connections, then I removed the sparking plug, only to find by testing it that it was all right. There was nothing wrong with the trembler,

and the next thing in order was to take out the needle valve in the carburettor to see if it was free from dirt. Having exhausted the book directions I sat down disgusted and disheartened, hardly knowing what to do, and waiting for someone to come along whom I might get to watch the car while I arranged with someone to tow me home.

I thought to put in the time in experimenting with the motor, with the hope that some lucky touch might set it going again, and decided to open the petrol tank and see how much of the liquid was left. Imagine my surprise to find the tank dry! Let it suffice to say that I whispered things most uncomplimentary to myself. After this I enjoyed a week or more of immunity from annoyance. The motor in my car being water-cooled, my next trouble came from an unexpected source, for the continual jar occasioned by travelling over rough roads had loosened the joint in the water tank. The water leaked out and my motor ran hot, a condition of affairs which mystified me greatly.

Of course, I, like all owners of petrol cars, had any number of little bothers, such as a lubricator which insisted on flooding the parts to which it was connected, sparking plugs that wouldn't spark, etc., but for weeks I studied my machine, and am now perfectly familiar with each part and the relation that it bears to the others, and since I have gained that knowledge the troubles which at first seemed to pursue me have disappeared. I have a fixed routine to follow whenever the motor does not work. "Never get discouraged" has been my motto, and I strive to remember first that the motor has run and will run again.

Half the blame for trouble and annoyance which is saddled on the defenceless motor-car should by right be the motorist's burden. His ignorance of the things he should know, and not the manufacturer's imperfect construction, is the cause of its failure to work properly. The troubles that once seemed so serious to me are now all forgotten in the past, and I

of steel) where it comes at the top. This was due to moisture through rapid evaporation, and caused the needle valve to stick; but I overcame the trouble by fitting a valve made of German silver. This, in all probability, is "Country Mouse's" trouble.—Yours truly,

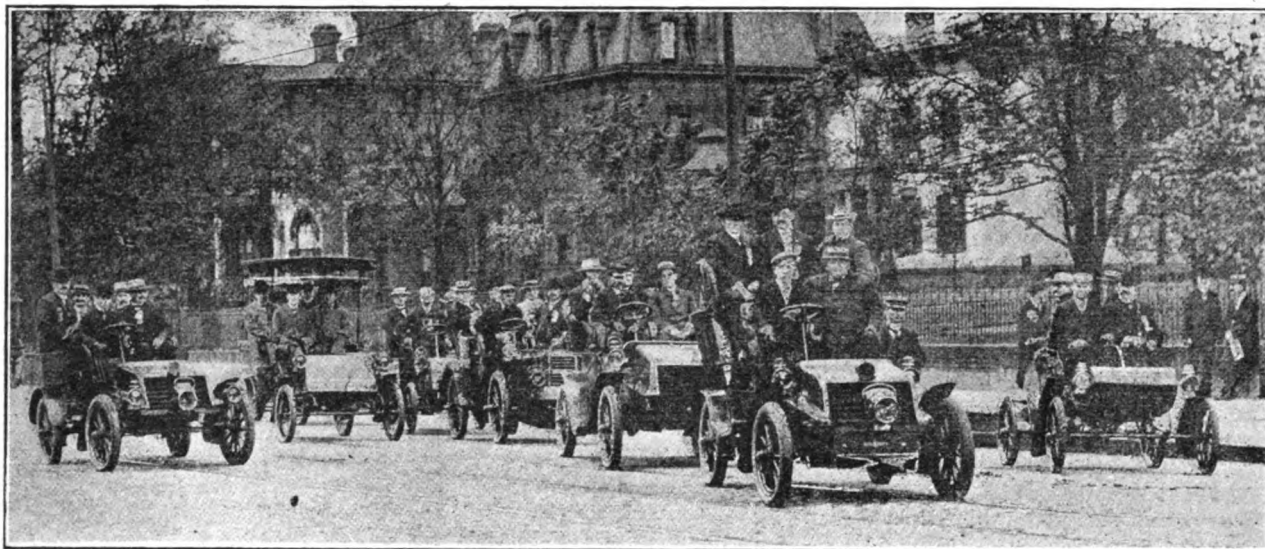
RIPLEY ROAD.

6-H.P. DAIMLERS.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—I notice in your correspondence columns in the last issue that someone is asking whether the old 6-h.p. Daimler can be converted into higher power with success. I can answer this query emphatically "Yes," if he will only apply to Mr. Frank Morris, of the Sandringham Motor Works, King's Lynn, for particulars of his new cylinders and pistons, which can be easily fitted to his present base-chamber. Nine months ago I purchased a set, and my son and self fitted the same easily and took the car on the road. A great improvement was at once noticed, which, I am pleased to say, steadily increased as the cylinders got their surface up. At that time I was conveying His Majesty's mails a distance of over forty miles per day, the load frequently weighing 30 cwt. to 35 cwt., in addition to a heavy box van body fitted in the place of the usual pleasure type. The engine did this most easily, which would have been impossible with the old 6-h.p. After this contract ran out I used the car as a nine-seated char-à-banc pleasure vehicle, and in this condition I find that it runs up-hill faster than it used to with the old cylinders. The cylinders are well made, have very large valves, huge water jacket, and maintain their power wonderfully.—Yours truly,

W. F. MILLER.



A Municipal Automobile Demonstration at Cleveland, U.S.A.

[Automobiles.]

have actually at times wished for something to go wrong to vary the monotony of riding along speedily, easily, and uninterruptedly for miles up hill and down dale. I have become the life-long friend of the petrol motor-car, and to all fellow amateurs and beginners I would say what experience has taught me to be true: Know your car, and it will be a source of pleasure and enjoyment to you as long as its bolts and screws hold together.—Yours truly,

TYMPANUS.

CHARGING ACCUMULATORS.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—In reply to R. W. Buttemer, kindly allow us to make the following corrections:—As the Boron battery for various purposes can be charged with solutions that contain no chromic salts, the term "merely" is scarcely applicable. Three cells of such a battery will charge two two-volt accumulators in series making one four-volt, not in parallel, or they will charge two four-volt accumulators in parallel. No resistance is required, as the cells are so constructed as to render it impossible to overcharge the accumulators. Potassium chlorate is always a bad addition, doing nothing but increasing the resistance.—Yours truly,

BORON BATTERY AND ELECTRICAL COMPANY.

CARBURETTOR TROUBLES.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—I have not had any such trouble before my notice such as "Country Mouse" has experienced, according to his letter in the last issue, but have had the upper end of the needle valve get rusty (when made

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—In your last week's issue one of your correspondents asked "to hear from any of your readers who had successfully converted or added to the power of the standard 6-h.p. Daimler car." For your correspondent's information I may say that the power of the 6-h.p. Daimler engine can only be added to by putting on larger-sized cylinders. The Daimler Company has designed a solid-head cylinder giving the same stroke as the 6-h.p., but with 94 mm. bore instead of 80 mm., which adds, as near as I can judge, an extra 1½-h.p. These new cylinders are fitted with a new plug capable of taking an ordinary electric ignition spark plug as well as platinum tubes. The conversion also necessitates new induction valve cover and exhaust valves, and, of course, new piston and piston rings. I know of a good number having been converted, and have never heard of anything but satisfactory results having been obtained.—Yours truly,

WALTER R. SHEPARD.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—Seeing in your paper an enquiry re increase of power of 6-h.p. Daimler, I may say that over a year ago I got from Mr. F. Morris, King's Lynn, a pair of his 10-h.p. cylinders, and attached them to the base of the 6-h.p. engine. I did all the work myself, and it made a very satisfactory job indeed. It increased the power fully 25 per cent., and I can now use the fourth speed, whereas before on same roads I could only use the third. I would strongly advise your querist to get a pair of these cylinders.—Yours truly,

JAS. EADIE.

[We have received a number of other letters recommending the Morris arrangement.]

THE TYRE QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The letter in your issue of the 21st ult. from a "Practical Motorist" has made me feel rather nervous. I drive a solid-tyred car, and have driven it just about 3,800 miles in the last year, at speeds that must average about fifteen miles an hour. In my car, which is a single-cylinder 8-h.p. two-seated vehicle, the steering is by a large screw on the steering-wheel column working a lever (either of brass or gun-metal), the long arm of which is 7 in. long and $1\frac{1}{2}$ in. by $\frac{1}{2}$ in. in thickness. After a universal joint, the pull or thrust is through a $\frac{3}{4}$ in. iron rod about 15 in. long. Will a "Practical Motorist" tell us what broke in his steering gear, and after what work did it fail? And am I to suppose that after a year's wear my steering gear is unsafe? I may add that I never intend to use pneumatics, so that if a car with solid tyres is not safe I must go back again to horses.—Yours truly,

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

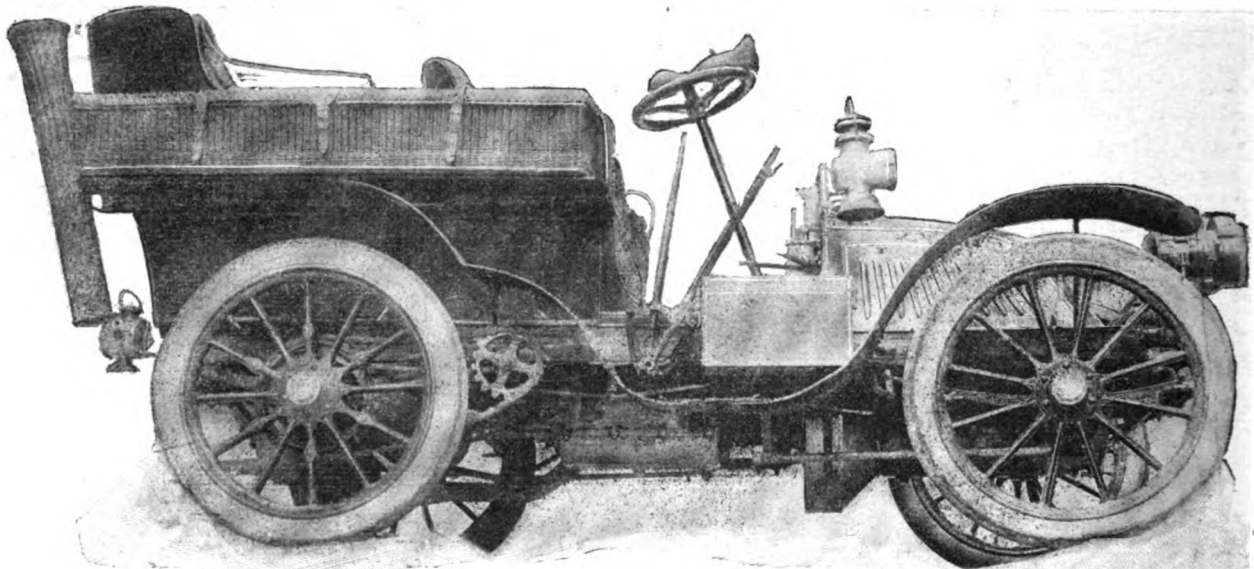
SIR,—With reference to the letter from "A Motorist," in your last issue, advocating the use and singing the praises of Cassell's non-puncturable bands, perhaps he will be good enough to state where such are obtainable, and if at a reasonable price. I read several motor journals every week, but have neither seen these bands noticed nor advertised, nor ever heard them spoken of. This seems strange if they are so good as "A Motorist" describes, for non-puncturable or non-slipping devices must, of necessity, intensely interest all motorists.

I am always hoping that a non-slipping device will be introduced at a price within the means of the ordinary voiturette owner; or that, when

Taxes and insurance	£	s.	d.
Boy at 16s.	10	0	0
Rent of stable	41	0	0
	15	0	0

I am quite satisfied with the change, and do not think I would, in any circumstances whatever, again keep a horse. Only on six occasions have I been stopped on the road by small troubles which I could not immediately rectify myself, and two of these were at the end of journeys of over 100 miles. I am my own mechanic. In my opinion, a motor-car is far preferable to a horse and carriage for general practice, as it does not tire, and mine is always at my command whenever needed, night or day. My stable is a minute's walk from my house. I can have the car upon the road without assistance in three minutes from the time I leave my door.

The points for consideration in the choice of a car by a medical man vary according to the depth of his pocket. If he be content with a light open voiturette, weighing under 10 cwt., run upon pneumatic tyres (or solid), and will look after the mechanical parts himself, keeping a lad simply to wash and to oil the car, the expense need not be greater than in my case. But if, on the other hand, he chooses a car weighing from 15 to 30 cwt., he would, if a busy man, be compelled to keep a mechanic. If he has pneumatic tyres and uses his car as much as I use mine, he will find his cost of running comparatively heavy—his tyre bill alone may be anything between £100 and £300 per annum. Not only are pneumatic tyres expensive, but to find one's tyre deflated by a puncture just when one has an urgent message is more than annoying. I have had only one puncture (in August, 1903), since January, 1901. My little car is to-day in perfect condition throughout—it is in far better order than when I first bought it nearly new. It is, of course, only a motor-perambulator as cars go nowadays, but I have averaged fifteen miles per hour from Birmingham to my house (running



The C.G.V. Car which threw up the least Dust in the Large-Car Class in the recent Tests on the Crystal Palace Track.

the patentees of the several simple and inexpensively manufactured, but highly-priced slip preventers now on the market have satisfied the requirements of their long-pursued *début*, it may be to their interest to cater for the wants of the man of moderate means, who cannot, at the present absurdly prohibitive selling rates, indulge in the luxury of using a small length of chain, or a piece of rivet-studded leather.

Perhaps, too, acetylene lamp makers may in course of time find a profitable return, at less exorbitant rates than now ruling, from the same short-pursed motorist, who may then be in the happy position of being able to add these few necessary adjuncts to his little car without expending some 25 per cent. or more on its prime cost.—Yours truly,

DE D.

[Replying to "de D.," Mr. J. W. Bottomley, and other enquirers, the Cassell non-puncturable band is obtainable from the Central Motor-Car Company, 111, Bothwell Street, Glasgow.]

MOTOR-CARS FOR MEDICAL MEN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a driver of a car in London for nearly three and a-half years, perhaps a few details may be of service to your readers. The car was a De Dion voiturette, $3\frac{1}{2}$ -h.p. The distance travelled was from 18,000 to 19,000 miles. The cost per annum was about £130 (as against £200 for single horse and carriage).

	£	s.	d.
Tyres, pneumatic	25	0	0
Petrol	20	0	0
Lubricating oil	2	0	0
Repairs	20	0	0
Sundries	5	0	0

time), "three up," and a large portmanteau on board. I have done a mile in two and a-half minutes. It will climb any ordinary hill. I have driven it up the West Hill, Highgate, and Aubrey Place, Holland Hill, W. It has twice refused to take me up Netherall Gardens—it went up empty. When buying a car, the medical man should buy one with a good family history, unless he proposes to experiment.—Yours truly,

G. WASHINGTON ISAAC, M.B. Edin.

THE DUST PROBLEM.*

By COLONEL R. E. CROMPTON, C.B., R.E., and Mr. C. W. S. CRAWLEY. THE Automobile Club, having decided in this year's Reliability Trials to award marks to cars for non-dust raising qualities, asked the writers and Captain Nugent, R.E., to devise a system of testing which would show the comparative amount of dust raised by each car under working conditions, with the nearest approach to accuracy.

The mere question of accurately estimating the comparative amount of dust raised by cars at first sight appeared difficult. After careful consideration we decided that photography offered the best means of obtaining comparative records, and, with the experience since gained, we now feel certain of it.

Our first rehearsals were for the object of ascertaining which kind of dust gave the most regular and trustworthy comparative results. We found that even a comparatively thick layer of sifted dust collected from the roads of the neighbourhood, even although it were perfectly dried, did not yield nearly so great a cloud of dust at any given speed as would have been the case if the same layer of dust had been on an ordinary road. We suggest that this is due to the fact that an ordinary road is full of depres-

* From a paper read at the A.C.G.B.I. on the 26th ult.

sions; that the dust collects to a greater thickness in these depressions, and that as the car plunges into them it pumps the dust out of the depressions with much greater force, and consequently disturbs it to a greater extent than could be the case on the hard concrete surface of the Crystal Palace track.

We therefore tried various grades of flour as a material which could be readily obtained of standard quality, and in the mill sweepings obtained from Lieut.-Colonel Mark Mayhew's company we found exactly what we wanted to give satisfactory results. Accordingly a half width of the track, for a distance of 60 ft., was covered with a layer of this flour to a depth of half an inch. Half of the track was left free of flour to enable us to run on this a pilot car fitted with speed-indicating apparatus, which could give the correct speed of the test runs to the competitors in turn. In this way we arranged that all the competitors should be on even terms as regards speed.

At this stage we think it as well to state briefly what those who had considered this matter believed would be the chief features which determined the amount of dust raised by a motor car when running at a given speed over a dusty patch of road. Previous to these trials, we were obliged to form our ideas on ordinary scientific lines. A motor-car passing over a high road disturbs the dust lying on its surface by its wheels. This disturbed dust is lifted and carried to a height or to a distance by the wind or by the air draught arising from the passage of the car. Motorists who are not very familiar with the laws which govern the movements of currents of air, and who have noticed that the passage of pneumatic tyres over a dusty road seems to suck out, as it were, the dust from the surface of the road, have jumped to the conclusion that the dust raising was probably caused by the nature of the tyres themselves, and have not paid much attention to the influence of the air currents produced by the car. One of the writers, however, happening to own a White steam car, which, although it is fitted with 800 mm. by 85 mm. pneumatic tyres, raises less than the usual amount of dust raised by other cars of the same size and weight, and when going at the same speed, noticed that the chief difference between this car and others is that the space for the air currents to pass underneath the vehicle is a good deal larger than that commonly given in other cars, and that this space was larger at the back than at the front end of the car. In further considering the matter, it was observed that the worst dust-raisers were cars which had tool-boxes or silencers fixed across the back of the car close to the ground, so as to leave a very small air exit at the back. In discussing this matter, it would be useful to use the words "air entrance" for the area in square feet measured between the wheels up to the height available for the air at the front end of the car, and "air exit" for the area measured in the same way at the back end of the car.

When a car is driven through still air at a speed of 20 miles an hour air is displaced by it in proportion to its cross section. Part of the air thus displaced passes over the top, part to the right and left, and part underneath the car, and it is with the part which passes underneath the car that we are most concerned in considering the dust question.

We are all of us familiar with the dust clouds raised by wind or currents of air sweeping along or across a dusty road. With some kinds of road dust quite a small breeze will raise the dust to a disagreeable extent. Sweeping over the surface of the road the breeze blows the heavier parts of the dust away from the prominences into the hollows, leaving the prominences bare of dust, but the lightest parts of the dust drift away in the form of a cloud to a considerable distance. If an ordinary horse-drawn vehicle comes along this road the horses' feet and the wheel tyres will disturb some of the dust that lies in the hollows. This dust is lifted only a few inches from the ground, is caught by the breeze, and forms a much larger cloud than the breeze can manage by itself. If a motor-car having pneumatic tyres comes along a still larger amount of dust is disturbed and lifted to a height probably in proportion to the speed, but in the case of the motor-car, even on still days, an artificial breeze or currents of air are set up by the passage of the car, and these probably play the most important part in throwing the disturbed dust to a great height and carrying it to a great distance.

As already stated, the most important of these currents of air is that which passes underneath the vehicle itself, and the side and back currents which are set up by the air rushing in to fill the vacuum caused by the passage of the car.

We have now to see how far these ideas are confirmed or falsified by the trials themselves. The first point we will consider is the effect of the tyres themselves. In a large number of cases the size of the tyres have been noted, and the general conclusion we have arrived at is that the difference caused by the tyres themselves is not very marked. It is undoubtedly the case, all other things being equal, that 120 mm. tyres will raise more dust than 90 mm. tyres, but this extra quantity does not affect the total cloud of dust to nearly the same extent as comparatively small alterations in the front wings or in the air entrance and exit.

We are indebted to Captain Brady, R.E., for the following clear explanation of the cause why all elastic driving tyres, more particularly pneumatic ones, lift the dust:—Motor-cars are propelled by a stress transmitted through their tyres. When the car is at rest the tyres are compressed vertically by the weight. When the engines apply a stress of starting, the car, as the driving wheels commence to turn the tyres, will be strained tangentially, the rubber in front of the point where the tyre touches the ground will be compressed, and that behind it, where it leaves the ground, will be stretched in both cases in a direction parallel to the rim of the wheel. As the car moves forward the particles of the tyre in front as they come under the wheel are always brought into a state of tangential compression. The roughness of the road surface and the driving power of the engine

prevent these particles from springing back until the forward movement of the car raises them from the ground. At this time they suddenly change their state of tangential compression for one of tangential tension, i.e., they move rapidly backwards along the rim to recover their original position. In doing this the surface of the tyre scrapes or sweeps the road surface and carries up with it the lighter particles of the dust. This difference of the speed of the portion which is thus alternately compressed and stretched is the speed at which the tyre sweeps the dust to the rear. It will be noticed that small stones behind the wheel will be overturned, and all the finer particles, including the dust, are projected backwards and upwards. In this respect the tyre is worse than a sweeping brush, which overtakes and smothers some of the dust it raises, but the tyre retreats and leaves the dust free to rise.

The small radial lines shown on the tyre, and which divide it into equal portions, resemble the bristles of a hair-dresser's machine brush. They stand out radially in all the unstrained parts of the tyre, but are bent forward as they approach the ground in the compressed parts, and again recover their radial position in the stretched part. The distance between their stretched ends is a measure of the speed of particles of tyre. It is quite probable that in the case of deep tyres, when the driving wheels are turned at a speed which, if rigid, would be only 20 miles, the tyre particles sweep the ground at a rate of 7 miles an hour quite apart from their rolling velocity of 20 miles. As driving wheels revolve their tyres can only obtain the necessary resistance for driving the car by sweeping away the more yielding parts of the dust until they meet with dust particles coarse enough to obtain a grip of the road. We may say, therefore, that the dust-sweeping properties of the tyres depends on the elastic sensibility of the surface of the tyre; secondly, on the width of the tyre which is applied to the road; thirdly, on the driving stress applied; and fourthly, on the speed of the driving wheels.

One point we should like to make very strongly, and it is against all previously conceived ideas. *A low car is not necessarily a dusty one, nor is a high car necessarily dustless.* If the bottom of the car is a tangle of gear and boxes, especially if smaller behind than in front, that is bound to be a bad car. We think it quite possible that many a dusty car could be much improved, if not made practically dustless, by the use of a plain straight sheet. But there is a further cause of dust—the air rushing in after the car has passed. This is in some cars negligible, in others very serious.

We sum up our final results as follows:—

Hard tyres are better than soft.

Narrow tyres are better than broad.

Neither have a preponderating influence.

Flaring mud-guards are probably bad, especially if they come low down.

Cars which are low underneath are worse than cars a long way off the ground.

But smoothness of bottom shape and absence of forward coning are infinitely more important.

There is strong evidence that it is desirable that the car should slope upwards towards the back.

MOTOR-CAR ACCIDENTS.

FRANK CECIL COLLIARD surrendered to his bail on Saturday, at the South Western Police Court, to answer the charge of furiously driving a motor-car and causing bodily injury to Henry Headhouse, a milk carrier. The magistrate committed the case for trial, allowing bail as before.

At Hounslow, Dr. Gordon Hogg has held an inquest upon the body of Mr. Siegmund Loewe, who was fatally injured in a motor-car accident. The deceased gentleman was a director of Messrs. Vickers, Sons, and Maxim. John Gooding, driver of the car in which Mr. Loewe was riding, said that they were proceeding from Maidenhead to Hounslow. When in Bath Road, near Wellington Road, another car with a bright light passed them. Witness then saw a young woman (Miss Coxall) running across the road in front of witness's car, which was proceeding at the rate of ten or twelve miles an hour. Suddenly she stopped and eventually turned back again. In order to avoid running into her witness turned towards the pavement, and came into contact with the kerb. He applied power to turn the car back, and it ran into a tree and a light fence. Witness, not knowing that Mr. Loewe had been thrown out, went to assist the girl, who was knocked down, and on returning to the car found Mr. Loewe on the path. The jury found that death was accidental, and they exonerated the driver from all blame. They added a rider expressing the opinion that the power of lamps used on many cars was greatly in excess of what was necessary.

THE MOTOR-CAR ACT.

ABERDEEN.—At a meeting of the Aberdeen magistrates with reference to the regulations under the Motor Car Act, the general opinion has been expressed that automobiles should not be allowed to run within the city at a speed greater than ten miles an hour.

YORK.—The Sowerby Bridge Urban District Council are asking the County Council for a six-mile limit for motor-cars through their district, and the Luddenden Foot Urban District Council (their neighbours) are asking for a ten mile limit through their district.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
London, Marlborough St.	L. Waller, Dorset Square, W.	21	40s., etc.
Windsor	J. Muggleton	—	£2, etc.
"	E. F. Chapman	—	£2.
"	G. West	20	£2.
Slough	V. Whitehead	24	£5, etc.
Barnet	L. Stroud, Finchley	26	Dismissed.
"	R. Rossognol, Hampstead	—	£1, etc.
"	*A. Sahlin, Hampstead	—	£1, etc.
Thorpe (Clacton)	A. Webb, Chichester	30	£5, etc.
Shoreham ...	J. T. Taylor, Worcester	24	£5, etc.
Guildford	R. Ogilvie, Piccadilly, W.	25	£4.
"	*A. F. Harmer, Wimbledon	24	£3.
"	E. Checkley, Notting Hill	32	£5.
"	G. C. Halahan, Chiddingfold	—	Adjourned.
Reading	Clifton Robinson, 119, Piccadilly, W.	30	£4.
Mortlake	F. Good, St. James', W.	26	40s., etc.

* Indicates Motor-Cycle Case.

AT Guildford, Edwin Checkley, of Notting Hill, was summoned for two offences, motoring at an excessive speed, and further with driving his car backwards for a greater distance than was requisite or necessary for public safety. P.S. Stevens stated the date was the 15th inst., and the speed thirty-two miles an hour. After being stopped defendant, instead of turning the car round, backed right up to the Royal Huts from Tower Road, a distance of 268 yards, at the rate of eight miles an hour. Fined £5.

JAMES E. HAMMOND, manufacturer, Baildon, whose case was adjourned from the previous week's court, has been summoned at Otley for driving his motor-car at a greater speed than 12 miles an hour. Mr. Neill, Bradford, appeared for the defendant, and said that Mr. Hammond had driven his car over 7,000 miles, and was certain that he was not driving at more than 6 miles per hour when the police stopped him. On the previous day he had at Bingley one of the balls in his off front wheel broken; this had taken off the case hardening from the spindle of the wheel, and he had to send for a mechanic from the Elsworth Automobile Company to take the car to their depot for repair. It was found that it would take at least two days to make a satisfactory repair; but Mr. Hammond was specially anxious to have the car on the Sunday (the day of the charge). So the spindle on which the car runs was taken out and turned over, to bring the damaged part to the top, and two new balls inserted. Mr. Hammond was warned that this was only a temporary repair, and that if he did take the car away for use he must use very great care and not drive at any great speed, as, if the balls dropped into the damaged part of the spindle and locked the wheel, the consequences might be serious. Mr. Neill asked the magistrates if they considered that when a gentleman was driving his wife and two lady friends out in his car in that condition, was it reasonable to expect that he would be driving at an excessive speed? Mr. Hammond, in passing the Swan Hotel, about fifty yards from the place where the signal was given, almost stopped his car to ask some motor people who were standing there with a disabled car, if he could give them assistance. P.S. Bell stated that he was in the Pool Road, Otley, when he received a signal of the approach of a motor-car. He timed it with a stop watch over a measured quarter of a mile, and found that Mr. Hammond had covered the distance in 45 secs., or at the rate of 20 miles an hour; he then gave the signal to another constable further down the road to stop the car. He then went up to the defendant and told him that he was driving over the limit, to which the defendant replied that he did not think he was. The constable said that the signal was given by a white handkerchief being shown. After police evidence had been given, Mr. House, of the Elsworth Automobile Company, stated that he had warned the defendant against driving at a high speed without doing so at great risk. The Inspector of Police asked the last witness if the defendant could not have driven the car at a greater speed than 12 miles per hour. The witness answered: "Yes; at the risk of his neck." Mr. A. Fattorini, of Bradford, spoke as to the unreliability of the watch, and the difficulties of timing accurately, and said that the watch used by the constable would not be accepted as a timing instrument by any sports' committee, and that the method of timing was absolutely unreliable. After consultation, the magistrates dismissed the case.

BRITISH AUTOMOBILISM.

AT the annual dinner of the British Automobile Commercial Syndicate (Limited), held at the Hotel Cecil, London, on the 26th ult., the Earl of Shrewsbury and Talbot occupied the chair, and announced that he, in partnership with M. Clement, had decided to commence the building of

the cars in this country, transferring the chief part of their business from French ground. Works were in course of erection in the West of London, and it was intended on their completion to produce the cars in England. For some time the cars would be sent over in the rough and finished here, but ultimately it was hoped to build them entirely in London, and with English labour. Owing to M. Clement having given a French firm the option of using his name, the cars made in this country would be known as the Talbot cars. His lordship hoped that they would soon be in such a position to offer work, and that many Englishmen who contemplated going to the colonies would be kept at home.

M. Clement, in responding to the toast of his health, supplemented Lord Shrewsbury's remarks by stating that he had been over the works that day, and that when completed they would furnish one of the finest engineering factories in the world. He intended to give the concern the benefit of his large experience, but, although a Frenchman would be at the head of affairs, he hoped that so far as possible British labour would be employed.

The toast "Success to Automobilmism" was proposed by Mr. Charles Cordingley, who said that automobilists generally were content with the conditions that had prevailed up to the present. The agitation to repeal these had been unfortunately fostered, and hence new regulations were about to be introduced. Motorists had no desire to go as fast as some of the public imagined, and so long as they gave a reasonable consideration to other users of the roads they had nothing to fear.

The Earl of Shrewsbury, in responding, said that if there had been no racing people might have been content with the old conditions of a 3-h.p. motor weighing nearly two tons. The first automobile seemed to have averaged about 1-h.p. per half ton. The latest type of 10-h.p. averaged about 1-h.p. per 17 lb. He mentioned that for the Gordon Bennett race in Germany the entrance fees alone were £200, and the French firms who had entered would have to spend £190,000 for the three cars which would run in the race as representing France. Each car, he calculated, would cost nominally £65,000. He suggested the formation of a body independent of the trade, to settle disputed points in automobilism.

IS A MOTOR-QUAD A CARRIAGE?

AT the Grimsby Police Court, John Mason has been summoned by the Inland Revenue authorities for keeping a carriage without a licence on July 29th. It was explained that the defendant was in the possession of a motor-quadracycle. He had been warned by the authorities that he required a licence for the vehicle, but had not taken one out for it, contending that, as he used the motor for purely trade purposes, he did not require a licence. He had bought the machine to sell again, and on the date in question had taken it to show to an intending customer. The magistrates decided to convict, and fined Mr. Mason £2 2s., the Excise to grant him a licence for the vehicle.

POLICE TRAPS.

AT Shottermill the police have a measured distance of 176 yards. In Rock's Lane, near Barnes Common, the police have a measured far-long—useful in trapping motorists coming from the direction of London. About eight miles from Oxford, on the Banbury road, is a well-designed trap for motorists. In the High Street, Christchurch, telephonic communication has been established in connection with a trap.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.


VOL. V.]

LONDON, SATURDAY, DECEMBER 12, 1903.

[No. 249.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE roadside experiences related at the meeting of the A.C.G.B.I., on the 3rd inst., were a kind of ancient history, and many of the incidents retold would be impossible now. As Mr. Lyons Sampson, who presided, observed, motor-cars have been so much improved that it is difficult to realise what the pioneers had to do with the vehicles then available. Mr. W. S. Crawley gave some reminiscences of an Irish tour; Mr. H. J. Swindley confessed to his lack of experience, save with an early 3½-h.p. car that would go no further

than Barnes Common; Mr. W. Beaumont recalled early days, and Mr. E. W. Peall related a number of incidents in connection with the 1900 anniversary run, in which he drove one of the old Mors dog-carts. It took them hours to get started, and when at length they did get the engine going they were so pleased that they started off without having anything to eat. They got as far as the other side of Guildford without a stop, but after that the car stopped every twenty yards or so. Finally, at the end of the run, the car had to be pushed into a stable by a number of men. He brought the same car home a few days later in torrents of rain and with the transmission belts constantly breaking. The petrol feed went wrong, too, and he did the last part of the run with petrol simply pouring upon the road. Finally, he sold the car, and the last he saw of it it was being towed behind a horse.

Three Miles an Hour.

MR. SAMPSON proposed a vote of thanks to Mr. Rolls, which was seconded by Mr. Linton Hope, and carried by acclamation. In responding, the speaker of the evening said he was lucky enough to have a repetition of an old experience recently when taking a Mors racer from Havre to Paris. The car was able to do eighty miles an hour, and naturally he thought they would not take long over the journey, but as events turned out it occupied four days. The first day was spent fighting the *douane*; the second day all went well for two or three miles, and then a lot of little troubles cropped up. First, the horn went wrong; then something else happened, and ultimately, near the same village as on the original journey, he found one of the cylinders giving up, and had to sit down and wait until the proverbial tramps came along and pushed the car into the village. He got the car fixed up, and got away next day, and, after having a series of tyre troubles and the like, spent the night at Mantes. The following morning they thought they would have some speed trials. The hotel manager told them of a suitable stretch of road just at the end of the boulevard, and they took him along to show them where. The road was unsuitable, and they went out ten miles further, but there was too much traffic; finally, they took that man seventy miles out in the country, and had to take him back again to Mantes at three o'clock in the afternoon. They reached Paris next day, having

done the journey from Havre at an average speed of about three miles an hour, thus ending an adventurous journey.

A Military Tractor.

FOLLOWING upon its experiments with motor tractors for military purposes, the Government offered a prize for a suitable vehicle capable of travelling forty miles, with a gross load of twenty-five tons, without renewing fuel or water. The conditions were very stringent, and only one firm, Messrs. Hornsby and Sons, of Grantham, entered for the tests. They have been awarded the prize of £1,000 for a machine constructed on the lines of an ordinary traction engine, propelled by an oil motor of the Hornsby-Akroyd type. It weighs under thirteen tons, and in the trial covered fifty-eight miles without renewing fuel or water, thereby gaining an additional bonus of £180, or £10 for every mile over the forty stipulated.

The Yorkshire Club.

ON the 4th inst. the Yorkshire Club held its fourth annual dinner, the occasion affording opportunity for Leeds and London automobilists to exchange views on some matters of current interest. There are other automobile clubs at Halifax, Sheffield and York, so that the title Yorkshire is thought by some in the county of broad acres to be rather too wide for what is, in many respects, a district organisation. But, as Mr. H. A. Jones hinted at the annual dinner, some kind of union may yet be formed for all the clubs in Yorkshire, giving each its district individuality and the united body all the strength that Yorkshire possesses in other phases of sport.

Lights on Vehicles.

THE Bradford police have lately been active against motorists travelling with insufficient lights, and in other districts, too, severe have been the comments made upon those driving motor-cars upon which inadequate lighting arrangements have been made. We wish local authorities and the police would be equally severe upon the drivers of horse-drawn vehicles who take their animals upon the highway after sunset with no lights at all. At Gateshead, for instance, the subject has been discussed by the Corporation, which recently introduced new bye-laws on the subject. These have been administered by the local police, and at the last meeting of the municipal authority some members expressed disapproval of the prosecution of people for not having lights on their vehicles after dark. The Mayor thereupon gave an assurance that the new bye-law would not be carried out so rigidly. What, then, is the use of a bye-law?

Danger after Dark.

IN a letter on the advisability of using acetylene lamps on automobiles, Mr. Hugh Hughes, of Reigate, emphasises the necessity of vehicles being well lighted. He was recently driving a car along the Brighton road, and going steadily at about fifteen or sixteen miles per hour, when, on coming to a dark and overshadowed part of the road, he slowed

down to about ten miles per hour. Well it was that he did so, for right in front of him was a four-wheeled cart with no light whatsoever (although it was fifty-one minutes after lighting-up time), and more in the centre of the road than at the side. Mr. Hughes had not a "dazzling light" on, only his two paraffin side-lights, which were just enough to show up the cart when about three feet off it. He only had time to throw out the clutch and swing round to the right of the cart and along the pathway and pull up. He stopped, got out and took the man's name and address, and summoned him; he was fined 10s. and costs. Now, suppose the motorist had smashed into him, what compensation would he have got? He determined, after that little escape, to use a head-light, although he had always been against the use of them, because of the brilliancy to anyone meeting them.

In Surrey Again.

MOTOR prejudice is a long time dying in Surrey, and at the Woking Bench last week there was a recrudescence of the complaint. Sergeant Jarrett was again to the front with his alleged speeds of 21 miles an hour. Two defendants had only attained a speed of 18 and 19 miles an hour respectively, and they were fined £3—the customary amount at the Woking Court. The fact that such speeds will be legalised within a few weeks did not affect the decision. Sergeant Jarrett's stop watch was in evidence, and that was enough for Sir William Chance and his colleagues, Colonel R. Phayre, Colonel D. E. Gouldsburn and Mr. F. E. Eastwood.



The Prison Van of the Future. (Das Schnauferl, Munich.)

Public Bodies and the Act.

It is becoming increasingly evident, judging from the discussions which have taken place in the various public bodies of the kingdom, that a marked hostility to the motor-car characterises the rural districts, and that a feeling is growing among the urban authorities that the cost of maintaining roads should fall wholly upon the national exchequer. The latter position has been brought about by the enormous increase in the upkeep and general maintenance of roads during the past five years. In scores of districts this cost has been more than double, and the ratepayers are loudly complaining. The agricultural districts declare that this increase is wholly due to the motor traffic in its various forms, and the problem now before some of our County Councils is whether the roads are to be kept up to the standard of motor-cars and cycles, or just sufficient for agricultural purposes. In more than one County Council this question has been discussed with a view to it being sent to committee, and it seems likely before long that other methods of road repair and maintenance will be adopted in view of the new conditions which now prevail. But the most striking feature of the question of motor-car traffic is that which

relates to speed. There seems to be an almost universal demand that only the minimum speed shall be allowed, and, as if that were not enough, some district councils have expressed the view that motor-car owners should bear the cost of erecting signposts. The Act gives the local authorities plenty of scope, and their discussions and decisions show that they have availed themselves of every particle of power which can be used to restrict motor-car traffic.

The Hertfordshire Club.

At a meeting of Hertfordshire motorists held on Thursday of last week it was resolved to form an organization to be known as the Hertfordshire Automobile Club. The objects with which this club has been formed are to look after and safeguard the interests of its members, particularly in view of the provisions of the Motor Car Act, which comes into force on the 1st of January next; to secure fair play in cases in which motorists may be interested; to defend before the courts such cases as may show a reasonable chance of success; and generally to further the cause of automobilism in the county. The social side of automobilism will be an important element in the new Club, the provisional committee of which has been formed as follows:—Messrs. Noel B. Kenealy (chairman), E. Kenealy, W. James, A. Hunt, C. Wood, J. T. Gardner, and Dr. Gruggen. Hertfordshire motorists wishing to join are requested to communicate with the Hon. Sec., Mr. W. Whittall, Acme Studios, Watford.

The February Conference.

ALREADY the engagements of motorists for the new year are beginning to appear a lengthy list. Now it is announced that the conference between the A.C.G.B.I. and the provincial clubs will be held on February 15th, and at their next meetings these important organisations will appoint representatives to speak and vote on the matters to be brought forward. The subject is complicated by the fact that one half of the clubs have already signed the affiliation agreement; the other half have declared their intention of not entering into association with the central club on present terms. Should the latter secure concessions, the agreements already made by the former section will have to be revised; otherwise a sense of preferential treatment will militate against the good feeling that must be encouraged if the movement is to go forward with one powerful authority. Undoubtedly many of the provincial clubs feel that they have been somewhat ignored in the past and that the Club has sought to apply its rules in the spirit of the Medes and Persians.

Hill Climbing Competitions.

At the last meeting of the Salop County Council Sir Thomas Boughey called attention to an automobile contest held recently at Hermitage Hill. He explained that as he was not a member of the Standing Joint Committee, he had no opportunity of raising the question elsewhere. Some twenty or thirty cars were racing up the hill, he said, and he wanted to ask on whose authority that racing took place, as the chairman of the Roads Committee had informed him that he knew nothing about it. He also asked how many police were taken from their ordinary duties to keep the road clear. Mr. Southwell explained that it was not motor racing but hill climbing, a very different thing. Major Heber Percy said Sir Thomas Boughey gave him notice of the question, and he had obtained a report on the competition. His information was that it was a hill-climbing contest arranged in Wolverhampton, and held at Hermitage Hill on October 24th. The competition lasted from one o'clock to 4.30. The arrangements were exceedingly well carried out, every care being taken to prevent obstructions or inconvenience to the public. The local police were on duty, but no extra expense was caused to

the county. There were no accidents and no complaints during or after the competition, nor any ground whatever for police interference. Subsequently the Hon. Secretary of the Wolverhampton Club had an interview with Sir Thomas Boughey, and as a result he expressed himself friendly disposed towards the Wolverhampton and District Automobile Club, and that he would have pleasure in placing at their disposal a road upon his estate for competition purposes. In such ways the provincial clubs can do much good for the movement.

Prospects of Automobilmism.

At the second general meeting of the session of the graduate section of the North-East Coast Institution of Engineers and Shipbuilders, held at the Institution Lecture Hall, Newcastle, Mr. W. H. Waddingham presided, and an interesting paper was read by Mr. A. E. Berriman on "The Future Prospects of Automobilmism." He showed the many vocations for which the motor-car was suitable, and illustrated the practicability of its application in the principal traction schemes. On the question of the speed limit he showed that it was evident that any system

from Portsmouth, and that the officer commanding the defensive force required a rapid survey of the country about Cobham, on the main Portsmouth road. The actual work of reconnaissance was carried out by six of Colonel Bosworth's military pupils in three motor-cars, which left Cedar Court, Roehampton, at 11.30 a.m. On reaching Fairmile at 12.30 p.m., the ground to be reconnoitred was quickly divided into three sections, two young officers, with a motor-car, being detailed for work in each section. The work then commenced, after orders had been issued for rendezvous, at 2 p.m. The several reconnoitring parties having reached the rendezvous at the appointed hour, the sketches and reports were collected and later "joined up," with the satisfactory result that in three hours from the start a piece of ground about three square miles in area and fifteen miles distant from the starting point had been sketched and reported upon with sufficient accuracy to enable the officer in command of the defensive force to select his positions. This rapid piece of reconnaissance work was in itself a creditable performance. The novelty of the idea as an instructional method was due to Colonel Bosworth, and it was well sustained and carried out by his pupils.



The 24 h.p. Wolseley Double Tonneau, built for the Maharajah Gooch-Behar. This car is painted Indian red, lined with green, upholstery in green, and leather to match, the finish throughout being of a specially high quality.

of limiting speeds could have no useful effect, and would only increase the mistrust which was at present so apparent among a certain class. Undoubtedly much of the present antagonism had arisen through a lack of reciprocal courtesy among the users of their public highways in general. On the question of motor-cars versus trams and omnibuses in large cities he was of opinion that an extensive and well-organised service of small cars having a seating capacity for say eight or ten passengers would prove of the greatest use to the public, and provide the best financial results for the company owning them. The advantage of motor vehicles superseding all other horse-drawn traffic in towns was more obvious in that there was no alternative between the horse and a self-contained motor for the propulsion of delivery vans and other commercial vehicles.

Military Reconnaissance with Motor-Cars.

An interesting experiment with the primary object of testing the usefulness of motor-cars in the instruction of modern methods of military reconnaissance has just taken place. The reconnaissance was organised and conducted by Colonel Bosworth under the supposition that an enemy was advancing

Motor Volunteers.

On Tuesday the first annual dinner of the Motor Volunteer Corps was held at the Trocadero, London, under the presidency of Lieut.-Colonel Mark Mayhew. The toast of "The Corps" was proposed by Major-General Hildyard, who referred to the corps as the first organised body of motor soldiers raised in Europe. He testified to the admirable services rendered by the members of the corps in conveying the officers to and from the scene of operations, and to the saving of time which resulted. Major-General Hildyard had been much struck with the good work done by motor-cyclists at the manoeuvres, and concluded by making an important announcement with regard to the injury done to tyres during the manoeuvres. Lord Roberts had given the matter consideration, and the War Office had sanctioned compensation being given in such cases. In response, Lieut.-Colonel Mayhew said that if the corps were given a chance of doing more at future manoeuvres they would prove that the motor-car was really a useful thing for military purposes. Possibly they might be permitted to take their places in the combatant ranks. To the toast of "The A.C.G.B.I." given by Captain Skeffington-Smyth,

Mr. Roger Wallace, K.C., responded, and later "The Guests" was proposed by Captain Arthur Lee, M.P., Major-General Oliphant making response.

On the Continent.

It is appropriate that at a time when the leading British automobilists are on the Continent there should be issued Mr. A. R. Sennett's "Fragments from Continental Journeys." This is published by Messrs. Whittaker and Company and reveals Mr. Sennett's literary gifts in a very favourable light. Walking tours among the Alps, a trip in the valley of the Rhone, journeys around Lausanne and Geneva, in the St. Gothard Pass, a peep into Bavaria, and a visit to Monte Carlo give the traveller plenty of opportunity for retelling the legends that have given interest to many Continental old-world places. In these days of uncertain weather, when the car is generally in the garage, such a book as this is delightful reading.

The Founders' Dinner.

ON Wednesday evening of last week—too late for mention in our issue of the 5th inst.—a dinner of Founder members and members of the Club and House Committees of the A.C.G.B.I. was held at the Piccadilly headquarters. It proved a pleasant reunion of many of the pioneers of the automobile movement, about a hundred gentlemen taking part. In addition to many speeches reminiscent of the early days of the Club and the various stages of its progress, a musical programme was provided, and after the dinner a series of interesting automobile pictures was shown by means of the lantern. Among the toasts were "The Founder Members," who numbered 240, "The Prosperity of the Club," "The Club and House Committee," "The Press," and "The Chairman." In proposing the toast of "The Press," Mr. Wallace emphasized the importance of the services rendered to the Club and the movement generally by the automobile journals, coupling therewith the names of Messrs. C. Cordingley, S. Spooner, and H. J. Swindley. In responding the former pointed out that although sometimes they had to suggest something contrary to what the Club was carrying out, they had at all times been actuated by the same motive—the common good of automobilism.

A 14-H.P. four-seated "Dennis" car is being built for the Grand Duke Michael of Russia.

In our description of the Coronet petrol motor last week the cylinder bore was given as 3 7-16 in. This should have been 3 3-16 in.

A PROPOSAL to provide a steam fire-engine for Edinburgh has been referred back to the Plans and Works Committee of the Edinburgh Town Council.

THE request of the County Surveyor of Dublin County for a motor-car to assist him in the inspection and superintendence of motor-car traffic in his district has been passed over by the Dublin County Council.

THE mention of the word "liquidator" in connection with the Collier Twin Tyre Company was officially necessary in connection with the taking over of the parent concern by the Collier Tyre Company, Limited, otherwise it had no significance.

DURING a meeting of the Essex hounds last week a groom was mounting a horse when the animal bolted, and he was thrown, receiving such injuries that he has since died. His master's motor-car was requisitioned to convey him to the local cottage hospital.

MESSRS. J. E. HUTTON, LIMITED, who, by the way, are establishing large works at Thames Ditton, have sent us a copy of an elaborate catalogue they have just issued of the new 8 nominal h.p. Panhard car, which should prove a popular type next year. So convinced are Messrs. Hutton of the future of the new 8-n.h.p. model that they have placed an order with the makers for no less than 150 cars.

THE MOTOR-CAR ACT.

THROUGHOUT the country the local authorities are busily engaged in registering motor-cars and licensing drivers in accordance with the terms of the Motor-car Act, which comes into operation on the 1st prox. Many of the governing bodies, including the London County Council and the Liverpool Corporation, have agreed that, having regard to the various ways in which the identification mark for motor-cars and motor-cycles may be indicated, they will not issue identification plates. Others, including the Leeds Town Council, have decided that, in the first instance, these plates will be provided at the expense of the Watch Committee and charged to the applicants at cost price. Of course, if the owners of the cars desire to have the number painted on their vehicle in preference, the plate would not then be issued.

Some interest attaches to the names of the first gentlemen in the various towns to register their cars under the new Act, and we take the earliest possible opportunity of giving some of these, the letters following the addresses being the Index Letters assigned to the respective towns. The list will be continued next week, and we invite the assistance of our readers in making it complete—so far as the first registered car in each county or town is concerned.

BIRKENHEAD.—Dr. T. S. Floyd, J.P., 16, Devonshire Road, Birkenhead, C.M.1.

BOURNEMOUTH.—Mr. Henry Newlyn, J.P., of the Royal Exeter Hotel, Bournemouth, an ex-mayor of the borough, E.L.1.

CANTERBURY.—Dr. A. Channing Pearce, of Chatham, near Canterbury, F.N.1.

COVENTRY.—Mr. C. K. Welch, Park House, Warwick Road, Coventry, well known in connection with the Dunlop-Welch type, D.U.1.

CROYDON.—Mr. E. M. Preston, Shirley Hurst, Shirley, near Croydon, B.Y.1.

HALIFAX.—Dr. Crossley Wright, C.P.1.

LIVERPOOL.—Mr. A. G. Lyster, engineer of the Mersey Docks and Harbour Board, K.1.

NEWPORT MON.—Mr. Geoffrey L. Watson, D.W.1.

SHEFFIELD.—Mr. S. E. Fedden, 305, Fulwood Road, Sheffield, W.1.

SOUTHAMPTON.—Mr. R. E. Lauder, 158, Above Bar Street, Southampton, C.R.1.

SWANSEA.—Mr. A. Randall Lewis, 8, Mirador Crescent, Swansea, C.Y.1.

WALSALL.—Mr. C. H. Gameson, 51, Highgate Road, Walsall.

WARRINGTON.—Mr. Edwin Woods, managing director of the Longford Wire Company, Ltd., E.D.1.

At Cardiff no cars had been registered up to Wednesday last.

In connection with the licensing of drivers, it is of interest to learn that the Town Council of Liverpool are providing a case in which the license is enclosed, the latter being printed on parchment. The size of the license issued in that important centre has been reduced to the minimum, so that the case in which it is enclosed may be carried in the waistcoat pocket without inconvenience.

THE Isle of Wight Motorists' Association has become affiliated with the Motor Union.

WE had a short run one morning last week on the first of the new Brooke light gear-driven cars, with Mr. Mawdsley Brooke at the wheel. The vehicle ran extremely quietly and smoothly, and we hope to refer to it again in a later issue.

MESSRS. HUDSON AND KEARNS have issued their Diary Blotting Pads for 1904. That known as the Bankers' edition contains a useful date remembrancer on the right of a blotting pad of good size, while to the left is a book diary interleaved with blotting paper. This latter excellent feature is also introduced into the styles known as No. 8A and No. 6. The pads and diaries of this firm have lain on office desks so many years that their merits have become generally known.

The Paris Motor-Car Exhibition.



Le Grand Palais, Paris—The Locale of the Exhibition.

THE sixth annual Salon d'Automobiles was opened with great ceremony on Thursday morning, and will remain open until Christmas night, during which time it will be visited not only by motorists and motor traders from all parts of France, but also from Great Britain, Germany, Belgium, Holland, Denmark, Austria, Italy, Switzerland, and even the United States. To say that the Grand Palais, in which the exhibition is again being held, is full does not adequately express the condition of affairs. Every inch of space that is available has been taken up, and, notwithstanding its many advantages, it is clearly to be seen that the huge building at the corner of the Champs Elysees and the Pont Alexandre III. is now too small for the important automobile industry. All the week a vast army of men has been busily engaged in putting the finishing touches to the show, and it is only with difficulty that any particulars of the new models has so far been obtainable, while on the opening day the crowd was so great that the position in this respect was in no wise improved. As usual, the leading French makers have vied with each other as to who shall have the best-decorated stand, the result being that the general aspect of the show is more brilliant than ever. It would seem as if a kind of order had gone forth that the stands should be reproductions of celebrated buildings. Thus the *motif* of the De Dietrich Company's stand is the colonnade of the Madeleine, that of the Darracq Company represents somewhat the portico of the Cathedral at Seville. Prosper Lambert has copied the famous colonnade of the Parc Monceaux one of the most fashionable parks in Paris, while the stand of La Société Automotrice is on the lines of a Greek temple. One feature of the Salon is the steadily growing number of foreign exhibitors. Great Britain has this year five exhibitors of cars, the Motor Manufacturing Company, Limited, the Hozier Engineering Company, Limited, and the Electromobile Company, Limited, sharing the honours with the Wolseley and Napier Companies, while the French tyre and electrical accessory firms have new competitors in the Collier Co., the Dunlop Co., and the Electric Ignition Company. Naturally one's first desire is to visit the stand

of the Panhard and Levassor Company; but, as this desire was shared by thousands of others, I was not able to get sufficient details of this well-known firm's exhibit in time for this issue and must therefore hold over a report until next week.

Quite a big display is made by the Peugeot Company, which, for the 1904 season, is making no less than five different types, in addition to the well-known 5-h.p. Baby Peugeot, whose destinies are controlled by Messrs. Friswell, Limited. In addition to the 5-h.p. (Fig 1), the new features were given in a recent issue, a 6½-h.p. single cylinder car, with cardan shaft transmission, is being made. An interesting new model is that fitted with a double cylinder engine of 7-h.p., which should meet with the approval of those whose preference lies towards two cylinders. This car, like the 5-h.p. and 6½-h.p. types, has a cardan shaft driving through bevel gear on to a live axle. Another double cylinder car is of 10-h.p. with side chain transmission (Fig. 3). Next in order come the 12-h.p., the 18-h.p., and the 25-h.p. vehicles, all having four cylinder engines and side chains. In all cases the Peugeot engines are now of the vertical type. In the two-cylinder engines the cranks are set at an angle of 180 degrees to each other, while in the four cylinder motors the cranks of the two outside cylinders are set opposite to those of the inside pair. Except in the single cylinder engine, all the valves are mechanically actuated and interchangeable one with the other. The inlets and exhausts are located on different sides of the engine, the cam shafts operating the same being enclosed in the crank case. The 7-h.p., 10-h.p., 12-h.p., 18-h.p. and 25-h.p. cars are arranged to be fitted with either magneto or high-tension ignition, either of which can be advanced or retarded in the usual way, and the speed of the motor consequently regulated. In the single-cylinder cars the engine speed can also be controlled by means of a device varying the lift of the inlet valve. The multi-cylinder engines are provided with centrifugal governors acting on a butterfly valve in the inlet pipe. A lever on the steering column is also connected up to this throttle valve, so that the supply of gas can be varied as

desired, while a pedal accelerator is fitted, by means of which the governor can be temporarily put out of gear. The carburettor is of the float-feed pulverising type, equipped with automatically-regulating air inlet, in order that a perfect mixture shall be furnished at any speed of the engine. In the single cylinder cars the water-circulating pump is friction driven, but in

devised by M. Truffault; this acts as a sort of brake on the springs, preventing them from rebounding on the frame. A plate is attached to the bottom of the chassis, to which is fixed a powerful spring coiled in the same manner as that of a watch. One end of the semi-elliptical spring is joined to this by means of a bolt running through the centre of the coil. The result of

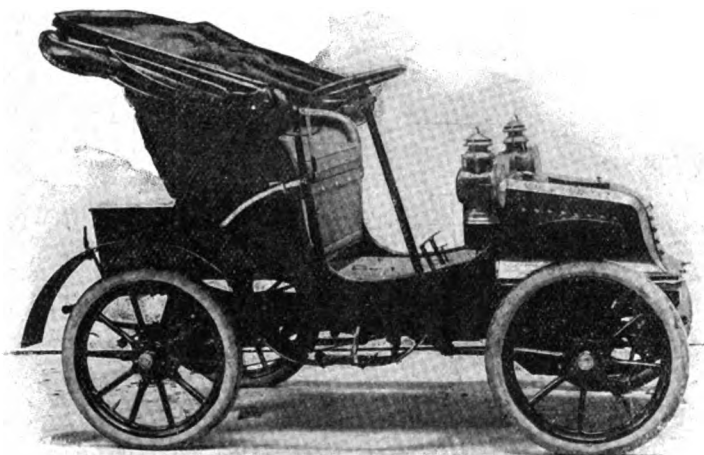


Fig. 1.—The 1904 Baby Peugeot.

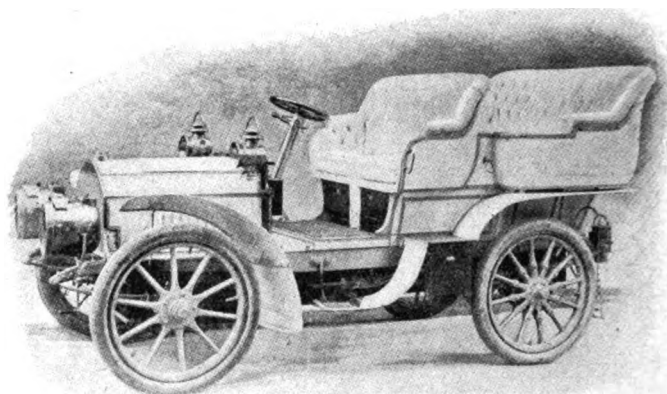


Fig. 2.—The New 15-h.p. Darracq Car.

the multi-cylinder vehicles it is positively driven by gear wheels; the latter are also equipped with combined honeycomb radiators and water tanks, through which a current of air is induced by a fan. The 5-h.p., 6½-h.p., and 7-h.p. cars have three speeds, and the 10-h.p., 12-h.p., 18-h.p., and 25-h.p. vehicles four speeds, in addition to the reverse. All are controlled by one lever, and on the top speed the power is transmitted directly without the intermediary of any of the pinions in the gear box. As regards frames, in the single cylinder cars they are of tubular construction; for the 7½-h.p. and the 10-h.p. double cylinder vehicles the armoured wood frame is retained, while for the four cylindered cars stamped steel frames have been adopted. Except as regards the 5-h.p. and 6½-h.p. cars all the models are being

the combination is that in passing over rough roads the rebounding action of the main spring is counteracted by that of the coiled one. Altogether the Peugeot Company has a display worthy of its reputation, and with such a wide range of cars, appealing to motorists of all classes, from the man of moderate means, upwards, there can be no doubt of these vehicles being largely adopted in the coming season.

The Darracq Company has a magnificent stand, the design of which is, as already mentioned, intended as a reproduction in miniature of the portico of the Cathedral of Seville. This is one of the few concerns whose 1904 models have been shown in England ere being exhibited in France, and as a description of the same was given in the *Journal* for the 28th ult., no lengthy men

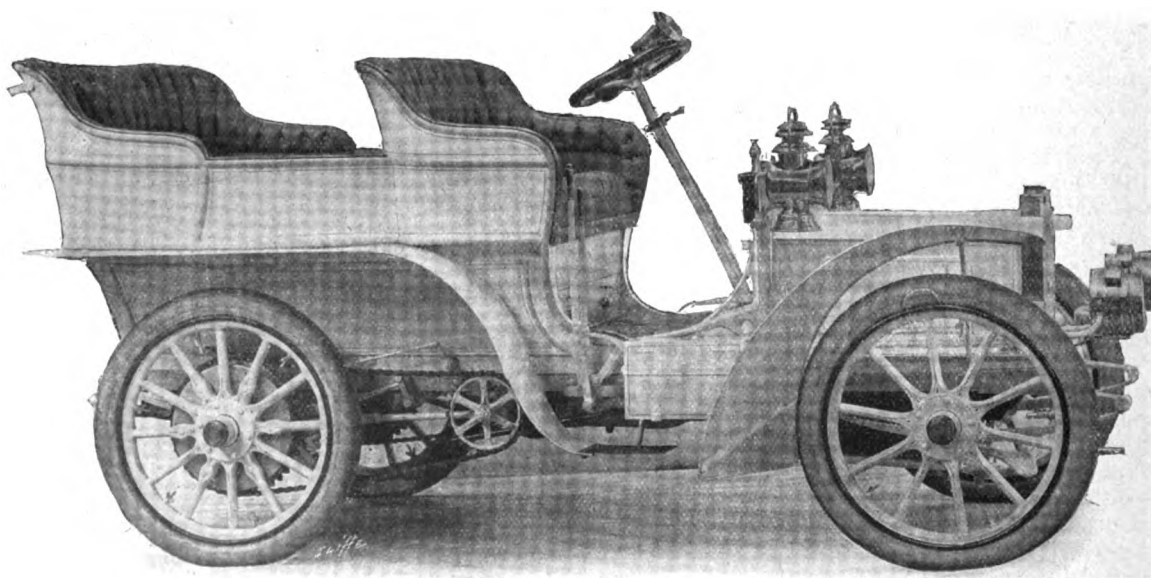


Fig. 3.—The 10-h.p. Peugeot Car.

made with different sizes of frames, the standard one being for bodies of the tonneau type and the longer chassis intended for carriage bodies having entrances to the rear seats at the sides. With the view of making the vehicles much more comfortable and free from jolting when travelling over rough roads, the Peugeot Company have adopted the cushioning arrangement

tion is necessary at the present time. It will suffice, therefore, to briefly state that for next year this concern is making five types of cars; 8-h.p. single cylinder, 9-h.p. and 12-h.p. double cylinder, and 15-h.p. and 24-h.p. four cylinder. The 15-h.p. car (Fig. 2) is a new model; it has a pressed steel frame of special design known as the "Darracq-Arbel," slightly turning in at the

fore part to allow the car to turn in a much smaller circle than previously. The four-cylinder engine has mechanically actuated inlet valves, accumulator ignition, governor acting on the inlet, honeycomb radiator and fan, and all other modern fitments. The cardan shaft and bevel gear system of transmission is still retained, while the gear box is adapted to give three speeds ahead and one reverse, with direct drive on the top speed. Another feature of

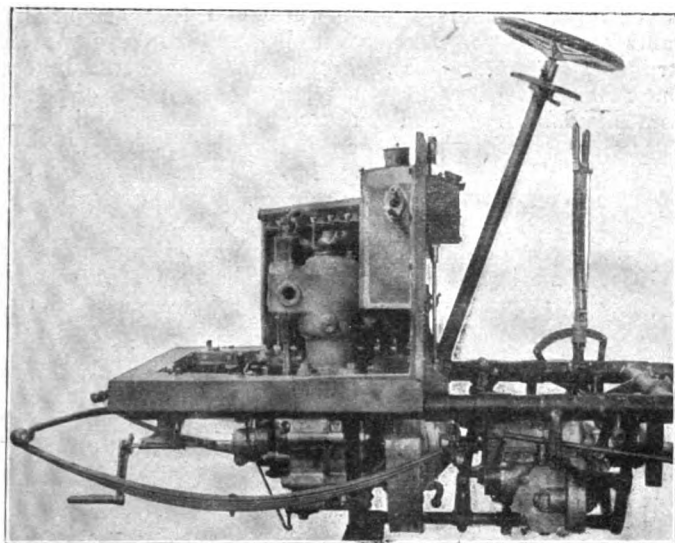


Fig. 4.—Fore Part of Chassis of 7-h.p. Renault Car.

the Darracq cars which is retained in the new model is that the change gear is actuated by a lever on the steering column. The lubrication is effected by pressure from the exhaust, while, in order that there shall be no failure in the supply of petrol to the carburettor when travelling over hilly roads, an auxiliary petrol tank is fitted under the bonnet. The brakes on the car are of the internal expanding type, and, of course, act equally well whether the car be running in a forward or backward direction. The Darracq Company are devoting much attention to the demand for cars, the rear seats of which can be reached from the pavement, and are building vehicles of this type in the 12-h.p.,

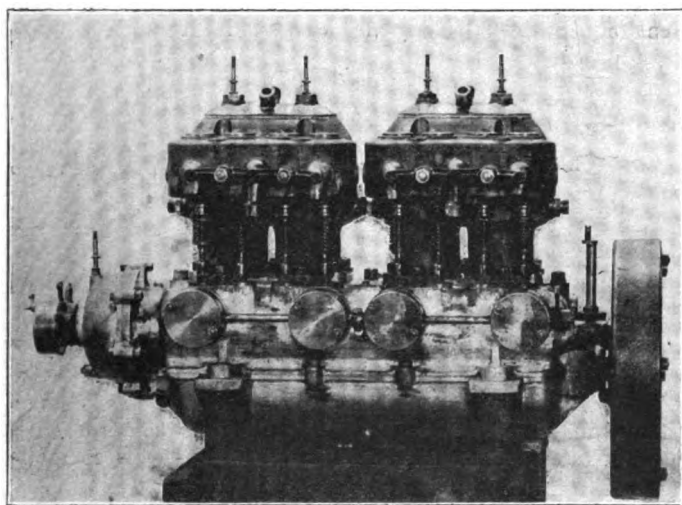


Fig. 5.—The Renault 14-h.p. 4-Cylinder Motor.

15-h.p., and 24-h.p. models, in all of which a fifth transverse spring is employed, adding greatly to the easy-riding of the vehicles.

Decorated in purple and old gold, Messrs. Renault Freres have a stand worthy of the firm's great reputation. Three standard types of Renault cars are being made for the 1904 season, 7-h.p. single cylinder, 10-h.p. double cylinder, and 14-h.p. four cylinder. A feature of the 7-h.p. engine is the provision of a

device by means of which the tension of the spring of the inlet valve can be varied and the speed of the engine thus regulated, this being in addition to the centrifugal governor, which acts on the carburettor, automatically regulating the supply of air and the quantity of mixture allowed to pass to the engine. The lubricator is mechanically actuated by means of a small connecting rod driven by the engine itself. As will be seen from Fig. 4, the tubular frame is retained. The large springs employed will also be noticed. The 10-h.p. two-cylinder shows a number of modifications. The inlet valves as well as the sparking plug are in the top of the combustion chamber, and are thus readily accessible. Furthermore, it is not now necessary, in order to remove the exhaust valves, to first remove the inlets; instead, they can be quickly taken out by first removing two plugs in the combustion chamber. The inlet valves are provided with the variable tension spring found on the 7-h.p. The old form of carburettor, slightly modified, is retained, the changes being in the direction of rendering it more accessible, and capable of being easily taken to pieces. In the 14-h.p. four cylinder cars, the engine (Fig. 5) is cast in two pairs, with an air space between each pair of

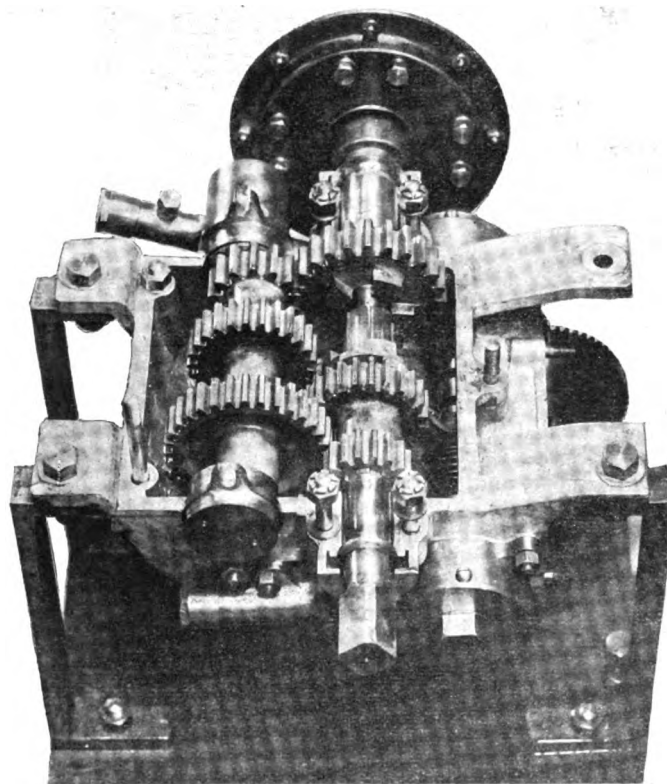


Fig. 6.—The Renault Change-Speed Gear.

cylinders. The inlet valves, which are mechanically actuated off the same cam shaft as the exhaust valves, are fitted with a special device to give a progressive lift. The carburettor is similar to that used on the 10-h.p. vehicles. On all the Renault cars the high tension system of ignition is adopted. On the 14-h.p. vehicle, however, I noticed that a duplex coil is employed, and consequently only two tremblers are used for the four cylinders. The contact breaker is of the wipe type and can be readily detached without using any tools. Another improvement, which applies to all the three types, is found in the change-gear box, or rather in the sector by means of which the gears are changed, the alterations not only simplifying the work of erection, but enabling the parts to be more easily inspected. The Renault firm, which is represented in England by the Roadway Autocar Company, Limited, has an interesting display, not only of finished cars—these including a long-frame side-entrance landaulet, but of chassis enabling the arrangement and workmanship to be inspected.

Messrs. Grouvelle and Arquembourg, whose radiators are employed by most of the leading French concerns—as, for instance, Panhard, Mors, De Dion, Darracq, C.G.V., Ader, Renault, etc.—have a big display of their *refroidisseurs cloisonnes*, or framed radiators for use in connection with the water circulation of petrol motors. These radiators are made in several forms, each in a variety of forms and sizes. Thus there is the plain radiator, set in a neat frame; a similar cooler, but fitted with a fan to induce a current of air through the air spaces formed by

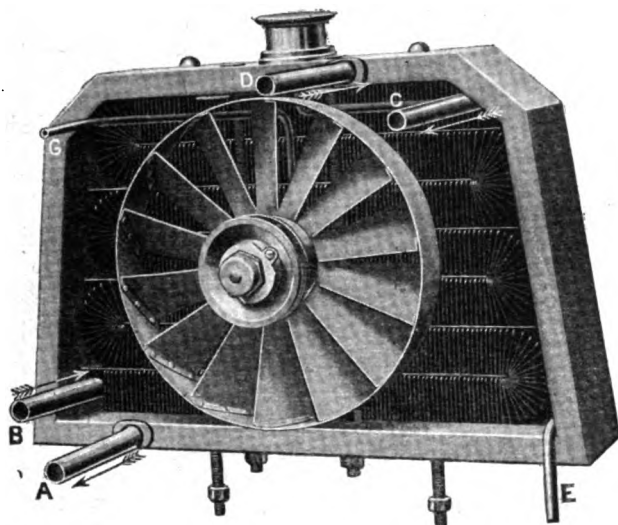


Fig. 7.—Rear View of Grouvelle-Arquembourg combined Water Tank and Radiator.

- | | |
|-----------------------------------|--------------------------------|
| A. Outlet to pump. | D. Inlet to tank. |
| B. Inlet from pump to Radiator. | E. Overflow. |
| C. Outlet from Radiator to motor. | G. Lubricator for Fan spindle. |

the radiating ribs; and finally the framed radiator with water tank and fan combined (Fig 7). A new carburettor adapted for cars and motor-cycles is also displayed; it is of the constant-level pulverising type, and consists of a chamber A (Fig. 8) in which is the float F fitted with a needle valve which closes the petrol inlet S as the float rises. From the chamber A the spirit passes to the spraying chamber B, placed transversely at the rear. The latter is of special design, the internal surface being in the form of a sinusoidal curve, by means of which the suction of the motor, even when the latter is running slowly, is claimed to be sufficient to maintain a constant carburation. The carburettor is so arranged that it can be readily taken to pieces for cleaning purposes; for multi-cylinder engines it is provided with a jacket, R, through which hot water can be circulated, and with a throttle valve adapted to be controlled either

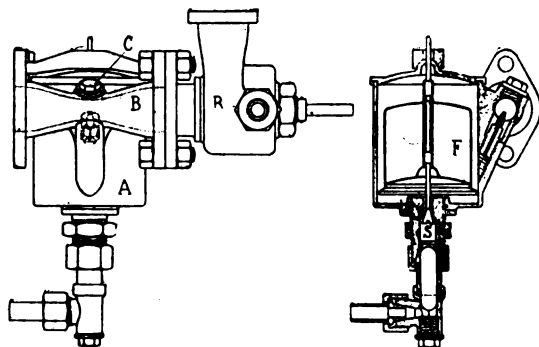


Fig. 8 and 9.—General View and Transverse Section of Grouvelle-Arquembourg Carburettor.

by hand or by the governor. The most interesting exhibit at this stand, however, is the new Grouvelle-Arquembourg speed regulator, which is intended for use in conjunction with all constant-level carburettors. Its action is based on the average reduction in pressure which takes place in the suction pipe when the engine is working. This reduction varies

in proportion to the speed of the engine, but is constant for any particular speed, and in the new device is made use of to actuate a valve between the float chamber and the spraying nozzle in the carburettor by means of which the supply of petrol is restricted to the requisite quantity. The arrangement is exceedingly ingenious, but cannot, without the aid of drawings, be clearly described. For the moment it must suffice to state that it is controlled from the steering wheel, and that among the advantages claimed for it are that it obviates the necessity of a centrifugal governor, and that, being pneumatically operated, there are no rods or levers. Furthermore, the consumption of petrol is economised, being reduced to the actual amount required at each suction stroke of the engine.

The Decauville Company have brought out a new model for the 1904 season, of which an illustration is given in Fig. 10. It is classed as a light car, although fitted with a four-cylinder engine developing 14-h.p. The cylinders are 95 mm. diameter by 110 mm. stroke; the inlet as well as the exhaust valves are mechanically actuated. The centrifugal governor acts on the

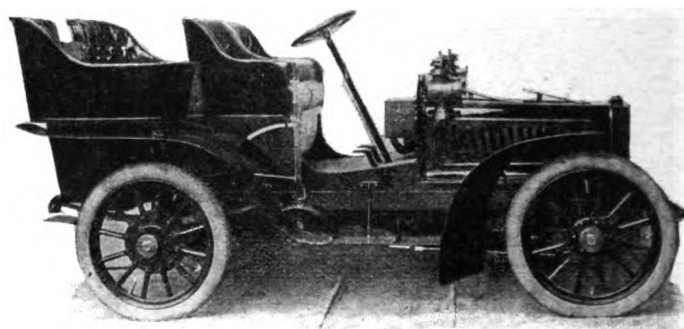


Fig. 10.—The 14-h.p. Decauville Car.

inlet, a pedal accelerator being fitted by means of which the speed of the engine can be increased to 1200 revolutions per minute. A honeycomb radiator and tank is now employed in connection with the water circulation. The carburettor is of the automatic air regulation variety. Three speeds forward and a reverse are controlled by one lever, the drive on the top speed being direct, the power being transmitted through bevel gearing to a live axle. As usual in Decauville cars, the engine and gear are entirely protected, and the new model should prove as successful as its forerunners.

PHANOMEN.

(To be continued.)

A MOTOR-CAR was included in a sale at Willis's Rooms, W., on Tuesday.

THE Panhard and Levassor Co. are establishing large branch works at Rheims.

MESSRS. PICKFORD, LIMITED, the well-known firm of carriers, are reported to have ordered two steam wagons.

MR. W. HARRIS, of Albert Road, Belvedere, S.E., has a motor garage and facilities for the charging of accumulators, etc.

PRINCE HENRY OF PRUSSIA, who has been using a Locomobile two-seated car during the past year, has just ordered a 10-h.p. "Surrey" from the German agents of the Locomobile Co.

THE Road Carrying Co., Limited, Liverpool, have been fined 20s. at Blackburn, at the instance of an officer of the Inland Revenue, for keeping a motor carriage without having a proper license.

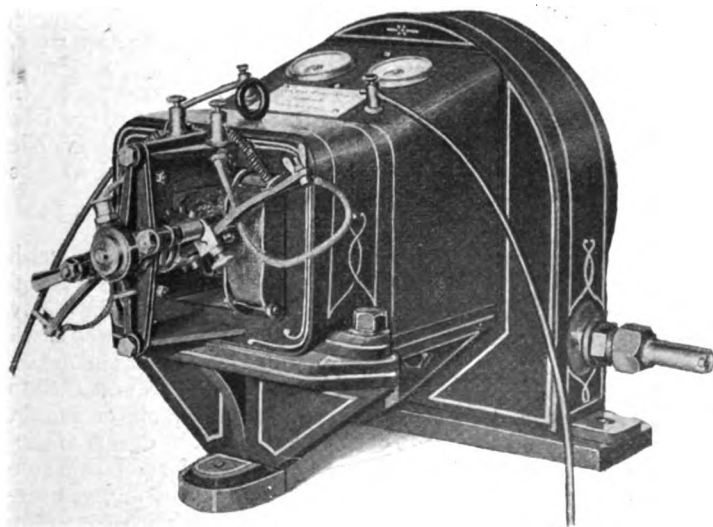
FROM Messrs. G. Straus and Co., Limited, we have received a copy of a booklet in which the 1904 models of the "Fafnir" motor-cycle engines, which are being made in two sizes—2½-h.p. and 3-h.p.—are described in detail. The various parts of the motor, including the carburettor, contact maker, exhaust valve control, are all depicted in clearly-drawn illustrations, rendering the booklet of great utility to all users of "Fafnir" engines.

SOME USEFUL NOTES.

THE Michelin Company, in one of their recent articles on pneumatic tyres, remark that if they had to make a list of the enemies of the motor-car driver, they would without hesitation put the driver himself at the top. This is to a great extent true, one of the most frequent causes of damage to pneumatics being insufficient inflation. In the Michelin hand-book there is a table of pressures to which various tyres should be inflated. Not only must they be pumped up properly, but the fixing bolts must also be well screwed up. Should they be slack, the cover tends to move in the rim, and the thickened edge gets damaged. At high speeds the cover turns bodily in the rim, and this invariably tears the valve out of the tube. Moreover, if the tyre is not sufficiently inflated, and the bolts screwed well up, water is sure to get in, and then the cover lasts a very short time. As for the bolts themselves, care should be taken that the canvas covering is always intact, otherwise damage to the air tube will result. For the same reason bent bolts should never be used, as they do not seat properly.

ONE very often hears people say that they can "get home" with a deflated tyre. This is most unfair to the tyre. In case of puncture, unless the sacrifice of a cover and tube is of small moment, the tube should be changed at once. Even in a short distance the cover is generally much damaged and the valve pulled out of the tube. If it is decided to go on at all costs, the inner tube should be removed, the fixing bolt screwed firmly up, and the cover fastened with leather straps. If these are not obtainable rope will do, but it will not last so long. After running on a deflated tyre, the rim should be carefully examined to see if it is dented. This often occurs, and the edge of a new cover is with difficulty inserted in the recess. It can, of course, be forced in, but the rim afterwards invariably cuts the cover. In conclusion, the Michelin Company point out to motorists that water inside a cover is fatal; therefore after a puncture fill up the hole in the cover with solution, and repeat the operation when the run is over.

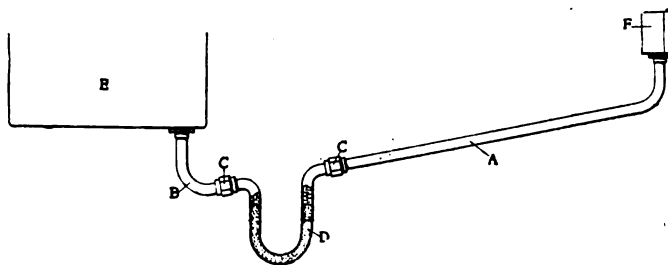
A GOOD deal of discussion has taken place in our correspondence columns recently on the subject of charging accumulators, and in one letter the suggestion was made that where a good water pressure is available an excellent charging method is by means of a miniature water motor or a small dynamo. Several readers having asked for particulars of such a combination, we herewith illustrate one which has lately been introduced by Messrs. Gilbert Gilkes and Co., Ltd., of Kendal. The



arrangement, which is easily controlled, is intended for use in connection with the ordinary house water supply. It consists of a water motor of Messrs. Gilkes' "Hector" type coupled direct to a small dynamo. In the space between the

water motor and the dynamo there is fixed a small instrument board with the necessary amperemeter, voltmeter, and connections. The terminals are clearly marked "positive" and "negative," and all that is necessary is to couple the short length of flexible tube, supplied with the set, to some convenient house tap, connect the battery as marked, and regulate the water supply so as to obtain the correct rate of charge in amperes. The set is designed for water pressures varying from 40 lbs. upwards. In supplying the same, the makers desire to know the pressure of the water supply of the district in which the intending user resides, and in cases when there is difficulty in ascertaining this, Messrs. Gilkes can send, for a small charge, a pressure gauge with nozzle and flexible pipe combined, by means of which the working pressure can be accurately ascertained.

As there are still a large number of light steam cars in use in various parts of the country, the following letter, sent by



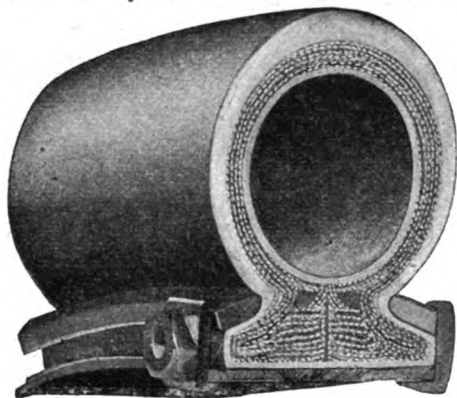
Mr. F. Hiorth, of Christiania, Norway, to the "Horseless Age," may usefully be reproduced, as it describes a method of preventing freezing of the steam gauge. "Several times last winter," remarks Mr. Hiorth, "during cold and windy weather the steam gauge of my car became frozen and at times was nearly destroyed, the ice deforming the expanding part of the gauge. I had much trouble from this source at first. I found that the most careful packing with felt was useless, and several gauges broke. The following description of how I entirely remedied this trouble may therefore be of interest. To begin with, I disconnected the pipe leading from the boiler E to the gauge F and by means of two union fittings C inserted a U-shaped pipe, which was nearly filled with mercury (D). Care must be taken that the mercury can under no circumstances get into the boiler, as it would injure the copper or brass parts. The pipe A leading to the gauge is filled with alcohol (or glycerine) and the whole attached to the boiler as before. The part B should of course be as short as possible."

SINCE the question of anti-freezing solutions for the circulation water of petrol cars is on the tapis, we would call attention to a solution suggested by Mr. E. Mallinckrodt, jun., in an American contemporary, which is claimed to attack iron very much less than calcium chloride solution. The solution is composed of seventy-five parts by weight of ordinary carbonate of potassium (salts of tartar) in a hundred parts by weight of water, to which fifty parts by weight of glycerine has been added. Actual experiment has shown this mixture to remain perfectly liquid at a temperature of 22 deg. below zero Fahr. If it is not necessary to provide for such a low temperature, less glycerine can be used. The carbonate of potash employed by Mr. Mallinckrodt is not the dry article, but contains about 5 per cent. of water.

THE Committee of the Wolverhampton Automobile Club are of opinion that it is in the interests of automobilism that one club should govern automobile matters generally, but that each club should be allowed to manage its own affairs and to control absolutely any events restricted solely to its members. If the A.C.G.B.I., after the meeting they propose holding on February 15th, 1904, for the purpose of considering the affiliation question, do not exhibit a more reasonable attitude towards provincial automobilists, then the Wolverhampton Club are prepared to support a federation scheme.

THE FISK TYRE.

IN recent American automobile trials the Fisk motor tyre has figured so prominently and so favourably that its introduction into this country by the South British Trading Company is a matter of general interest to automobilists. The tyre has six layers of fabric, a thickness of rubber running between the upper and lower three. The cotton warp threads are specially strong, passing at an angle of 45 deg. across the tyre and crossing each other in alternate layers. The function of the web is mainly to hold the warp in place during the construction of the tyre. Subsequently it provides an absorbent for the rubber, also assisting to key the rubber in the fabric. In the Fisk tyre the rim is of flat steel with electrically-welded joint. This is attached to the felloe in the ordinary way, but projects somewhat on each side. A central core of partially-cured rubber, round which the layers of canvas are laid before being



finally vulcanised, is a feature of the thickened edges of the cover. Wedge-shaped rings fit closely upon the external surfaces of the thickened edges. Bolts passing between these and the base of the tyre against the rim grip the edges securely and place the tyre under compression, keeping it closely against the rim. As will be seen from the illustration, the edges of the cover meet in the centre, the effect of the bolts being also to press these firmly together. Should necessity arise the tyre can be quickly removed from the rim by removing the nuts, taking the bolts out and thus releasing the rings. After the repair has been made the inner tube is laid within the cover, the edges of which come together without force, it being manufactured throughout in the shape in which it is actually used.

As the air chamber is wholly above the rim the maximum resiliency is ensured, while the ease with which it can be detached is a point that will be appreciated by motorists who have had considerable experience of punctures.

A PUBLIC service of motor-cars is about to be started between Honfleur and Trouville.

PRINCE ALEXANDER of Solms-Braunfels has been elected president of the Austrian Automobile Club in succession to Count Schönnborn.

THE Church Society for the promotion of Kindness to Animals has issued as a pamphlet the address recently delivered at one of its meetings by the Hon. C. S. Rolls on the "indirect advantages of the motor-car to horses generally."

A MOTOR-CAR, the property of Mr. D. Macpherson, Kingussie, which left Edinburgh one night last week for the north, became blocked in the snow on the high incline between Perth and Inverness. A snow-drift several feet in depth lay along the road, and the car had to be abandoned for the night, the occupants being fortunate in reaching one of the Highland Railway signal boxes, whence they were conveyed to Kingussie by a passing pilot engine. The following day a squad of men proceeded to the embedded car, which had to be cut from the snow wreath, and was ultimately drawn to Kingussie by a team of horses.

CONTINENTAL NOTES.

THE latest report in connection with the Gordon Bennett race is a proposal accredited to Baron de Crawhez, that the eliminating tests for the Belgian, French, and English teams shall be held in conjunction with the Circuit des Ardennes, which is fixed to take place a month before the Cup race. It is also suggested that arrangements might be effected to make the Circuit a kind of training ground. The German Club will receive entries for its eliminating contest until the 1st February. The entry fee for each car will probably be £150. The latest entry for the German team is that of the Internationale Automobile-Centrale, Jeannin and Company, of Berlin. The Panhard-Levassor Company has also just entered three cars for the eliminating contest for the French team. The Touring Committee of the A.C.F., at its meeting on Saturday last, decided to organise a tour to Homburg on the occasion of the 1904 Gordon Bennett race. The proposed route is *via* Rheims, Luxembourg, and Coblenz, returning by Nuremberg, Stuttgart, Karlsruhe, Baden and Nancy.

AT the recent military manœuvres in Switzerland, a Martini, a Peugeot, a Rochet-Schneider, a Georges Richard and two Panhard cars were used by the leading officers. They report that without the service of these automobiles it would have taken at least three times as long to forward orders to and receive communications from different parts of the ground. Each driver kept a record of all car troubles.

ARRANGEMENTS are in hand for the establishment of a motor-car service for the conveyance of passengers and goods along the Caucasian coast between Novorossiisk and Sukhum-Kaleb, a distance of about two hundred and seventy miles. A company has just been formed at St. Petersburg, with a capital of three million roubles, for putting the project into practical operation. The concession is granted for twenty years, with power to the concessionaires of extending their field of operations. A company is also being formed at Kiew to start a service between Kamenez-Podolsk and Proskurów.

WHILE England has now its Association of Motor-van and Wagon Users, France has just organised a *Chambre Syndicale des Transports Automobiles*, which will embrace not only the users of commercial motor-vehicles but also the builders of the same. The objects of the new body are to encourage the adoption of mechanical traction and to defend the rights of motor-vehicle users. M. Turgan is the president of the new *Chambre Syndicale*, with M. Rondet-Saint, director of the French Hagen Company, as vice-president. The great progress made in England with the adoption of heavy motor-wagons is in strong contrast with the position in France, and it is hoped that the new body will be the means of giving an impetus to this branch of the automobile movement, and that at no distant date motor-vans and wagons will be as largely used in France as in Great Britain.

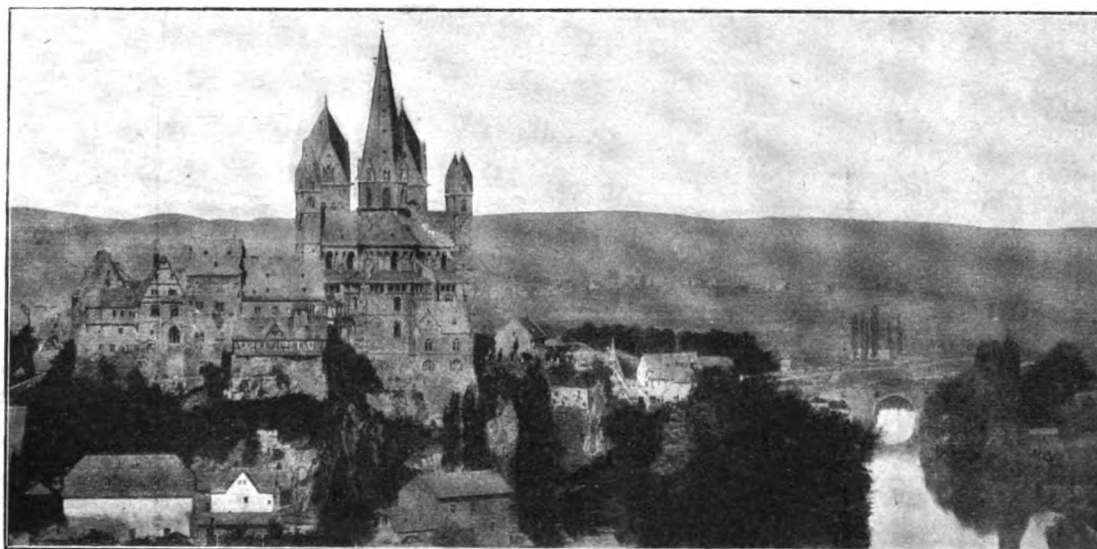
THE latest competition to be organised in connection with the *Salon* in Paris is called the *Concours de Gonflement de Pneumatiques*. Its object is to bring out the merits of the many devices which have recently been introduced to do away with the use of hand or foot pumps for the inflation of the pneumatic tyres of automobiles. The competition is being divided into two classes:—1, mechanical arrangements, driven off the motor, to either pump air directly into the tyres, or air or gas into a pressure tank. 2, devices consisting simply of receptacle containing air or gas under pressure, fitted with valves and connections, so that they can be attached for inflation purposes to the valve of the tyre. In class 1, the points which will be taken into account are: certainty of operation, weight, space occupied, and cost. As regards class 2, the principal features to which attention will be devoted are the number of tyres which can be inflated from one container, space occupied, and cost.

THE question of the classification of racing cars in France has not yet made any step towards a settlement. For a long time past the question of cylinder capacity has been under the consideration of the different bodies connected with the automobile world. La Chambre Syndicale d'Automobiles, which has taken an active part in the discussion, has decided that for 1904 no changes shall be made in the present classification, but that a further meeting shall be held in February next as regards the rules for 1905.

WITH the support of the Automobile Club of Marseilles, the "Provence Sportive" is organising a somewhat novel competition for the 6th March next. Speed trials over a 500-metre course, with a standing start and a stopping finish, have already been held at Uriage and Deauville, but these events were on a level road. The A.C.M. competition is to be held on the Platrières Hill, near Aix, and will be confined entirely to touring vehicles. There will be six classes, as follows:—(1) Cars up to 5-h.p., (2) vehicles between 6 and 9-h.p. inclusive, (3) cars from 10 to 15-h.p., (4) from 16 to 24 h.p., (5) motor-cycles less than 2½-h.p., (6) motor-cycles more than 2½-h.p.

THE question of the responsibility of racing motorists to their servants is shortly to be discussed in the French Courts in two cases. One is that of M. A. de Pallange, who was mechanician to Count Zborowski at the time of the latter's fatal accident in the La Turbie hill-climb at Nice in April last. M. de Pallange ascribes the catastrophe to the Count's imprudence, and claims £4,000 damages for the injuries which he received in consequence. The second case is that of the relatives of the mechanician to Mr. L. Porter, whose car upset at a corner in the Paris-Madrid race. The mechanician was thrown under the car and was burned to death when it caught fire. His family is bringing an action for compensation.

M. GEORGES DE LA NEZIERE, a well-known French sportsman, and the representative of the Wolseley Company in France, has offered a massive silver cup, valued at £400, for annual competition by motor launches. The race is to be run off every year on the Seine, near Paris, over a distance of 200 kilometres. The trophy is to be known as the Challenge International Competition Cup, and must be won three years in succession by the same boat owner and make of motor before becoming the permanent property of the winner. It was originally proposed to hold the



The 1904 Gordon Bennett Course - A View of Limburg, showing the Cathedral.

A HILL-CLIMBING trial was held by the Automobile Club of Algeria on the 3rd inst., on the Eucalyptus Hill at Cheragas, on which a kilometre course had been marked out. Unfortunately the weather proved unfavourable, and somewhat restricted the number of starters. The best time up the hill was made by M. Bellemare, who, on a 14-h.p. Renault, covered the kilometre in 1 min. 29 sec.

IN connection with the reliability trial for motor-cycles which, as I stated last week, is being organised by "La Gazette della Sport," of Milan, a proposal is now under consideration to organise a competition for heavy commercial motor vehicles to be held at the same time and over the same route.

ONE of the first firms in Sweden to take up the construction of motor-cars is the Scania Maskinfabriks Aktiebolag, of Malmo, which is now turning out three types of cars on modern lines—8-h.p., 6-h.p., and 4½-h.p. One of the 8-h.p. cars, which have a double cylinder engine, three speeds and reverse and chain transmission, was recently submitted to a road trial between Malmo and Stockholm, a distance of nearly 500 miles. Although the bad roads of the country do not permit of high speeds, the trip was successfully carried through.

first race on the 6th inst., but it has been decided to postpone it until April or May next.

M. JEANTAUD, the well-known French builder of electrical cars, read a short paper at a meeting of the Association Générale Automobile on the Edison accumulator, in the course of which he pointed out that it showed a great saving in weight over the pasted plate type of battery, but that the cost was almost double that of the ordinary type.

A FEATURE of the gala which is to be held at the Opera by the A.C.F. in honour of the delegates of the French Provincial and Foreign Automobile Clubs, on the 17th inst., will be a grand automobile ballet, in which four allegorical cars, one representing England, Holland, and Belgium, the second Germany, Russia, and Austria, the third Italy and Spain, and the fourth France, will appear on the stage.

ON Saturday last the Automobile Club de Nice entertained the English members of Parliament at present visiting France. An excursion by motor-car to La Turbie was included in the programme.

THE "STEVENS DURYEA" CAR.

THE latest American car to be introduced into this country is the "Stevens Duryea," the agency for which has been taken up by Messrs. Joseph Baker and Sons, Limited, of Willesden Junction. While in some respects the general arrangement is similar to that of the familiar type of American petrol car, there are a number of special features in the design, which is due to Mr. J. F. Duryea, a brother of Mr. C. E. Duryea. The motive power is supplied by a horizontal double-cylinder engine of the opposed type. The cylinders are $4\frac{1}{2}$ inches diameter by $4\frac{1}{2}$ in. stroke, the normal speed of the engine being only 600 revolutions, at which it develops 7-h.p. A very heavy flywheel weighing 78 lbs. is employed. The parts in the crank case are oiled from one reservoir, which holds sufficient oil for a run of 200 miles. The cylinders are lubricated from a separate cup. The water circulation is maintained by means of a rotary valveless, positively-driven pump and a radiating coil. The water tank holds five gallons, and this will, it is stated, ordinarily suffice for a week's run. The high-tension system of ignition is adopted, a separate vibrator coil being used for each cylinder. The circuit-breakers are enclosed in the crank-case and run in oil. The ignition can be advanced or retarded as usual, while the speed of the engine can also be controlled by means of a throttle valve. The motor is readily started from the seat by means of a short crank attached to the steering post.

The transmission gear comprises three speeds forward and reverse, all controlled by one lever. The change gear is of the individual clutch system, all the gear wheels being constantly in mesh. A clutch is used for each of the three speeds, also one for the reverse, the clutches being all exact duplicates, a feature

spring-plunger button called the throttle button, operated by the thumb of the hand gripping the lever, which is pushed down to throttle the mixture. If pushed all the way down it will release the compression, or it may be fixed at any point by a serrated spring catch, to hold the throttle adjustment. Thus this single-speed change lever controls the speed of the car, the power of the motor, and effects the compression release at starting.

The steering tiller appears somewhat unusual from an English point of view. The makers, however, state that in designing it they have recognised the principle which makes a wheel steering successful, and have taken advantage of this condition

and used the steering post. As, however, they have found the wheel itself to be in the way when used in a light car, they use but one spoke of the wheel. This enables them to also mount the starting and steering parts on the same bracket. The frame of the car is built of heavy gauge tubing. The front axle spindle is 1 2-16 inches diameter, and that of the rear axle 1 3-8 inches. The front axle is swivel jointed to the frame tubes. The track is 4 feet 6 inches and wheel base 5 feet 9 inches. Special stress is laid upon the matter of accessibility to the motor. Both cylinder heads may be taken off, the cylinders inspected, wiped out, and the heads replaced, in five minutes or less.

The exhaust and inlet valves are equally easy to inspect. The cover to the crank-case can be removed in half a minute, and all the working parts readily viewed. The speed gearing is also encased with leather, which can be opened to any extent for inspection of all internal parts, friction clutches, etc. As regards braking power the motor and friction clutches may be used to regulate speed down

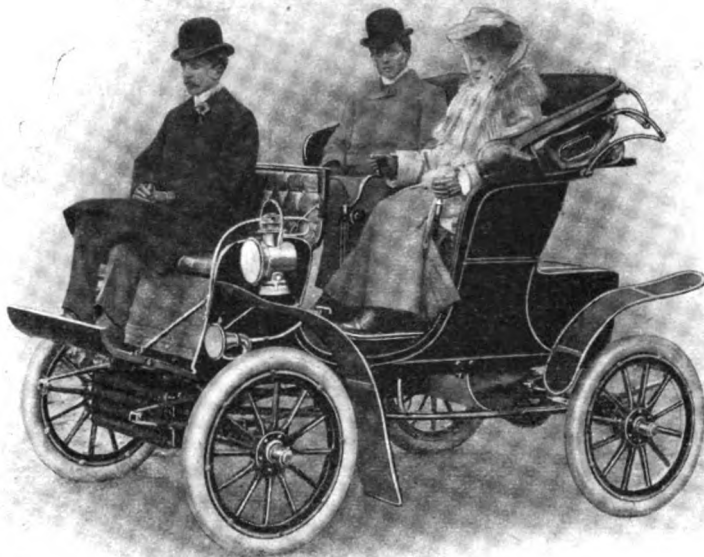


Fig. 1.—General View of Car.

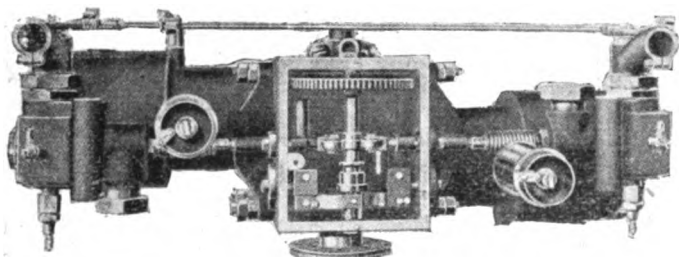


Fig. 2.—Plan of Motor with Crank Case Cover removed.

which considerably facilitates repairs; all are of the internal expansion shoe type, the shoes being leather faced and readily adjusted. From the clutch countershaft a single centrally-located chain transmits the power to the rear axle. The chain can be adjusted by swinging the countershaft forward without affecting the correct working conditions of the transmission as a whole. The speed-change lever is at the driver's left hand, and has a grip at the top and a sliding collar, the latter lifting the speed-change latch when depressed. On the top of the lever is a

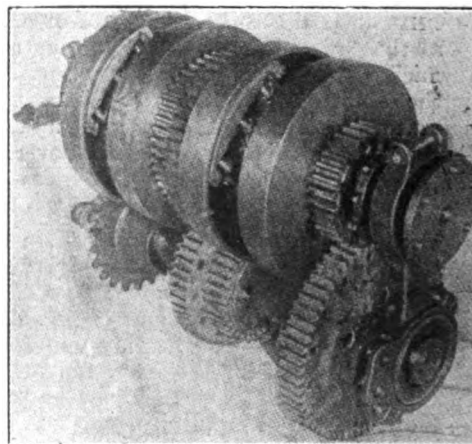


Fig. 3.—The Change-speed Gear.

a long hill. The only other brake is that on the differential gear drum, on the rear axle. On the road the Stevens Duryea is an extremely quiet and smooth-riding carriage. The gearing and the exhaust are both noiseless, and the management of the vehicle appears to be very easy.

HERE AND THERE.

A MOTOR racing track is being established at Paris-Plage, near Boulogne.

THE Brotherhood-Crocker Motors, Limited, have taken temporary offices at 19, Hanover Square, W.

THE Scottish Motor Garage Company has been formed to carry on the motor-car business of Mr. James Inglis, at 96, Renfrew Street, Glasgow.



A Motor Meet near New York.

THE price of Pratt's motor spirit has been reduced by the Anglo-American Oil Company, Limited, as follows:—"A" grade 1d. per gallon. "B" grade, 2d. per gallon.

AT a track race meeting held in the Agricultural Park at Los Angeles, Cal., U.S.A., under the auspices of the Automobile Club of Southern California, Barney Oldfield, on the Winton eight-cylinder racer, succeeded in covering a mile in 54.45 sec., or a speed of over sixty-five miles per hour.

THE regulations in connection with the Side Slip competition to be organised by the A.C.G.B.I. have just been issued. Full particulars of any device to be submitted for the competition, with drawings (but no models), must be sent in by February 29th, which is to be the last day of entry. Drawings must be accompanied by an entrance fee of five guineas.

DR. JOHNSON, of Liscard, Cheshire, has brought out a device to meet the demands of the new Motor Car Act. The main features are that the name-plate required to be fitted on all motors and motor-cycles has the lamp bracket attached. The lamp, which consists of two lenses, will illuminate the name-plate from a white side-light and the rear light will be red. If used for the front of the car or cycle, both lights will be white.

AT the Tonbridge Police Court, Alfred Turner was summoned for driving a light locomotive on the highway at Edenbridge without a light. Defendant said he had a light on each side of his carriage at the fore part, and at the back of these two lamps with red glass, which he held was sufficient for the purpose. He produced one of his side lamps in Court, and lit it, when it showed a small red light at the back. The Chairman said, without any reflection on the constable, there seemed to be a doubt about the case, and it would be dismissed.

A DEVICE for the regulation of automobile traffic by means of coloured signal poles and discs has been brought out by Messrs. Spiers and Company, of Glasgow. This is a simple plan of indicating the roads upon which maximum speeds are allowed, those where speed is restricted, the areas in which motor-cars are prohibited and the roads that are dangerous. The idea is capital, and motorists would welcome its general adoption by local authorities throughout the country. Discs of different colours are placed at the top of poles near the corners of roads, each colour representing one of the four divisions into which roads will naturally fall under the new Act.

A NEW motor-car depot has been established at 217, Piccadilly, W., by Messrs. S. B. Bailey and Lambert, who will make a speciality of the Miesse steam cars and the Herald petrol motor vehicles.

THE latest development of the Oldsmobile is its adaptation as a railway inspection car, the makers having arranged it for that use by the simple expedient of fitting it with light pressed steel flanged wheels and omitting the steering apparatus.

THE Continental Caoutchouc and Gutta Percha Company is now bringing out puttees for the repair of motor-cycle tyres. These are of the same construction as those supplied by the company for heavy motor-car tyres, and which have proved so great a success.

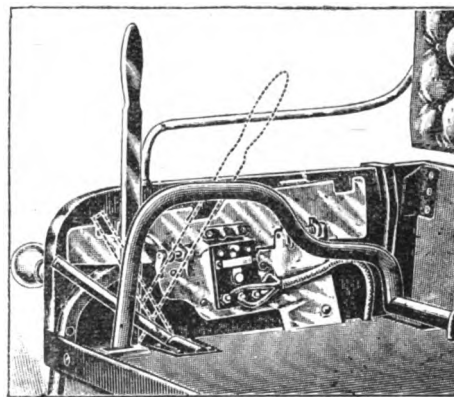
THE Keighley Association of Engineers have arranged for a paper to be given in the Lecture Theatre of the Technical Institute, Keighley, to-day (Saturday), by Mr. F. G. Heseldine, of Leeds, on "Motor Cars—Gearing and Steering." The chair will be taken by Mr. Arthur H. Marriner.

A USEFUL daily tear-off calendar has been published by Messrs. Cassell and Company, Limited, under the title of Letts' No. 2 calendar, which gives the rising and setting of the sun on each day's sheet. All the home edition of Letts' diaries for 1904 will contain a £1,000 accident insurance coupon.

A CONTRACT has been entered into with the Traffic Automobile Manufacturing Company, of Birmingham, for the conveyance of parcel mails by motor-van between Birmingham, Coventry, Kenilworth, Leamington Spa, and Warwick. The van is expected to commence running in about three weeks' time.

A BOY has been charged at the Stratford Police Court with assaulting a Blackheath motorist by throwing a piece of cardboard, which cut his face. The Motor Union took up the case, their solicitor expressing surprise when, at the court, the lad proved he was only nine years of age. Mr. Tabrum, the chairman of the Bench, having shown that they could not birch him, nor hang him, nor send him to prison, discharged the boy with a caution.

HEREWITH we illustrate a lock, the invention of a Chicago doctor, and designed for locking the operating levers on Oldsmobile cars so that they may be left without fear of molestation from would-be thieves or mischievous small boys. The lock consists of a flat plate hinged to the side of the body in such a way that it may be thrown down into a horizontal position, bringing one end against the brake lever, should this lever



be in its elevated position. The opposite end of the plate comes in contact with the ignition lever and holds it at the limit of its downward movement, where the speed of the engine is lowest, while the outer edge of the plate is formed with a notch, which embraces the clutch or transmission gear lever and holds the same in the position it assumes when the clutches of the gear are out of engagement. The plate is locked in its lowered position by a lock secured to the under side thereof and engaging a keeper secured to a suitable bracket riveted to the top of the seat. The Automobile Lock Co., of 560, West Jackson Boulevard, Chicago, are the makers of the device.

THE 1903 RELIABILITY TRIALS.

THE Committee of the A.C.G.B.I. have, on the recommendations received from the Judges' Committee appointed by the Club, awarded the medals offered in connection with the Reliability Trials held in September. Medals have not been awarded unless recommendations have been made to the effect that the vehicles are worthy to receive them.

The awards have been made by adding together the marks gained by each car for:—(a) reliability, (b) cleaning, replenishing, etc., (c) hill-climbing, (d) condition after trial, (e) brakes, (f) steering, (g) absence of noise, (h) absence of vibration, (i) absence of vapour or smoke, (k) absence of dust-raising (l) speed on track, (m) re-starting on hill, (n) finish and appearance, (o) general cleanliness of motor and gear, (p) fuel consumption, (q) accuracy of h.p., (r) cheapness.

SECTION I.

Class 'A1. Tandems and Quadricycles above 170 lbs. weight and below £160 in price.

First prize: Silver medal No. 1, the Century Engineering Company's 5-h.p. tandem.

Class A. Vehicles declared at a selling price of £200 or less.

First prize: Gold medal, No. 21, Jarrott and Letts' 5-h.p. Oldsmobile.

Second prize: Silver medal, No. 17, Jarrott and Letts' 6-h.p. Oldsmobile.

Class B.—Vehicles declared at a selling price of £200 to £300.

First prize: Gold medal, No. 39, the Motor Manufacturing Company's 8-h.p. M.M.C.

Second prize: Silver medal, No. 24, the Swift Motor Company's 6-h.p. Swift.

Class C.—Vehicles declared at a selling price of £300 to £400.

First prize: Gold medal, No. 41, S. F. Edge, Limited, 10-h.p. Gladiator.

Second prize: No. 62, Mr. Oscar Thompson, 7½-h.p. Wolsley.

Class D.—Vehicles declared at a selling price of £400 to £500.

First prize: Gold medal, No. 92, New Orleans Motor Company's 12-h.p. New Orleans.

Second prize: Silver medal, No. 91, De Dion Bouton's 12-h.p. De Dion.

Class E.—Vehicles declared at a selling price of £550 to £700.

First prize: Gold medal, No. 105, Speedwell Motor and Engineering Company's 10-h.p. Gardner-Serpollet.

Special gold medal, No. 114, Captain H. H. P. Deasy's 14-h.p. Martini.

Class F.—Vehicles declared at a selling price of £700 to £900.

First prize: Gold medal, No. 130, Captain H. H. P. Deasy's 16-h.p. Rochet-Schneider.

Second prize: Silver medal, No. 133, the Motor Manufacturing Company's 20-h.p. M.M.C.

Class G.—Vehicles declared at a selling price of over £900.

First prize: Gold medal, No. 137, the Daimler Company's 22-b.h.p. Daimler.

SECTION II.

1. Gold medal.—Messrs. Clarkson's Limited, combined engine, differential gear, pumps, etc., complete.

2 and 3. Silver medal.—Messrs. Clarkson's, Limited, oil burner and boiler feed device.

4. Silver medal.—Albion Motor Car Company, magneto ignition.

8. Silver medal.—New Orleans Motor Company, gear box.

14.—Silver medal.—Hozier Engineering Company, gear box.

Of the special gold medals to be allotted by the judges under rule 36 to vehicles which they may consider to possess specially meritorious features, a gold medal was awarded to the Daimler Motor Company for their 22-b.h.p. 'bus for general excellence, and silver medals were awarded to Messrs. John Marston, Limited, for the chain case on their 12-h.p. Sunbeam

car, No 65, and to Messrs. Evart Hall, Limited, for their 15-h.p. C.G.V. car, No. 127, for its dustlessness.

An additional special silver medal was awarded to the White Steam Car Company for their 10-h.p. White steam car, No. 116, for its small water consumption.

It must be understood that the medals awarded in Section II. and seq. are purely for the points specifically named and not in any way for reliability.

The judges have carefully considered the question of making a detailed report on the trials, but they are of opinion that the inelastic system of marking adopted, whereby each point laid down in the rules has to be dealt with with a view to marking for that particular point alone, renders impossible the exercise of any judgment on the general merits of the various cars apart from the points actually marked.

The report is signed by Messrs. R. E. Crompton, W. Worby Beaumont, Dugald Clerk, E. H. Cozens-Hardy, Jas. Swinburne, R. E. Phillips, Lyons Sampson, and Charles H. H. Nugent.

THE OBJECT OF COMPRESSION.

IT may not be clear to everyone why the gaseous charge in the cylinder of a petrol motor is compressed before ignition, especially since the compression absorbs power. By compressing the charge before ignition a proportionally higher explosion pressure is obtained, and also a much higher mean pressure during the power stroke. Much greater power is therefore obtained from the same engine, and the thermal efficiency—i.e., the relative amount of power obtained from a certain amount of fuel—is also increased. Generally speaking, the higher the compression the greater the power of an engine of given dimensions and the greater the fuel economy; but there is, of course, a limit beyond which it is not advisable to go, which is fixed by the conditions that when the compression is too high the charge is liable to ignite spontaneously at a too early period—a phenomenon called pre-ignition—that the motor is hard to start (for the first explosion the charge must be compressed by hand), and that if the piston and valves are not a perfect fit a considerable part of the charge is likely to leak out.

In the more modern petrol motor a marked increase in compression over that in the older patterns is noticeable. It is not surprising, therefore, that many of the older vehicles will not develop the power they should. In many cases the compression can be raised with beneficial results by applying a plate of cast iron to either the top of the piston or to the inner side of the cylinder head. The latter method is to be preferred because any weight added to the piston will destroy the balance of the motor, unless the other moving parts are altered to correspond.

The proper thickness of plate to give the best results is largely a matter of conjecture, and if one of the later models of the engine to be altered can be secured, and a comparison of the compression spaces made, this will be the better way. Otherwise the original percentage of compression space should be secured, and the desired percentage subtracted from it, when it will be a simple matter to make a wooden pattern containing the number of cubic inches necessary. The compression plate should not, under any circumstances, obstruct the port openings to the valves, and in many motors this will necessitate chamer-fearing away the pattern at the part adjacent to the ports.

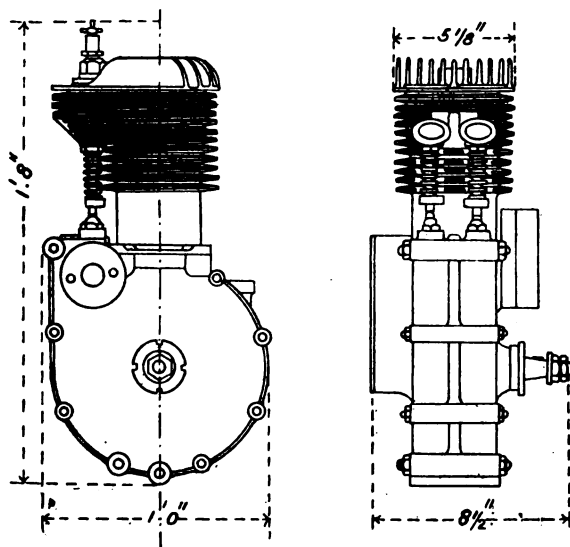
The original percentage of compression space on any motor may, remarks the "Horseless Age," be readily ascertained in the following manner. Have the inlet and exhaust valves closed and the piston at its innermost position. Now through the ignition plug opening, the cylinder being placed so this is uppermost, fill the compression space with water from a rectangular vessel so that the cubical contents may be readily computed. Find the displacement in cubic inches of the piston, and with these two factors the clearance percentage of any motor, no matter how irregular its port passages, may be readily calculated.

MOTOR-CYCLING NEWS.

JUDGING from present indications it would seem that 1904 is to be a motor-cycle year. The motor-cycle is no longer a toy, it is no longer in the experimental stage, in the popular acceptance of the phrase. The manufacturers are still experimenting, but they have already produced a machine that can be accepted as a finished article, constructed on scientific lines and thoroughly reliable. The evolution of the motor-cycle is a repetition of that of the cycle itself, with the important difference that in the case of the motor machine the manufacturers had a vast stock of experience behind them in the shape of the knowledge gained in bicycle designing. Doubtless in the next few years many changes will be made in the motor-cycle as we know it to-day. There will doubtless be some who will refuse to be convinced that the motor-cycle has reached the practical stage, just as there have been people in the past who held off buying bicycles because they were constantly changing. The majority of reasonable people are, however, coming rapidly round to the view that the fundamental lines of the motor-cycle are now settled, that the evolution of the next year or two is likely to be confined to details of engine position, lubrication, transmission, controlling devices, etc., and that the proper time to become a motor-cyclist is the present time.

THE results in the recent 1,000 kilometre reliability trial organised by the Motocycle Club de France have just been made known. Of the thirty-six competitors, only eighteen completed the whole competition, which was divided into two classes—(1) Machines having engines of a capacity of 200 cubic centimetres ($\frac{1}{4}$ litre), and (2) those of a capacity of 333 cubic centimetres ($\frac{1}{3}$ litre). In the $\frac{1}{4}$ litre class the machines are placed by the jury in the following order:—1, Motosacoche I.; 2, Motosacoche II.; 3, Gobron-Minerva; 4, Bruneau; 5, Bonnet; 6, Pécourt; 7, Paillard; 8, Mauxion; 9, Lurquin-Coudert; 10, Doué; 11, Chantemedé I.; 12, G. Knap; 13, Breuil; 14, Moto-Cardan. The classification in the $\frac{1}{3}$ litre section is:—1, Werner; 2, Lamaudière II.; 3, Chantemedé II.; 4, Lamaudière I.

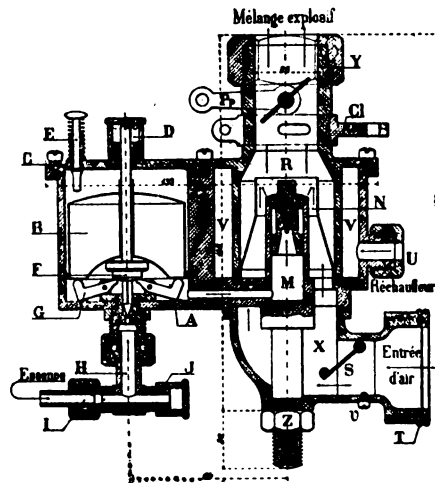
THE Motor Manufacturing Company, Limited, which has built up an enviable reputation for motor-cycle engines, has for the 1904 season brought out a new 2 $\frac{1}{2}$ -h.p. motor with mechanically operated valves, of which we are able to give two views herewith. The two valves, which are of large diameter, are placed side by



side. The two-to-one shaft is located at the top of the crank case, the gearing being on one end, and the commutator on the other. A contact-breaker of the ordinary make and break variety is now fitted to the new type, although the genuine De Dion contact can be supplied if required, or the engine can be arranged for high-tension magneto ignition. The motor, which

normally runs at a speed of 1,750 revolutions per min., weighs 64 lbs. Its dimensions are clearly shown in the illustrations.

FOR the coming season a new form of Longuemare carburettor for use on motor-cycles is being introduced, the feature of which is the addition of a device by means of which the amount of air admitted is regulated according to the speed of the engine; the faster the speed the more air and vice versa. Instead of the air entering directly into the spraying chamber R through a



series of holes in the base, a dome X is now fitted below these holes. This dome is provided with a simple automatic throttle or regulator S, consisting merely of a little weighted and pivoted shutter fitted in the opening to the dome. When the motor is not at work this little shutter practically closes the air inlet, then when the motor is started a partial vacuum is formed in the spraying chamber and the little shutter swings open slightly and allows sufficient air to enter to give a good explosive mixture. As the speed of the engine increases, more petrol comes through the sprayer and a greater supply of air is required to keep the quality of the mixture constant. The shutter S at the same time opens wider with the increased suction and automatically admits the additional amount of air required. The extra air supply inlet C' in the upper part of the vaporiser is retained, so that, in case further dilution of the mixture is necessary, it can readily be effected. The throttle valve for controlling the quantity of mixture supplied to the engine is seen at Pp. The new automatic arrangement has been well tested before being put on the market, and practically obviates all the trouble of having to find the correct mixture.

AMONG the many motor-bicycles shown at the recent shows was the Star which found a place on the Star Cycle Co.'s stand at the National. This is fitted with engines of 2 $\frac{1}{2}$ or 3-h.p. of the air-cooled type, located in a vertical position. The motor is fixed by means of cradles bolted to the two lower extremities of the down tubes by half a dozen bolts passing through lugs on the outer side of the crank chamber. Electric ignition, a Longuemare carburettor, a V-section belt, and two rim brakes operated by Bowden wires from the handle-bar are other features of the Star motor-cycle.

THE German Cyclists' Union has decided to organise for next season a motor-cycle reliability trial from Frankfurt-am-Main to Berlin.

THERE will be a Boxing Day run of the Motor-Cycling Club to Wisley (Hut Hotel) on the Ripley road, meeting at the Roehampton-gate entrance to Richmond Park (the shortest route to which is via Priory Lane, Barnes Common), at 11 a.m. As many members are frequently to be met with on the Portsmouth Road, it is suggested that the Angel, Ditton, will be a central rendezvous for members to assemble on Sundays, about 11 o'clock, during the off-season. The annual dinner has been arranged for January 5th, at Frascati's.

CORRESPONDENCE.

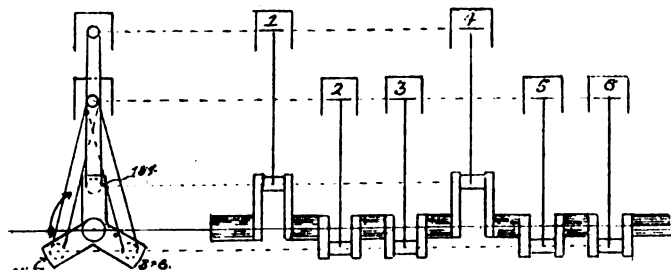
POWER DISTRIBUTION IN A 6-CYLINDER MOTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was very much interested in the article you published in a recent issue on "Power Distribution in Petrol Motors." The cycle of operations in a multi-cylinder engine is a question I have often discussed with many of my motoring friends, and I am keeping the article to refer to should the matter crop up again. You have dealt with two, three, and four cylinder engines and the cycle of operations in these. Now that we are promised a six cylinder motor, I have been trying to figure out the relative position to each other of the various strokes,—suction, compression, explosion, exhaust—of the six pistons during the two revolutions the crankshaft makes in completing the four cycle. I have not yet been able to satisfy myself on the point, and should be greatly obliged if you could elucidate the matter. I am sure there will be many readers of the *Journal* interested in the same, in addition to—Yours truly,

PUZZLED ONE.

[The accompanying sketch will perhaps aid "Puzzled One" in his question relative to power distribution in a six cylinder motor. The matter is not one that can be settled off-hand, and permits of more than one solution. The method we would recommend is as follows:—In the first place it is necessary to set the cranks out at angles of 120 degrees. This will give two cranks in a relative position at each of the three points, in the following order: Piston in No. 1 cylinder lined up to that in No. 4, No. 2 to No. 5, and No. 3 to No. 6. It is then an easy matter to see that the power will be equally distributed at



No. 1, Compression. No. 2, $\frac{1}{2}$ up compression. No. 3, $\frac{3}{4}$ down suction or inlet.
No. 4, Exhaust. No. 5, $\frac{1}{2}$ up exhaust. No. 6, $\frac{3}{4}$ down explosion stroke.

all points. When No. 1 piston is at the end of its compression stroke, No. 4 is at the end of the exhaust stroke; No. 2 is a quarter up compressed stroke, and No. 5 a quarter up exhaust; No. 3 is at three-quarter suction or inlet, and No. 6 at three-quarter down explosion stroke. Thus, upon completion of one revolution cylinders Nos. 1, 2, and 3 will have fired, and cylinders Nos. 4, 5, and 6 complete the second revolution, all firing at equal distance, again to be picked up by No. 1, the cycle of explosions being repeated without any break.]

THE TYRE QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "A Mechanical Engineer," in your issue of the 14th ult., a tyre such as he desires is already on the market. He stipulates that it must be resilient, long-lived, non-puncturable, and, above all, durable and cheap. All these qualities are claimed to be possessed by the tyre to which I venture to draw attention. It is that of the Patent Grooved Solid Tyre Company, of Leicester; it is a solid tyre with a continuous Clincher back fixed firmly in the rim. On the tread or road surface, however, there is a transverse groove every few inches, which divides it into sections. In this way there is much more resilience than with the continuous solid tyre, and it also allows for any lengthening of the tread caused by wear on the road. Another great advantage is that the tyre can be made to fit any existing pneumatic rim, and gives a much firmer grip on the road than the ordinary solid tyre.—Yours truly,

THOMAS BUCKTON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have seen the letter signed "A Motorist" in your issue of the 28th ult. I, like him, have had four months' experience of the Cassell band, which he commends, and it gives me pleasure to attest the value of the patent. I travelled great distances over the hilly roads of the Highlands of Scotland this year—roads, too, of that peculiarly Scottish character which rends the heart of a motorist and keeps him in a state of apprehension such as makes him lose the delight of motoring, fearful for the holding of his tyres, and I never had the slightest trouble either with tyres or bands. I venture to say that, for all practical purposes, the bands commended by "A Motorist" overcome the difficulty of safety of tyres. I would be derelict in a public duty did not I offer my

testimony to motorists of the boon which the band in question affords.—Yours truly,

ANOTHER MOTORIST.

BRAKES FOR MOTOR-CYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I read with great interest, in your issue of the 21st ult., a letter from the Rev. Edwin Noyes re the new Wass and Cocks belt rim brake. I may say that I have just had one fitted to my Phoenix Trimco, and fully agree with everything that he says about it, as I can now pull up my machine almost instantly with this brake alone, and can also use it so as to ride in the very thickest traffic. I have not been pleased for a long time with the results to be got from my other brakes, but have now got all that I wished for in the way of brake power, and I am quite sure that any of your readers who have felt this same want would be fully satisfied if they gave this a trial.—Yours truly,

J. SCHOFIELD.

A MUTUAL AID SUGGESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Among the obstacles which have to be overcome by the motor-car in winning its way into universal favour is unquestionably the ignorance of the public regarding its nature, capabilities and handling. In the latter particular even the users of motor-cars have at first much to learn, and unfortunately they have to gain most of their knowledge unassisted. The lessons given by agents relate chiefly and necessarily to the matter of control, since it is, in the nature of the case, impossible to give each purchaser a complete mechanical education, with instructions as to what to do in any one of the hundred and one contingencies which will inevitably arise. The pupil therefore goes through these lessons with the assumption that the vehicle is in perfect order, and his education in the art of keeping it so begins only when he gets the vehicle on the road.

It is at this point that I consider all users of motor-cars can derive mutual benefit by exchanging notes of their experiences in the handling of the vehicle and its maintenance. It must doubtless be admitted that the owner of a motor-car, who is not blessed by nature with an instinct for things mechanical, is in a desperate case, and a weekly visit to a repair shop is probably his only hope. I believe, however, that many owners of motor-cars have acquired them because they take pleasure in possessing and operating such a piece of almost sentient mechanism as a good motor-car soon proves itself to be. These persons are not by any means mechanics by profession; they may be physicians, lawyers, or men of business; but either at once, or soon after they have acquired a car, they begin to feel an interest in its mechanism for the mechanism's sake. If breakdowns occur, as breakdowns will, they take pride in telling just how they tided over the difficulty. Doubtless they soon learn, but unquestionably they would be better prepared for the emergencies as yet unencountered, if each had the benefit of the other's experience. Now that you, Mr. Editor, have opened your correspondence columns to the ventilation of motorists' little troubles, I venture to ask those who have the necessary experience and knowledge not to be backward in coming forward. It takes time to sit down and write a letter, but I am sure that the writers will, in the end, be benefited by the responsive efforts of others, and by the discussion which will be evoked by such communications.—Yours truly,

A BELIEVER IN MUTUAL AID.

QUERIES RE TYRES AND IGNITION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I ask you the following questions re motor-car?

1. Solid tyres being a necessity in my case, are gear-driven or chain-driven cars best? Is the live axle unsuitable for solid tyres?
2. Are ball bearings suitable for solid tyres? Do the balls not break?
3. Is magneto ignition reliable and lasting, and what are its disadvantages?—Yours truly,

C. T. ELMSLIE.

[In respect to gear or chain-driven cars, when solid tyres are used, we should strongly advise the chain-drive. There being more vibration on solid tyres than on pneumatic, the possibility of cracking balls would be somewhat increased, and therefore it would undoubtedly be safer to fit roller or even plain bearings. Magneto ignition in its present stage is as perfect as anything, the only point being that it is somewhat more expensive in the initial outlay.]

THE SPEED OF TRAM-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will any reader kindly inform me why Mr. Moffat Ford is allowed to take all the trouble and expense on himself with respect to

his actions regarding the speeds of electric tram cars. He is fighting the tram companies himself. I am rather astonished that motorists do not volunteer to help him. It is a matter of great interest to all who participate in this "pleasurable pastime." I do not see why electric trams are allowed to rush through crowded thoroughfares as they do. If the "Man in the Motor-car" attempts any such speed he is had up at once.—Yours truly,

THOS. E. HENDERSON.

A CASE DISMISSED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is with a certain degree of satisfaction that I put on record the fact that a case of alleged furious driving brought against me, and heard at Brentford last Thursday, was dismissed. At the time, it appeared to me so bad that I wrote to the Automobile Club, of which I am a member, and they handed my letter over to the Motor Union, and it was the Union with Mr. Staplee Firth who were responsible for the dismissal of the case, after a hearing of nearly two hours. More especially is it gratifying, as we were told when we entered the Court, that it did not matter very much what defence we had, the result would be "£10 and costs."

When I was stopped, a few Sundays back, at Hanwell, I took the trouble to get down, and Mr. Dickson (the friend with me) and I interrogated the police officers, so that at the Court we had a good many facts to put before the Bench. One of them was that a motor-bicycle was being pushed by two men and pedalled by another, and that this bicycle was with us for 150 out of the 220 yards. Of course, it is obvious to anyone that a bicycle could not travel at the alleged speed that I was going, viz.—21 miles an hour. This incident, although small at the time, proved to be of very material importance.

I should advise motorists not only to stop and take a little time in collecting evidence, but to go to the court and fight the case, always provided they can afford it, or, like myself, have the assistance of the Motor Union.—Yours truly,

F. GUY LEWIN.

MOTOR VOLUNTEER CORPS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to your correspondent who conceals his identity under the pseudonym "Volunteer," I would like first to remark that in my opinion it is a pity "Volunteer" should have committed himself to print with so little correct information on the subject as only to demonstrate his colossal ignorance. My remarks as to the necessity of officers in a military organisation are quite correctly reported, and I would further add that the proportion of officers in a corps, extended as the Motor Volunteer Corps is over the whole of Great Britain, is bound to be somewhat larger, for purposes of organisation, than in purely local units. I do not know what "Volunteer" means when he suggests that the corps consists of 24 officers and 49 privates, unless he intends to mislead the public. In the November Army list there were 22 officers, and on the roll of the corps 84 private members—nearly double the number alleged by "Volunteer." Having exposed these glaring inaccuracies I can only suppose that "Volunteer" will feel impelled by soldierly sentiment to withdraw his insinuations and apologise to this unit of His Majesty's forces, of which he is presumably a loyal member.—Yours truly,

MARK MAYHEW, LT. COL.

O.C. M.V.C.

ACCUMULATOR MANAGEMENT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We wish to put before your readers the following warning. On many makes of accumulators it is printed on the instruction label that distilled water should be added occasionally to make up for loss caused through evaporation. This is correct, but it is carried too far by the average amateur. When acid gets spilt through the accumulator being turned upside down or turned over, it seems to be the general thing to make up the loss with water: the result is that in time the accumulator contains nothing but water, and when this is the case trouble commences; the accumulator will not hold its charge, the paste begins to leave the plates, and general ruin sets in. The reason why we give this warning is that in several cases recently we have had accumulators of all makes brought us with one cell badly sulphated. After several hours' trying to get a charge into same and finding the voltage on both cells was only 2.5 volts, we tested the acid, and found this was simply water, without even the weakest trace of acid. After emptying out this cell and filling with correct acid and charging for several days, the accumulator has come up all right again. In one instance an accumulator contained nothing else but water, and had been utterly ruined. It is getting quite a common occurrence now to receive accumulators in this condition for recharging, and the number that are ruined yearly must be considerable. Water and acid in skilled hands and proper charging can work wonders on accumulators, but in unskilled hands it becomes an expensive item. We trust this will explain one reason why an accumulator will not hold its charge. We have had some of our best makes of accumulators ruined by this, and the blame thrown on us. New accumulators sent

to customers have been returned; on testing the strength of supposed acid, it has been in all cases a very weak solution, about one drop of acid to each cell. Not only do we speak to protect our own make of accumulators, but for all accumulator manufacturers. Our advice is, do not trust so much to distilled water; take the battery to a competent electrician, who understands the manufacture of accumulators, and get him to add the necessary acid.—Yours truly,

T. W. THOMPSON AND CO.

BENZ v. LIGHT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be very grateful if some reader would inform me whether a 3½-h.p. Benz with Crypto compares favourably, for pace up inclines, with a voiturette or light car of about the same power? From a mere tyro's point of view the great weight, i.e., 10 cwt., of a Benz must absorb so much of the power necessary in going up hill. Any information on the subject will be gladly read, as several of my friends as well as myself are much disappointed in the performance of our Benz cars as soon as a quite slight upward grade is met, and our cars have to go up on second speed.—Yours truly,

D. BEAUMONT.

KICKING ENGINE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of your numerous readers inform me why my engine gives a sort of kick when running slowly? It is a 5½ to 6-h.p. single cylinder. Has it anything to do with the exhaust not freeing itself sufficiently soon enough? Any hint to overcome the difficulty will be much appreciated by—Yours truly,

"WINCONA."

["Wincona" might try retarding his ignition rather more than he does at present, as this may in all probability bring about a cure. The kicking would not be due to any effect of the exhaust gases, but more likely to small particles of metal in the cylinder head becoming incandescent and so causing a kind of premature firing, which would not be discernible at high speed. In the event of this not being the case the throttle may be slightly at fault, not allowing the engine to take an equal charge each revolution, and thus getting erratic explosions.]

PETROL AND STEAM. A SUGGESTED COMBINATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was wondering the other day if anyone had ever tried to propel a motor-car with petrol and steam engines combined. My idea was this. The exhaust pipe of a petrol motor, a quick running one, soon gets red hot; if, instead of connecting the pipe to a silencer, it was formed into a spiral coil and passed through a boiler, would it not heat the water sufficiently to get up steam in the boiler to drive a steam engine? The steam engine might be put in gear to help the petrol engine up hills, or at any time when sufficient steam was generated.—Yours truly,

D. J. M.

[D. J. M.'s idea is specious, and we have heard it put forward before. A little consideration, however, will show how little could be expected from it in practice. The absolute efficiency of a good oil engine may be taken as between 16 and 20 per cent.: taking the latter figure, this implies that 80 per cent. of the heat value of the oil is wasted. Much of this is lost through the cylinder walls, and even if we assume that more than half, say 50 out of the 80 per cent., is carried off by the exhaust, we know that the efficiency of a small steam-engine is seldom more than 1 to 3 per cent. Taking it as 2, we may conclude from this rough estimate that if we had a 20-h.p. motor, our auxiliary steam engine, heated from the exhaust, could not give us more than 1-h.p., certainly not enough to compensate for the extra weight and complication. And in this rough calculation we have neglected several factors that would further reduce the result.]

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you be so kind as to inform me whether my 6½-h.p. "Napoleon" car with De Dion engine would carry solid tyres on the back wheels during the winter months? Also, can any make of solid tyre be fitted without altering the wheel-rim? My overheating has been at last cured, thanks to the kindly help of your correspondents. The trouble was due to a deposit of about 2 inches of rust-flakes at the bottom of the water-jacket.—Yours truly,

"OPOSSUM."

[We are inclined to advise "Opossum" not to fit solid tyres to the back wheels of his car for winter use. The extra vibration and wear would

probably cost doubly in the long run in the way of repairs. In the winter months pneumatic tyres are really more essential than in the summer.

THE CASSELL NON-PUNCTURABLE BAND.—"A Motorist" writes that this is obtainable from the Glasgow Motor and Tyre Company, 71, Waterloo Street, Glasgow, and not from the address given in the last issue.

HEAVY OIL CARS.—Messrs. J. Petrie, Sons and Company, who enquire for the makers of cars using paraffin as fuel, are referred to the Roots Oil Motor and Motor Car, Limited, Chicheley Street, York Road, S.E.

TECHNOLOGICAL AND SCIENTIFIC DICTIONARY.—Replying to T. Andrews, the publishers of this work are Messrs. Geo. Newnes, Limited, Southampton Street, Strand, London, W.C.

THE 5-H.P. HUMBERETTE CAR.—"Tilehurst" writes:—"I think it would be of much interest to your 'moderate means' readers, of whom I form a unit, if some private user of the 5-h.p. Humberette car would send a short account of his experiences with this little car."

ROADSIDE EXPERIENCES.*

BY THE HON. C. S. ROLLS.

It is difficult to remember the many amusing adventures we have all of us had at different times, but I have jotted down a few of the most interesting ones that I can remember. My own experiences began in France in 1895, and I subsequently brought over to England a Peugeot carriage of 3½-h.p. This was considered a very powerful and almost dangerous machine, the most powerful one previously made being 3½-h.p. It was rather a top-heavy vehicle, hung on three springs, and it used to sway terribly when going down hill; it had a V-type Daimler engine behind, made by Messrs. Panhard and Levassor. As soon as I started to drive this thing out of Victoria Station, I was stopped and summoned for not having a red flag. I managed, however, to get a kind of permission from the Chief Constables of Hertfordshire and Cambridgeshire, who kindly said they would instruct their men to look the other way when I came along. This enabled me to start on my first journey from London to Cambridge. We deemed it advisable to run by night only, and the first part, as far as Potter's Bar, was covered according to the law, each of us taking it in turns to carry the red lantern, walking on foot in front. At one point the monotony was relieved by giving a lift to a policeman. I happened to be walking in front and got into conversation with the bobby. "Evening!" said he. "Evening!" said I. "One of these 'ere motors?" said he. "Yes," said I. "Don't see many of them these things about, but I should like to have a ride on one; they does seem to me to be so huncanny," said he. "Jump up!" said I. So up he got into the car and said: "Now you can just let 'er go as 'ow you please down this 'ere 'ill," holding himself on with one hand and his helmet with the other, "for there ain't no one on the beat for another mile and a 'alf." So away we went, greatly relieved at being able to let her out, after having crawled for so long at four miles an hour with the engine hot. After Potter's Bar we were free, but the car was not going well—much time was lost stopping for water, which was often very difficult to find; we frequently had to get into private gardens and draw from people's wells. But the fun was when we stopped in a village, the car made so much noise that it woke up everyone in the place, and night-clad figures appeared at every window.

Of course there were no radiators in those days, and the pump would not work above a certain temperature. You had to ascertain if the pump was working by sticking your hand under a pipe in a box behind, and as it was usually boiling hot, the passenger got tired of being burnt and got into a habit of saying "Yes" whenever he was asked if the water was circulating. This eventful run, after many troubles, ended in our arriving at Cambridge at 9.30 a.m.; this made a total time of eleven and three-quarter hours, or an average speed of under five miles per hour. So tired were we that I went to sleep momentarily several times while driving, and was awakened by feeling the car going off the crown of the road. My passenger slept all the latter half of the journey.

In November, 1896, I had my first smash—and this occurred, unfortunately, the night before the London to Brighton run. I was on my way up to London for this run, when going down hill at Hatfield the right front axle broke clean, and the whole car went over on its side with a tremendous crash, which I can still hear now. The car had a big canopy and was very top-heavy. Neither of us in front were hurt, but there were two passengers sitting behind, who had been fast asleep; when we shouted to them all we got was a grunt, but, fortunately, as it turned out, neither of them was badly hurt. We had, as usual, been about ten hours doing forty miles, and it was now about 10 p.m., so we had some difficulty in collecting the wreckage and getting the car to a stable. This done, we adjourned to a small inn, where our shaken passengers were attended to. We were then given the state bedroom (which was so small that you could not find the window), and proceeded the next day by train.

Everything used to go wrong excepting the tyres, which were solid, and even those used to come off sometimes and catch in the tyre brakes. In no case could you run much more than ten miles without stopping, for fresh water was then required, and it was often a difficulty to get

water just when you wanted it. The best thing was what Mr. Frank H. Butler used to do with his Benz car—sit on the side of the road with a bottle of port and wait for a tramp; when the tramp arrived he sent him across the fields for about two miles with a canvas bucket that leaked, so that when he got back to the car the bucket, of course, was empty.

The chief source of trouble in those days was generally loose nuts; split pins were rarely troubled about. Consequently, anyone walking behind a car with a basket would pick up a varied assortment of nuts and bolts, chains and lubricators, bits of the engine, belts, &c. Another great source of trouble was the ignition. It is, of course, essential that the tubes should be a bright red, but sometimes it seemed impossible to get the burners to burn properly, or to keep them alight. The most troublesome machine in this respect was the Bollée. The Bollée, as you may remember, was a curious looking, low-built three-wheeler, with a single driving wheel. If you wished to start out at ten in the morning, you had to be up at six. You then tried to light up the burner, but could not get anything to burn. You then discovered you had turned on the wrong tap, so you promptly turned on the other one full. You then went to light up, and you lit up! Cries for the fire brigade! After a bit you got it to burn, and it made a noise like a cross-Channel steamer waiting to start. The next thing was to get the engine to go. You first looked for the starting handle, which you had probably dropped on the road the day before, and when you had found it you proceeded to wind up for an hour and a half without a sign of an explosion. At last you got a bad back-fire—two days in hospital! After that you gave it another two hours' grinding, and at last the engine started off, and you were so surprised that you let go of the handle, which promptly flew off and hit you on the nose! Then the engine made a noise like an old pig grunting, and you set out on the machine prepared for a lively time. The car was mostly made of tin biscuit boxes and wire, and you got plenty of practice in soldering, etc. The cylinder wore oval in about a week, and would not hold any compression. In spite of copious oiling, the back of the cylinder was generally red hot. However, a great deal of fun could be got out of a Bollée, especially on greasy roads, for the tail continually swayed from side to side, and would sometimes come round and look at you when going down hill. My first run on a Bollée was from Coventry to Cambridge, in 1897, and we had a most interesting run, which ended by colliding with a cart. In '98 I had become possessed of a 6-h.p. Panhard, the first type fitted with wheel steering. I had many adventures on this car, perhaps the best of which was a run from Paris to Barentin. The most eventful run I ever had in France was in company with Colonel Mayhew, Mr. Russell, and Mr. Hutchinson.

THE MOTOR-CAR ACT.

GLOUCESTER.—A committee of the Stroud Urban Council recommended that the speed of motor-cars under the new Act should be limited to five miles per hour. At the ordinary meeting of the council, however, several members said the proposal was ridiculous, as many people could walk five miles in an hour. Ultimately the recommendation was altered from five to ten miles per hour.

In the area of the Gloucester Council speed on all narrow by-roads will be limited to ten miles an hour.

HERTFORDSHIRE.—The Watford Urban Council will take no action with regard to the ten mile schedule.

YORKSHIRE.—Thirty warning boards are to be erected at dangerous places in the area of the Driffield Rural Council.

SURREY.—At the Shere Parish Council, last week, it was decided to recommend to the District Council that motorists driving into the village be limited to a speed of ten miles an hour, and it was resolved to take steps to warn motorists that the following corners are especially dangerous: Coombe Bottom (at the top), Coombe End, the Surrey Trading Corner, Gomshall Tanyard Corner, and the corners at Gomshall Mill Bridge, Queen's Street and High View End.

WALES.—The Caerleon Council has received a letter from the St. Mellon's District Council inviting the council to consider the advisability of applying to the Local Government Board for powers to make regulations prohibiting or restricting the driving of motor-cars on highways which do not exceed sixteen feet in width, or on which motor-car traffic would be especially dangerous. It was stated that such a regulation would prohibit any motor-car passing through Caerleon. A reply has been sent to the St. Mellon's Council that there were no roads in Caerleon which came under the definition.

LANCASHIRE.—The Watch Committee of the Leigh Town Council have resolved that, with a view to the safety of the public, the Town Clerk be instructed to make application under the Motor Car Act to the Local Government Board to issue regulations limiting the driving of motor-cars on highways within the borough to a speed not exceeding ten miles per hour.

STAFFORDSHIRE.—At the last meeting of the Staffordshire County Council, consideration of the Motor Car Act was reported by the Main Roads and Bridges Committee, and they recommended the Council to delegate to the Committee until the Council meeting in February next all the powers of the Council under the Act, except applications under Section 9, which gives power to reduce the speed limit in certain districts to ten miles an hour. Mr. Peach moved an amendment that the words in reference to the section be omitted, to enable applications for

* From a paper read at the A.C.G.B.I. on the 3rd inst.

the reduction of the speed limit to be dealt with by the Committee. He moved the amendment to check those—idiots, he was on the point of calling them—who drove furiously through the streets to the danger of the public. Mr. Cotton, while admitting that he knew nothing about the matter, seconded the amendment, because he supposed Mr. Peach was in the right. The amendment was defeated by a large majority, and the recommendation approved.

DERBYSHIRE.—The Fairfield Urban District Council decided on Monday night to petition the County Council to limit the speed of motor-cars to ten miles an hour over their eighteen miles of roads. Mr. Headington said such a course was silly, and was calculated to drive the motor-car industry from England.

CLUB NEWS.

WOLVERHAMPTON.

THE members of the Wolverhampton and District Automobile Club have held a highly successful smoking concert at the Victoria Hotel, Wolverhampton. Mr. William Owen presided, and among those present were Councillors Grout and Dickinson, and Messrs. S. R. Rhodes (hon. sec.), T. J. Barnett, W. A. Foster, T. Cureton, O. Evans, T. H. Edwards, F. F. Sharp, E. W. Edwards, W. Evans, F. Bishop, B. B. Pearson, G. Evans, G. Green (borough surveyor), E. A. B. Woodward (water engineer), W. Edwards, W. A. Crombie, F. Platt, and J. E. Knight. At an interval in the programme the members pledged the health of "The Visitors," after which the Hon. Secretary (Mr. S. R. Rhodes) announced the result of the recent hill-climbing competition on the Hermitage Hill, at Bridgnorth as follows:—Motor-cars: 1, Geo. H. Evans (Wolseley); 2, E. B. Bayliss (Wolseley); 3, W. Clarke (M.M.C.); 4, T. Cureton (Sunbeam); 5, J. Lisle (Star); 6, P. S. Bayliss (Sunbeam); 7, W. Bayliss (Wolseley); 8, H. Moore (Star); 9, J. O. Evans (Wolseley); 10, A. E. Jenks; 11, Captain W. H. Haden (Star); 12, J. F. Mills (Sunbeam); 13, F. C. Bishop (Star); 14, A. E. Price (Vauxhall); 15, J. H. Dark (M.M.C.); 16, E. W. H. Trusselle (De Dion). Motor-cycles: 1, E. Lisle, jun. (3½ h p.); 2, C. F. G. Boyes (2½); 3, H. W. Jenks (2); 4, F. Cremonini (3). After announcing the results, as above, Mr. Rhodes said the club had now been in existence about three years, and he ventured to say that it had made for itself an important position among provincial clubs. He believed one result of their efforts had been to break down much of the prejudice which every new movement had to face, and was pleased to add that the membership now numbered seventy.

YORKSHIRE.

ON Friday, the 4th inst., the fourth annual dinner of the Yorkshire Automobile Club took place at the Great Northern Hotel, Leeds, Mr. E. H. Hepper presiding over a good attendance.

Mr. Arthur Willey, who proposed the toast of "Automobilism," said he knew but little about motoring, and that little was not particularly favourable. (Laughter). From a professional point of view, however, he commended everything motorists did, and he did not praise those who were too careful. (Laughter). He had set out by motor-car from Leeds at one o'clock for Ilkley, where he had been invited to luncheon, and he had reached his destination at 5.45, having had to walk 4½ miles to telephone for assistance for the car. He believed that whatever prejudice there was against motors would soon be lived down, and advocated a closer union among automobilists.

Responses to the toast were made by Messrs. J. W. Stocks, Rees Jeffreys, and H. A. Jones. Mr. Jeffreys, discussing the new Act and its probable operation in the country, said that the central body were anxious that they should not find the roads to the country closed to them here, there, and everywhere, with speed limits of ten miles an hour imposed in many places. The Automobile Club wished nothing to be done in a hole-and-corner way, and they therefore suggested that any application to close a road must be advertised in the local papers and the London Gazette, then that there should be a local inquiry in every case, and that the Local Government Board inspector should visit the road in question. If they could get the Local Government Board to adopt that proposal they would have some guarantee that no ill-considered proposals would be foisted on the country.

The "Visitors and the Press" was given by Mr. T. Atkinson, Messrs. C. Jarrott and W. F. Wray replying. The former said that the gigantic proportions which automobilism has attained in this country was shown by the fact that our imports from France alone this year were estimated at £2,000,000. Speed, however, was a crime in England. It seemed an extraordinary thing that an enlightened country like England should take such a view, but so the fact was. Under the old Act motorists were persecuted, but they would live that down. In the future, if they carried out the true spirit of sportsmen, recognised the rights of the road, and had consideration for others, they need have no fear as to the consequences.

Mr. W. Penrose Green proposed the Chairman, whose response brought the proceedings to a close.

MR. E. FAIERS, of Bradford, has promised to give a lantern lecture on Thursday evening, January 14th, 1904, in the Leeds club room. A new departure is about to be made in holding fortnightly meetings

at the rooms, commencing Thursday, January 28th, at 8 p.m., by having discussions on the motor-car and parts thereof. Mr. Winn will open the first discussion. Any members willing to commence discussions on any other branches of the subject are invited to communicate with the hon. secretary, Mr. Alf. W. Dougill.

SOUTH AFRICA.

ON the 9th ult. the Automobile Club of South Africa held a reliability and consumption trial from Capetown to Houw Hoek and back, a distance of 100 miles. The road was a difficult one, not only on account of the hills but also because of the numerous "sluits." Sixteen cars competed and only two succeeded in making non-stop runs—a Lan- chester and a Gladiator.

SCOTTISH.

THE annual dinner of the Western Section of the Scottish Automobile Club was held on Monday, at the Windsor Hotel, Glasgow. Lord Inverclyde presided, and the croupiers were Mr. John Adam (chairman of the section) and Mr. Wm. Weir. About 130 gentlemen were present, the company including the Marquis of Ailsa, the Right Hon. Sir J. H. A. Macdonald, Lord Justice-Clerk of Scotland; Colonel R. E. Crompton, C.B.; Count Louis de Clercq, member of the Administrative Council of the Automobile Club de France; Sir John Shearer, Mr. Norman D. Macdonald, Chief-Constable Stevenson, Mr. John Macdonald, Mr. John Wilson, M.P., and Mr. Robert J. Smith, honorary secretary. After the usual loyal toasts had been duly pledged, Lieut-Colonel Hugh Reid, V.D., responded to the toast of the Imperial Forces, proposed by Mr. J. R. Richmond.

The chairman proposed the toast of automobilism, and remarked that the development which had taken place in automobilism was little short of marvellous. Speaking, however, as a commercial man, he would confess to a feeling of disappointment that motor-cars had not done as much in commercial work as he hoped they would yet do. He was hopeful that the development of motors would help to keep this country going, and keep it amongst the foremost nations of the world.

The Lord Justice Clerk, in responding, said the movement was making progress not only as a means of sport, of touring, of carrying on business, visiting the sick, but in what was perhaps a still more important department—a department in which he ventured to say we were far ahead of everybody else—namely, motor transport upon the road. He did not think many men in this country fully appreciated what enormous value there was in the development of motor transport, in the revival of the use of the road, and in the prosperity which would be brought to many districts, and through those districts to the whole country. He counselled them to carry out the new Act in a reasonable manner, and if they did so they might be sure that very soon they would be able to ask for and obtain many concessions which were now denied to them.

Colonel Crompton and Count Louis de Clercq also responded.

Mr. Norman D. Macdonald proposed "The City and Corporation of Glasgow," to which Preceptor Mitchell responded. "Our Guests" was given by Mr. John Adam, Sir John Shearer replying. "The Chair" was proposed by Mr. John Wilson, M.P.

ALLEGED NEGLIGENT CUSTODY OF MOTOR-CYCLE.

AT the Brompton County Court, on Monday, before Judge Stonor, Mr. R. Holder, Elsenham Street, Southfields, S.W., brought an action against Mr. Howard Smeed, trading as the Howard Motor Company, 731, Fulham Road, S.W., claiming the return of a motor-bicycle, or £27 10s. as its value. The plaintiff stated that in July last he had a motor-bicycle which he desired to sell. He took the machine to the defendant's shop, where he saw both Mr. Smeed and his manager, Mr. Cummings, about the matter. The machine cost him £32 (trade price), and he asked Mr. Smeed to try to sell it for £27 10s., agreeing that anything above this amount should be retained by defendant for his trouble. The machine was placed in defendant's shop window and marked "For Sale." A few days later plaintiff went to Yorkshire, but on the morning after his arrival he received a telegram from his wife and a letter from the defendant stating that the machine had been stolen. After other evidence the defendant was called. He said that when a machine was left at his shop for repair or sale he always gave a receipt or had a written agreement. It appeared that the plaintiff was acquainted with Cummings, who had falsely represented himself as a partner in the business, and when plaintiff left his machine at the shop Cummings placed it in the window with a ticket upon it. Witness then made Cummings take off the ticket because he (defendant) had no instructions to sell it. The only time that he saw plaintiff was once when he called and wanted to hire a motor-car. On that occasion plaintiff said nothing about the machine in question. No one could have known where the key was put except himself, Cummings, and a man named Kelly, who, however, was with witness on the night in question. When plaintiff called, after the machine was missing, he (plaintiff) said, "No doubt Cummings knows something about it." The Judge: The question is whether this machine was ever left in the defendant's charge, and I am of opinion that it was not. As to the question of negligence, it appears that the defendant took as much care of it as he did of his own machines. I find for the defendant, with costs.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Croydon	C. Walker, Brompton	32	£5.
Slough	J. Broome	—	£2.
Marlborough St., London	A. Bridge, Maida Vale	24	Dismissed.
Woking	A. C. Rae, Marlborough St., S. W.	21	£3.
"	B. Hopkinson, Wimbledon	—	£3.
"	D. Kelly, Surbiton	21	£3.
"	F. May, Albemarle St., W.	19	£3.
Brentford	F. G. Lewin, Hampton Wick	21	Dismissed.
Kingston	H. B. Nelson, South Kensington	22	£3.
East Grinstead	D. Willoughby	23½	£10, etc.
Steayning	E. Manville	21½	£4 7s.
Beaconsfield	E. Hanni (driver to the Duchess of Manchester)	25	£5.
Tonbridge ...	H. F. Hemmings, London	26	£5, etc.
"	J. Dottridge	18	£1, etc.
Southwark ...	G. Graham, Battersea	—	Dismissed.

* Indicates Motor-Cycle Case.

the rear of the car. There were five lights burning on the car at the time. The judge gave judgment for the amount sued for.

At the Brompton County Court, on Monday, before Judge Stonor and a jury, Mr. G. F. Sporne, 10, Upper Tooting Road, S.W., brought an action against Captain Haig, Cadogan Gardens, Chelsea, claiming £50 in respect of personal injuries and damage to a bicycle, alleged to have been caused through negligence on the part of the defendant in driving a motor-car. Mr. Earle, counsel, appeared for the plaintiff, and Mr. Staplee Firth, solicitor, for the defendant. Plaintiff's counsel stated that on the 7th July last he was riding his bicycle along St. Margaret's Street, Westminster, when the defendant's motor-car, which had been stationary in the middle of the road, was turned suddenly, and came with great violence against the plaintiff. Corroborative evidence having been given, the defendant stated that when he was ready to turn he held his hand up to a policeman who was directing traffic, and turned at an ordinary rate. The Judge said that the chief question for the jury was whether the defendant was justified in turning until he saw sufficient of the road to be sure that it was perfectly clear, and that it was safe to turn. The jury found in favour of the plaintiff, assessing the damages at £20. His Honour gave judgment accordingly, and allowed costs.

At Kingston, J. B. Bluett-Duncan, of Ravenscroft, Upper Richmond Road, Putney, sued the West London Cycle and Motor Repository, Broadway, Wimbledon, for £3 7s., for damage sustained by a motor-car sent to defendant to effect a sale. Plaintiff said he sent a motor-car to defendant to be sold. The car remained for some time unsold, and then defendant sent a man for it. It was found that the car was damaged and had depreciated in value. Defendant said that when the car was first taken to his establishment the man who received it gave a receipt



An Automobile Meeting at Baden Baden.

[Automobil W.-H.]

CLAIMS FOR DAMAGES.

In an action at Edmonton County Court to recover damages caused by the bolting of a horse which was frightened by a motor-car, Mr. Windsor, solicitor for the plaintiff, urged that a horse which would take alarm at a motor-car ought not to be allowed on the highway. The Judge would not give a decision on the point, saying that he preferred to leave it to the Court of Appeal to settle.

At Newport County Court, Mr. Baldwin, pig dealer, sued Mr. Henry Shaw, Albemarle Street, London, for the recovery of £8 5s., in respect of damages for negligent driving of a motor-car. It transpired that the plaintiff's car drove into a lot of pigs in the neighbourhood of Llanwrn, killing one and injuring three. His Honour gave judgment for the amount claimed.

His Honour Judge Owen was also called upon to deal with a case in which Mr. Harris, Llandegveth, sought to recover £16 1s. in respect of damages caused by a motor-car. A sum of £3 and 8s. costs had been paid into court, with a denial of liability on the part of defendant, Mr. Richard Clay (Cardiff). His Honour gave judgment for £6 1s.

At the Bloomsbury County Court, before Judge Bacon, Mr. Charles Pinoli, of Wardour Street, W., sued the Great Central Railway Company for £24 10s. damages done to his motor-car. The plaintiff's solicitor stated that on the evening of August 24th Mr. Pinoli was driving in his motor-car, accompanied by his daughter, down Regent Street and Langham Place. At Mortimer Street a van belonging to the Great Central Railway Company dashed round the corner and into

for it as being in good order within five minutes, in which time he could not have overhauled it to see what was wrong. A special expert had to be employed on the car before it would go satisfactorily. Defendant held that the car was damaged before being taken to his works.—His Honour said the receipt cleared plaintiff, and defendant had no answer. He gave judgment for plaintiff.

POLICE TRAPS.

The police have a measured quarter of a mile down the Tartar Hill, near Cobham.

News reaches us of a trap on Streatham Common, where motorists should beware of the police.

On the Bath road, at Hitcham, the police have a measured quarter of a mile.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, DECEMBER 19, 1903.

[No. 250.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.

Xmas.

IN taking this opportunity of wishing all our readers a Happy Christmas and a Prosperous New Year we would remind them that, owing to the forthcoming festive season, we shall go to press earlier next week than usual. Contributors and correspondents are requested to despatch their "copy" to reach us during Monday, or, at latest, first post on Tuesday morning. All communications relating to advertising should be sent to the manager of that department on Monday, with the exception of prepaid advertisements, which can be received up to first post on Tuesday.

The Reliability Trials.

ELSEWHERE we give some interesting extracts from the paper which Mr. E. H. Cozens-Hardy read at last week's meeting of the A.C.G.B.I. It was a pity that it was planned for the day on which so many motorists left for French shores, for the paper was one of the most valuable that has been produced at the Club this winter, and it would be well if opportunity could be found for a second paper by Mr. Cozens-Hardy analysing in fuller detail the valuable tabular matter shown for the first time last week. On another page we give a résumé of the marks obtained by the various competitors in the Reliability Trials—a useful corollary to the list of awards published in our last issue.

Points of Discussion.

SOME points brought out in the course of the discussion should not be lost sight of. As the starter of the Speed Trials at Southport, Mr. Shrapnell Smith was able to make some suggestions of a practical character for the guidance of organisers of future events. There a large number of people were allowed on the track, to the inconvenience of the officials, while the public interest was lessened owing to the difficulty of obtaining the results with promptitude after the different events. Mr. Crawley took up a point in the paper as to giving the judges a wider discretion in making their awards, and argued that the lines of the competition should be rigidly adhered to. Then Mr. W. C. White followed with a plea for the continuance of the Trials, if only for the sociability and friendliness they introduced into the trade. These gatherings gave those engaged in the industry an opportunity of meeting each other such as would be possible under no other conditions. Quarterly trials would hardly meet the want, and would not always be equally fair to the competitors, owing to the varying atmospheric conditions. Mr. M. O'Gorman mentioned the fact that competitors hardly ever troubled to read the rules for the tests for which they entered, and referred to the way in which M. Barbareoux had killed the weight limit in the Irish competitions by the way in which he stripped his Benz Parsifal.

Difficulties of Organisation.

MR. LYONS SAMPSON gave it as his opinion that the real judges were the observers, for the marks awarded depended in a great measure on the observations of the Observers. It was gratifying to notice that the winning cars in the annual Reliability Trials obtained 90 per cent. of the possible marks they could obtain. Mr. J. F. Ochs emphasised the point made by Mr. White as to the sportsmanlike temper shown during the events, and testified to the good work done by the Club in organising such contests. An interesting story of the difficulties of organising the Speed Trials in Ireland was told by Mr. Orde, whose good intentions to provide chairs and other conveniences for the timekeepers were frustrated by the energy of the police in putting "into durance vile" for the day the men in charge of the furniture, who were a little late in getting into Phoenix Park on the day of the Trials there.

Future Work.

MR. ORDE also dealt with the necessity of acquainting the public with the results of the contests at the earliest opportunity, and also as to the advisability of keeping them informed as to what was going on. For future events, a scheme with that in view had been devised, in which not only the telephone, but also the megaphone would be utilised. Mr. Burford agreed with the suggestion in the latter part of the paper, and expressed regret that a higher standard was not required of the Observers. Mr. Cross suggested that experimental work should be undertaken, and then Mr. Roger Wallace proposed a hearty vote of thanks to Mr. Cozens-Hardy for the way in which he had introduced the subject. The chairman of the Club did not see that they could put an end to the trials at present.

The Results of the Trials.

THE results of the trials, which we give on another page, will be regarded with keen interest by trade and public alike, and should be read in conjunction with the list of awards published last week. In our issue of October 3rd last we published a table of the daily runs of the various cars, and would now suggest that the results obtained should be made the subject of detailed criticism and discussion at the meetings of the Automobile Club.

Dulwich and Lewisham.

NEVER have London suburbs seen so many motor-cars as did Dulwich and Lewisham on Tuesday. The successful candidate in the former constituency, Dr. Rutherford Harris, is a motorist himself, and only a few weeks ago became the owner of the once famous "Le Passe Partout." It was computed that forty-five motor-cars were placed at his service during the day, including fifteen sent by Mr. Stroud, a well-

B

known solicitor. The Liberals in the constituency are said to have had more than thirty automobiles at work in Dulwich. The Prime Minister's motor-car was sent to the assistance of Major Coates, who had about sixty similar vehicles for the conveyance of voters. Mr. C. F. G. Masterman, the Liberal candidate, toured the constituency in a motor-car, and among those who lent their cars to one or other of the quartette of candidates were Lord Rothschild, Sir Thomas Dewar, M.P., Sir George Newnes, M.P., Sir J. Blyth, Sir W. Pearson, M.P., Mr. J. A. Baker, L.C.C., and Mr. W. H. Dickinson, L.C.C. One firm of mineral water manufacturers sent a dozen motor-cars to the assistance of one of the candidates.

Influencing Local Authorities.

THE circular issued by Mr. Rees Jeffreys to County Councils with reference to the registration of motor-cars, mentioned in our issue of the 5th inst., aroused much indignation among many leaders in local government. And although a second letter has been issued explaining that a wrong interpretation had been placed upon its intention, considerable harm has been done. The Hon. Arthur Stanley, M.P., has resigned from the Club as a protest. Meanwhile it is evident that the policy outlined in the original letter has had little weight with motorists, for there has been quite a rush of applications for the registration of cars, and we have heard of no cases in which vehicles have been registered outside the counties in which their owners reside.



A Military Reconnaissance. (See page 781 last issue.)

The Motor Volunteer Corps.

WE learn that the Secretary of State for War has decided, in respect to the outfit allowance for officers of the Motor Volunteer Corps, that the ordinary driving certificate of the Automobile Club of Great Britain and Ireland, countersigned by the officer commanding the corps, may be accepted as the qualifying certificate for the payment. A refund of the allowance will be required in the case of any officer who fails to serve for three years as an efficient. Last week we announced that Earl Roberts had consented that damage done to tyres during manoeuvres should receive compensation from the War Office, so that it would appear that the usefulness of the Motor Volunteers is being recognised in official circles.

Hooded Vans.

FOR several years Colonel Crompton and others who have studied the problems associated with street traffic have recommended that the hooded van should be made the subject of drastic regulation by borough and county authorities. Several councils are now moving in the matter, and after the 1st prox. a new bye-law to the following effect will be enforced throughout

the county of Glamorgan:—"Every tradesman's van or other covered vehicle intended to be driven by a person sitting inside thereof shall be so constructed with side windows or otherwise as to enable such person to see the approach of vehicles from behind on either side thereof." Many of the street accidents—and mishaps with horse-drawn vehicles are more numerous than many people would imagine—arise from the fact that the drivers cannot see the vehicles approaching from the rear or the sides. The provision of such windows would have the advantage of increasing the opportunities for observation.

London Regulations.

LAST February the London County Council made a bye-law prohibiting the use in the public thoroughfares of London of vehicles so constructed as to prevent the driver having an uninterrupted view of the traffic. Many protests were made, and the Local Government and Taxation Committee have drawn up an amended bye-law, to which it is understood the Home Secretary will consent. It is proposed, therefore, to repeal the former regulation, and the Council was on Tuesday asked to substitute the following, to come into force on May 1 next:—"No owner of a vehicle shall drive such vehicle, or permit the same to be driven, or to be upon any highway unless it be so constructed that the driver thereof shall have a full and uninterrupted view of the traffic of such highway in front and abreast of him on each side, and no person who shall be driving any vehicle upon any highway shall occupy such a position as will prevent or interfere with his having such full and uninterrupted view as aforesaid. Any person who shall offend against this bye-law shall be liable for each offence to a penalty not exceeding 40s." Mr. Johnson moved as an amendment:—"That the reception of the report be postponed until the Local Government and Taxation Committee shall have reported as to a proposed bye-law requiring vehicles to be fitted with brakes, in order that, if such bye-law be made, the two bye-laws could come into force on the same day, and thus unnecessary dislocation of business and expense to owners be avoided." The original motion was agreed to.

Motor-Car Imports and Exports.

NOTWITHSTANDING that the present is supposed to be the quiet season, the imports of foreign automobiles into this country show a further increase. The number of cars and cycles imported last month was 479, the value of the same being returned at £101,357. The value of the "parts thereof" is given as £22,623, so that we get a combined total for November of £123,980 as compared with £120,065 in October last and £91,462 (representing 289 cars) in November, 1902. Some of the imports were of only a temporary character, being reshipped to foreign destinations. Thus last month the shipments comprised 28 vehicles, amounting in value to £7,337, bringing down the net imports in November to £116,643. For the first eleven months of the year the net import of motor-cars, cycles, and parts stands at no less than £1,772,700 (representing roundly 5,890 vehicles). As regards the exports of automobiles of home manufacture, the shipments during the past month amounted to 91 vehicles, of a value of £22,545. Of parts the exports attained a value of £4,160, making a combined total for November of £26,705, compared with £15,635 (representing 49 vehicles) in November, 1902. To the end of November 814 vehicles of British manufacture had been exported this year, these, together with the "parts," representing a sum of £289,307.

An Active Policy.

FOLLOWING closely upon the meeting of provincial clubs recently held in London, and at a time when motorists will have to be particularly watchful of their interests, comes the announcement that it has been decided to hold monthly meetings of the General Committee of the Motor Union. This is a large and widely representative body, consisting of representatives of the A.C.G.B.I., the delegates of affiliated

clubs and the representatives of members who have joined the Motor Union individually. It will be seen that such a committee will be able to speak with an authoritative voice, and hence the interest with which the first meeting, to be held on the 11th prox., will be anticipated by motorists generally.

What the Provincial Clubs Want.

A.C.G.B.I. Ultimately a series of five resolutions was adopted suggesting (1) That a committee be formed, consisting of an equal number of members of the A.C.G.B.I. and the affiliated clubs, to decide upon all matters other than those purely domestic. (2) That the affiliation fee be reduced. (3) That each affiliated club have the uncontrolled management of its own affairs. (4) That each affiliated club shall have all the advantages now offered by affiliation and membership of the Motor Union, and (5) that a representative of each club represented at the meeting be appointed to form a committee to meet the executive committee of the A.C.G.B.I. before the February conference, and urge these requirements for adoption by the central body.

No Limit in Certain Towns.

THE Watch Committee of Manchester have adopted a report presented by the Chief Constable in connection with the Motor Car Act, one interesting clause of which is to the effect that no speed limit will be imposed at present. The committee do not purpose at the present time to take any steps with a view of restriction, as they trust that the owners of motor-cars and cycles will in the future, as they have in the past (with few exceptions), regulate their speed in accordance with the state of the traffic of the roads in the city of Manchester. A similar course has been taken at Hull. This sensible decision will appeal to those members of the public wishing to give motorists fair play, and we trust there will be no inconsiderate driving in those towns to lead to suggestions of an alteration of such a policy.

Motor Fire Engines.

AT the last meeting of the Edinburgh Town Council a discussion took place with regard to the provision of a motor-fire engine, this being recommended by the Plans and Works Committee. A report in favour of the matter was submitted from the Firemaster, who spoke of the work done by motor fire engines at Liverpool, Plymouth, Brighton, Portsmouth, Leyland and Tottenham. Very few supporters of the idea spoke in the course of the debate, several speakers urging—with proverbial Scotch caution—that the experience of those places was of too recent a date to warrant the Edinburgh Council sanctioning the adoption of a motor fire engine for the brigade. Treasurer Brown opposed the motion. From a statement made by the Firemaster the horse engines drove at the rate of eighteen to twenty miles an hour for the first mile, up to fifteen miles an hour for the next one and a-half miles, and after three miles at the rate of twelve miles an hour. He supposed the Motor Car Act would come into operation on January 1, and outside the city the limit would be ten miles an hour, so that he thought the question of speed need not be considered in support of the committee's case. It was ultimately agreed to take the matter back to the committee.

Railways and Automobiles.

LORD CLAUD HAMILTON, who, as president of the Norfolk Automobile Club, presided at the first annual dinner, reported on another page, seems to have become entirely converted, although not yet quite enthusiastic, as to the value of the automobile. It is only a few months ago since the chairman

of the Great Eastern Railway Company seemed to look askance upon the competition threatened by motor-cars, tram-cars, and other necessary means of locomotion in these days of rapid travel. He now rightly recognises that when once the appetite for travel is whetted, there is no limit to its development, and he has only to look to the enterprise of the North-Eastern Company to see how automobilism may be used in the service of the railway company. The North-Eastern Railway has had such success with its Beverley motor 'bus service, that it is now considering the question of providing a similar means of conveyance between Howden station and the village of that name, one and a half mile away. There are scores of places within similar range of the Great Eastern Railway service to which Lord Claud Hamilton and his directors might be able to turn their attention with a view to imitation of this excellent example.

A Practical Treatise.

So popular was the first edition of Mr. Paul N. Hasluck's work on "The Automobile," issued little more than a year ago, that a new edition has been called for, and this has just been published by Messrs. Cassell and Company, Limited. Although based originally on Laverne's "L'Automobile sur route," the work, in its present form, assumes an importance of its own. It has been extended to 832 pages, and there are nearly as many illustrations. More than 500 pages of the book are new, the descriptions of machines of historical interest only having been condensed to narrow limits, while an attempt has been made to set forth the details of all noteworthy European and American cars. Unfortunately the demands on our space at the present season of the year prevent anything like a full review of the volume; some of its salient features, however, must be mentioned in recommendation of a volume which has attained to the dignity of a standard work on the subject.



The Tony Huber Paris-St. Petersburg Car at the Paris Salon. Mde. Lockert at the wheel and M. Huber near the Bonnet.

The Scope of the Work.

HAVING given a lucid account of the evolution of the automobile from the patents of the seventeenth century to the days of Hancock and his contemporaries, Mr. Hasluck has two excellent chapters on steam cars, followed by three hundred pages dealing exhaustively with petrol motors, the transmission of motor power to driving wheels, axles, and steering gear, the wheels and tyres of automobiles, springs, frames, bodies, and brakes. Electric automobiles, petrol-electric carriages and motor-bicycles also come in for notice, no less than forty types of the latter being mentioned. Several pages are devoted to automobile records, etc., and the results of the leading trials and races of the last few years are given in convenient form and order. Altogether the work is one that no student of the motor-car should pass over.

Trials of 1904.

IN connection with the Motor-Van Trials to be held by the A.C.G.B.I. next year, the Club Committee of Organisation has been appointed, and it has been decided that the events shall take place in October and November next, the distance to be traversed being 2,000 miles. Unfortunately, as only two entries have been received for the trials of electrical vehicles, it has been agreed to abandon the idea of holding such tests during 1904. A special feature of the year's operations will be the holding of Trials of light cars costing not more than £300, and the Technical Secretary is preparing a scheme of work to be submitted to the executive.

Traction Engine Orders.

IN consequence of representations made to them, the Local Government Board have issued an order modifying the requirements with respect to the wheels of traction engines used on highways. The old orders provided that the driving wheels should be smooth soled or have diagonal cross-bars not less than three inches in width and $\frac{3}{4}$ -inch thick, with spaces between them of not more than three inches. By the new order the wheels may be shod with blocks of wood, which must be arranged in two or more rows and work on efficient springs or other elastic material, so as to yield with the pressure of the weight of the locomotive, but not to such an extent that the block shall be depressed below or even brought level with the iron tyre.

Registration in Guernsey.

FOR the first time since the law affecting automobile matters was promulgated, Guernsey automobilists have had to register their vehicles. The last day was the 15th of November, after which all owners of machines previous to this date, and who have failed to register, are liable to a penalty, in the discretion of the Court, not exceeding £5. The result, of the registration is interesting. By this means it is possible to know the number of automobilists in Guernsey. So far the figures to hand show that there are twenty-two motor enthusiasts in the island. The majority, however, are motor-cyclists, as in the total number there are only five who use motor-cars. The registration fee, or tax, is £1, which has to be paid annually. The number plate required by law is comparatively small and need not be lighted after sunset. The plate, both on motor-cars and motor-cycles, is fixed at the back.

Cylinder Lubrication.

FROM the Henry Wells Oil Company, of Manchester, comes a valuable volume on cylinder oil and cylinder lubrication. This is the preliminary result of an investigation into the character of cylinder oils by Messrs. H. M. Wells and W. S. Taggart, and some of the conclusions arrived at are as applicable to the lubrication of the cylinders of petrol motors as of gas, oil, and steam engines. Professor Hele-Shaw is responsible for an introduction in which he insists on the necessity of tests in all matters of modern engineering, and gives his testimony to the value of the experiments in connection with cylinder oils that the Henry Wells Oil Company have promoted during the last two years at the Walker Engineering Laboratories, Liverpool. These investigations are still in progress, and whenever definite results are arrived at they will be published. So far there has been ample demonstration of the difficult nature of the scientific work in investigating cylinder lubrication. It has been shown that two samples of oil may come from the same place, manufactured under the same conditions, though at different times, and have the same general appearance, and yet give totally different results when tested under high pressure, with high temperatures, as a cylinder lubricant.

Signposts Wanted.

DURING the recent Endurance Contest in the United States the need of guide posts was demonstrated so forcibly that the America Motor League now talks of providing such "aids to travellers" wherever they are required. In England we are not so badly served in this respect, although the suggestion made recently as to the provision of name plates over post offices might be usefully carried into effect. But in the south of Ireland the absence of signposts amounts to a scandal, and if the good people of the Emerald Isle hope to have any influx of motorists from this side, the erection of guide posts is one of the matters that will require early attention from the local authorities. We hope to hear from readers as to places where this duty is neglected.

Local Authorities to See to their Provision.

IN fact, guide posts are essential to the pleasure of motoring, and, although there are many excellent guide books and route maps issued by publishers, they cannot be expected to be adequate substitutes for the wooden finger that points the way and tells the distance with accuracy. Local authorities should not be allowed to neglect their obvious duty in this respect.

Marine Motoring.

INTEREST in the marine motor will be quickened by the Reliability Trial, for motor-boats to be held under the direction of the A.C.G.B.I. next year. These will spread over a period of three days, the course being confined to Southampton Water or extended to the Solent as may be thought expedient in the prevailing conditions of weather. The boats will probably be run for twelve hours each day, credit being given for non-stop runs as well as for the aggregate distance traversed.

Robbing Pleasure Resorts.

EVERYWHERE it should be pointed out that the closing of roads may lead to reducing the prosperity of large districts. How many villages in Devon and quiet resorts elsewhere have learned to regard the automobilist as a source of revenue? Hotels have been refurbished, village streets have been repaired, and an air of welcome given to several places that a few years ago were shabby centres of tourist resort. Is such enterprise to be robbed of its reward? The answer will be found in the attitude of local authorities throughout the country to motorists.

MESSRS. CARLESS, CAPEL AND LEONARD have reduced the price of their standard petrol a penny per gallon.

WITH reference to the *canard* which has appeared in a morning paper as to an English motorist representing France in the Gordon Bennett race next year, it may be pointed out that the team has not yet been selected.

A PATENT brush for removing the dirt from finger nails without tearing the skin has been brought out by the Star Brush Company, Limited. It is a simple invention likely to be of service to motorists who have experienced difficulty in this respect.

MESSRS. J. E. HUTTON, LIMITED, have entered three cars for the British Eliminating Trial for the Gordon Bennett team, entries for which close on the 31st inst. Salleron and Leger will drive two Mors cars in the French eliminating tests, while Gabriel, Stead, and De Brou are mentioned as the probable drivers of the three De Dietrich cars.

AT the meeting of the Pontefract District Council on Saturday, Mr. Baines gave notice that at the next meeting he would propose that a motor-car be provided for the surveyor, Mr. Senio, who now covers his district by means of a motor-cycle.

The Paris Motor-Car Exhibition.



General View of the Salon.

GENERAL IMPRESSIONS.

TO say that the sixth annual Salon d'Auto nobles eclipses all its predecessors is but to give a faint idea of the excitement that is at present prevailing at the Grand Palais, in the Champs Elysées, Paris. No sooner were the doors open on Thursday of last week than the rush began and within a few minutes the building was a mass of people representative of all nations. It is estimated that on the opening day, fully 200,000 persons visited the Exhibition. Since then a continuous stream of pedestrians and vehicles has wended its way to the huge building, and at the time of writing there seems no sign of any diminution in the attendance. The show is a veritable Babel of languages, the visitors emanating from all parts of the world. Great Britain and Ireland are well represented, and in fact to give the names of those who have or are attending the Exhibition would mean the production of a directory of all the leading British motorists and motor traders.

A cursory inspection of this year's *Salon* leaves the visitor with a vivid impression of the general progress of the industry, though there are few conspicuous novelties to attract his attention. Advance is noticeable in the minor details of construction, and the number of *chassis* and sectional models of their mechanism provides a bewildering wealth of material for careful study. By far the largest number of cars are four-cylinder vehicles of 16-h.p. to 24-h.p., nearly every maker having a car of this description on view, while two cylinder vehicles are fewer in number. The three-cylinder cult is decidedly making headway, as, besides the 8-h.p. Panhard, three-cylinder cars are exhibited by Cottureau and other firms, one noticeable example being the 18-h.p. Louet, which claims to be a pioneer of this design, and has other features of notice in the shape of a double-spark ignition, consisting of a two-pole plug in cylinder head and a single-pole at the side, the two plugs being connected in series. It also has an ingenious gear, in which one or other pair of a series of pairs of gear-wheels is slid into engagement transversely instead of, as usual, longitudinally.

The same firm also show a six-cylinder motor, which is by no means the only example of its kind in the show; in fact, the tendency to employ smaller cylinders and more of them is unmistakably the ruling idea at present.

Ingenious and often complicated gear-boxes are legion, though few makers break away from the accepted practice of sliding gears longitudinally into mesh; the variations are for the most part attempts to obtain a direct drive on top speed without an idle-running lay-shaft. Propeller-shaft transmission, while almost universal on the smaller cars, is spreading upwards, as witness the 24-h.p. Hotchkiss, which, with its peculiar cylindrical bonnet, resembling an early Victorian locomotive minus its funnel, attracts as much attention as any car in the show. It is certainly not beautiful, though, in view of the remarkable reputation the car has acquired, Fournier's explanation that it was designed so as to be unmistakable at a glance has some reason. The adoption of ball-bearing crankshafts, both by Hotchkiss and C. G. V., is a refinement that it is impossible to look on with complete confidence. The question as to what would happen if a ball break is met by the statement that "it doesn't." Time alone can decide.

Honeycomb radiators are, of course, plentiful, both the Hotchkiss with brazed triangular tubes, and the Decauville with the tubes of a sort of quatrefoil section expanded into a tube-plate, being noticeable attempts at making them less vulnerable; but there is certainly an increasing tendency to use a tubular radiator plus forced draught, a sort of compromise between the two being the Guetat radiator, visible on the Passy-Thellier and several other cars. This has vertical flattened tubes, each made of two brass ribbons, about two inches wide, corrugated at intervals of about 1½ in., and united by a good breadth of solder at their edges.

As regards frames, the "chassis embouti" decidedly preponderates, and a remarkable example of it is seen at the Darracq stand—a frame pressed complete out of one piece of steel, without angle pieces or rivets; cross-bars and supports for engine in-

cluded, the latter being in the form of a sheet enclosing the motor below, somewhat after the style of the Decauville of this year. There are, however, many armoured wood frames; while Georges Richard displays a combination of pressed steel frame with tubular underframe. This wide adoption of pressed steel frames, together with the increase in wheelbase, due to the demand for bodies with a side entrance for the rear seats, has led to the frequent adoption of frames narrowed in front, in order to obtain better steering ability. And while on the subject of steering, the arrangement on the Hotchkiss car, in which a sliding sector takes the place of the usual pivot, thus causing the front wheel to turn on its centre, is worth remark.

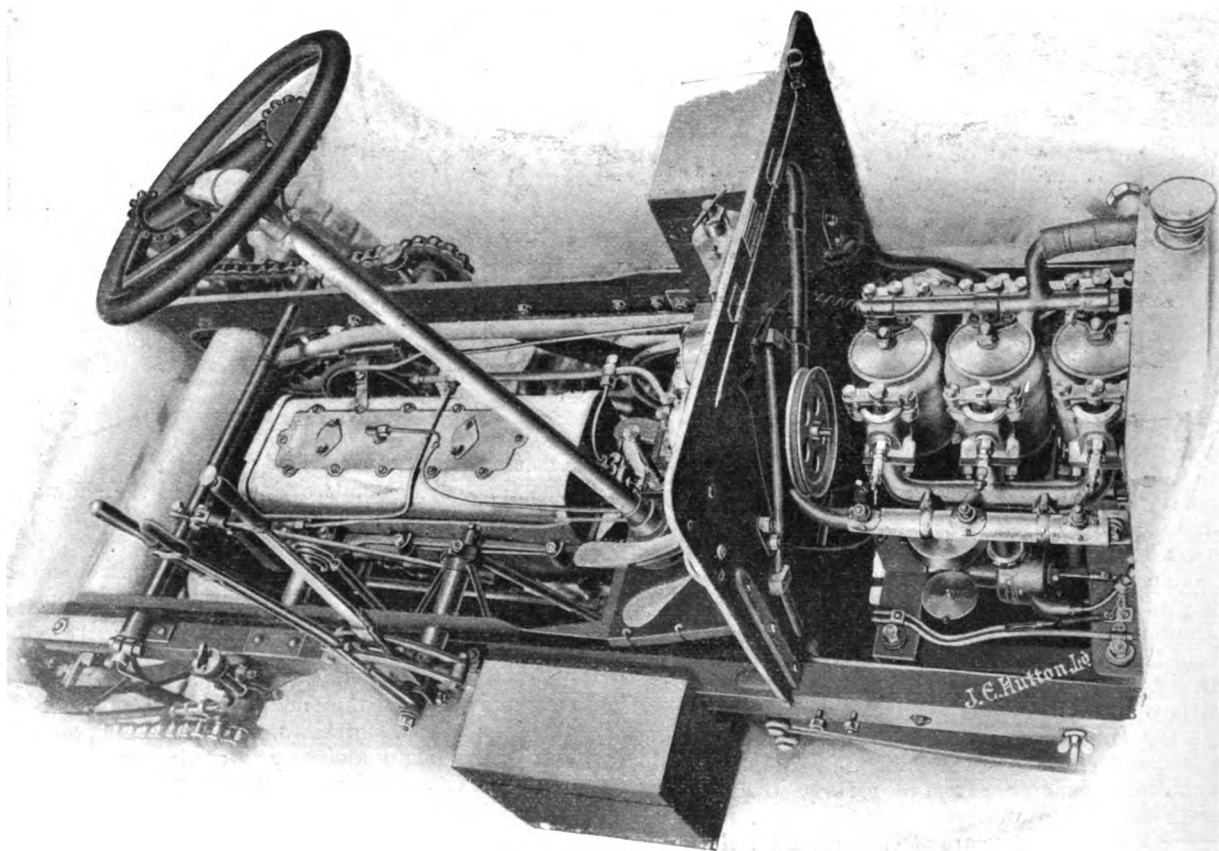
Throttle-governing is almost universal, and is often accompanied by devices to regulate the quality of the mixture automatically for varying engine speeds; in fact, novelty this year is more evident in carburettors than in anything else, though detail improvements are more numerous than ever. Among

and Bardon), have only their well-known record for economy and reliability to keep them in countenance.

R. W. B.

THE EXHIBITS.

Naturally one makes first of all for the stand of Messrs. Panhard and Levassor Company, where three types of car—8, 24, and 35-h.p., are shown, these figures in all cases being nominal. The two larger sizes mentioned are fitted with four-cylinder engines, the cylinder being cast separately and fitted with mechanically-operated inlet valves on the opposite side to the exhaust. Ignition is by means of a chain-driven magneto on the dashboard. The wood and steel frame is retained as well as the Krebs automatic carburettor. A ribbed radiator, set in a frame which forms the water tank, is employed, a fan being provided to induce the necessary current of cool air through the same. Several specimens of the new three cylinder car are also on view. The engine



[Fig 11.—View of Chassis of Panhard Three-Cylinder Car.

minor ones may be noted: the use of double helical gear teeth (Charron-Girardot-Voigt); indicator and graduation on fly-wheel to show position of pistons (Georges Richard); commutator cover fastenings without loose nuts, also an ingenious system of trembler regulation (Prosper Lambert); and many little points of like nature. Magneto ignition is widely used, and where it is not, a charging dynamo frequently accompanies the accumulators. Valves are mostly mechanically actuated, and a rough estimate seems to show that the balance of opinion is in favour of placing them all on one side of the motor, though exceptions are numerous. The new Panhard motor has independent cylinders, a practice which is spreading to some extent, and which certainly seems theoretically correct.

Freaks are singularly few in number, though a six-wheeled car (Janvier), steering with its front four wheels, which form a "hogie" under the motor, may be classed thus. Vertical engines reign supreme, the solitary exhibits, as far as French makers are concerned, of horizontal engines (by Gillet-Forest

is rated at 8-h.p., but this is nominal, the actual horse-power developed being given as about 12. The car is being made with frames of two different lengths, the shorter one being adapted for the standard tonneau body, while the longer is adapted to take the landaulette side-entrance body, to seat two or four persons. Generally speaking the car, as will be seen from the illustration (Fig. 11)—for which we are indebted to Messrs. J. E. Hutton, Ltd.—follows the well-known Panhard lines, although many important modifications have been introduced. The most important departure is the motor, which comprises three cylinders, each of which is self-contained and independent from its neighbour. The inlet valves, which are automatic, are placed in such a position that without undoing a single nut they can be freed, should they become gummy, with the finger, a departure which will be appreciated by practical motorists. The valves, either exhaust or inlet, can be removed in a few seconds, one nut only being required to be taken off, while no joints on the inlet pipes from the carburettor have to be broken. The ignition, which is electric,

is on an improved system; the wiring is carefully encased in a water-tight tube, and the connections of the sparking plugs are rendered so flexible that no fear need be entertained of their breaking or jarring off. The carburettor, which is of the well-known Krebs type, is fitted with a throttle actuated by the governor. This throttle can also be controlled by an ingenious arrangement on the steering wheel, in which position is also located the control for varying the time of ignition. The water-

A most strange-looking vehicle is a 35-h.p. "Grande Voiture de Voyage," a modified type of the old stage coach. There are seats for four persons in the interior, a detachable seat at the rear for two attendants, and a curious seat for a couple of persons on the top, for use, as Messrs. Panhard say, in fine weather. The car is altogether a somewhat uncanny looking vehicle, and he would be a bold motorist who would introduce it into London.

Much has been heard recently of the cars of the Hotchkiss.

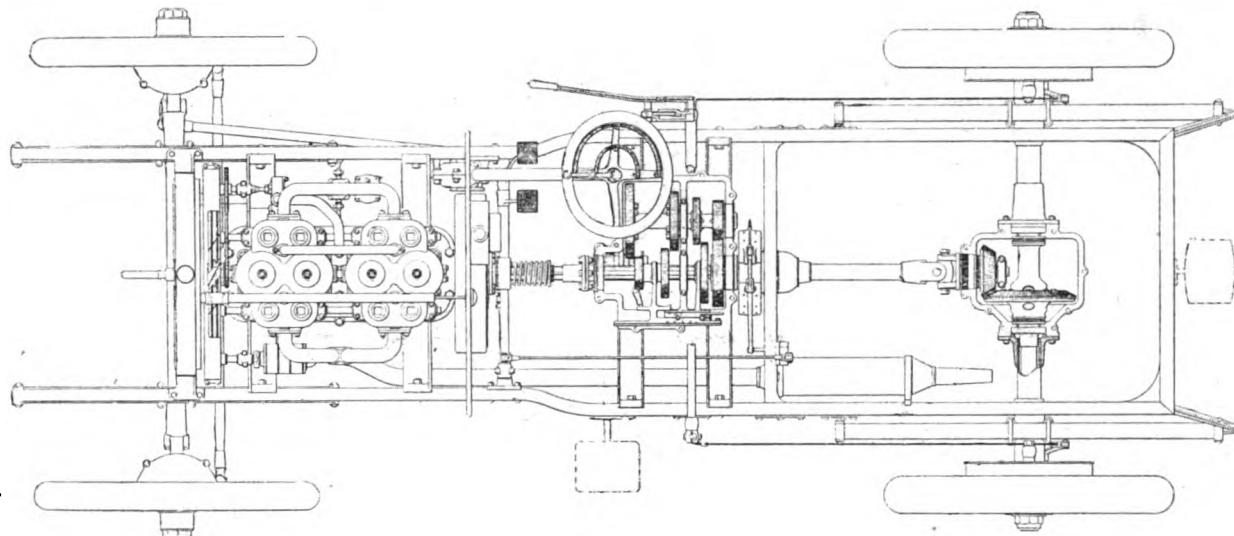


Fig. 12.—Plan of 35-h.p. Hotchkiss Car.

cooling is arranged with improved pattern radiator and centrifugal pump, while a manometer is fitted on the dashboard in view of the driver, so that he may at a glance see if the pump is working properly. The lubrication of the motor has been carefully attended to, and is so simple that, with the exception of periodically filling up the small reservoir on the dashboard every 150 miles, no further attention is required, the operation being entirely automatic.

A special fan driven by the engine causes an induced draught of air to be drawn in through the radiator, in front, so that should the car be standing in traffic for even quite a long period, the engine will not become appreciably heated. A simple

Company, of St. Denis, the sale of which is controlled by La Société Paris Automobile—or, in other words, M. Henri Fournier, the well-known racing chauffeur—and considerable interest is being shown in the cars, which are now being publicly exhibited for the first time. To permit of the chassis (figs. 12 and 13) being examined from all points of view, it is placed over a mirror, in which the underpart is clearly reflected. The Hotchkiss cars are being made in two sizes, 20 and 35-h.p. The chassis is of stamped steel, and is supported on four side springs and a transverse one at the rear. The engine comprises four vertical cylinders, cast in pairs, both the inlet and exhaust valves being mechanically actuated and interchangeable. The ignition is by magneto

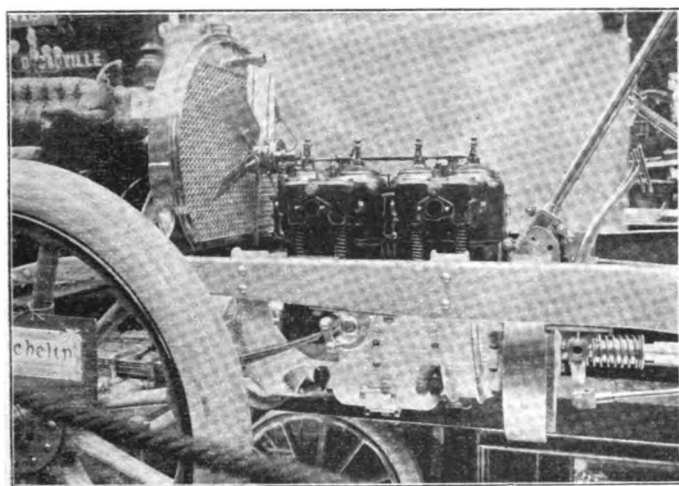


Fig. 13.—View of Front Portion of Hotchkiss Chassis.

leather-covered cone clutch transmits the engine power to the gear box. The change gear, which is on the well-known Panhard system, provides four speeds forward and reverse, actuated by a single lever. From the countershaft to the back wheels the drive is by means of side roller chains. The brakes, which act both backwards and forwards, are metal to metal. The application of either the hand or foot brakes also withdraws the clutch and disconnects the engine.

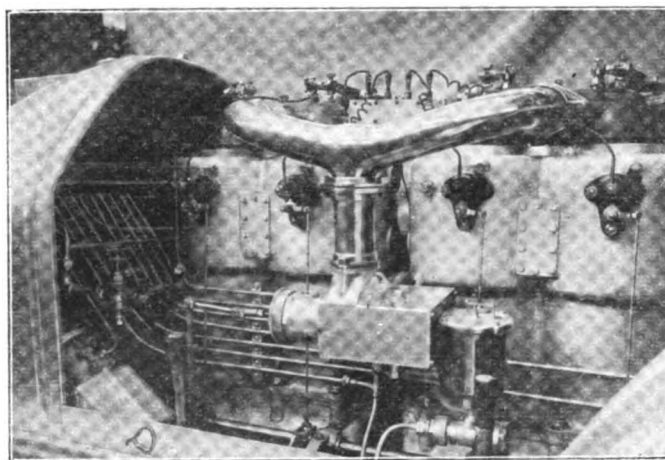


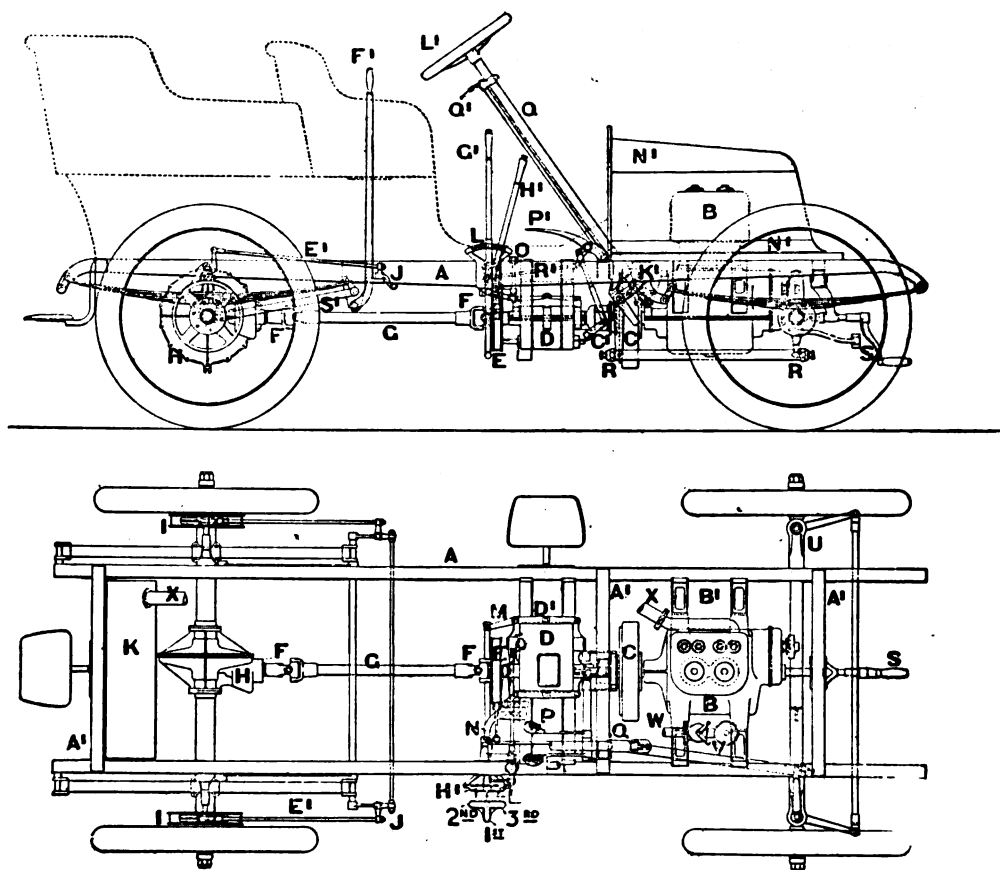
Fig. 14.—The Engine of Mr. W. K. Vanderbilt's 90-h.p. Mercedes. (See page 806)

while the water circulation is maintained by a gear-driven pump. The radiator is of the honeycomb type, of a circular shape, which, although it may be due to its novelty, does not strike one favourably from an æsthetic point of view. The tubes of the honeycomb are of a triangular section, giving a large radiating surface. The fan, inducing a current of air through the tubes, is made in such a way that the inclination of the blades or vanes can be varied from the driver's seat, and the air draught increased as desired,

as, for instance, in mounting long hills. The clutch is on novel lines; it is of the leather-faced type, and is provided with a locking device which prevents any tendency to slip. Four speeds forward and a reverse are provided, the power on the top speed being transmitted direct to the rear live axle through a cardan shaft and bevel gearing. The rear axle is entirely enclosed; the case which encloses the differential and large bevel gear being divided in a horizontal, instead of, as usual, in a vertical plane. The pivots on which the front wheels are mounted lie in the centre of the hubs, and the steering rod is placed out of harm's way behind the forward axle. The brake on the countershaft is of the contracting band type, and those on the rear wheel hubs of the internal expanding variety. Naturally, any style of carriage body can be

Jenatzy won the Gordon Bennett race this year; it belongs to Mr. Clarence Gray Dinsmore, and is now fitted with a large tonneau body. The 90-h.p. vehicle (Fig. 14) is one of the solitary examples of this type not destroyed in the fire at Cannstatt; it belongs to Mr. W. K. Vanderbilt, jun., and is a remarkable specimen of automobile construction. The raked steering is one of its marked features; while the relative simplicity of the controlling mechanism is another characteristic of this speedy car. In England, the Mercedes is usually seen with a racing or tonneau body. With its long frame, however, it is well adapted to accommodate a side-entrance brougham body, as the excellent example on view fully testifies.

The new models of the Georges Richard Company, represented



Figs. 15 and 16.—Plan and Elevation of 10-h.p. Argyll Car (see page 807).

A Frame.
B Engine.
C Flywheel and clutch.
D Gear box.
E Main shaft brake drum.
F Universal joints.
G Propeller shaft.
H Live axle.
I Driving wheel brake drum.
J Driving bk. compensating levers.
K Silencer.
L Change speed quadrant.
M First speed bell crank.

N Second and third speed bell crank.
O Reverse.
P Clutch pedal.
Q Steering pillar.
R Steering ball joints.
S Starting handle.
T Front axle.
U Front axle swivel.
V Carburettor.
W Carburettor feed pipe.
X Exhaust pipe.
A' Frame cross bars.
B' Engine carriers.

C' Clutch disengaging levers.
D' Gear box clamps.
E' Driving wheel brake rod.
F' Brake lever.
G' First, second, and third speed lever.
H' Reverse speed lever.
I' Irreversible steering nut.
J' Steering wheel.
K' Natural cooling bonnet.
L' Brake and clutch pedal.
M' Mixture and ignition quadrant.
N' Main shaft brake rod.
O' Radius rods.

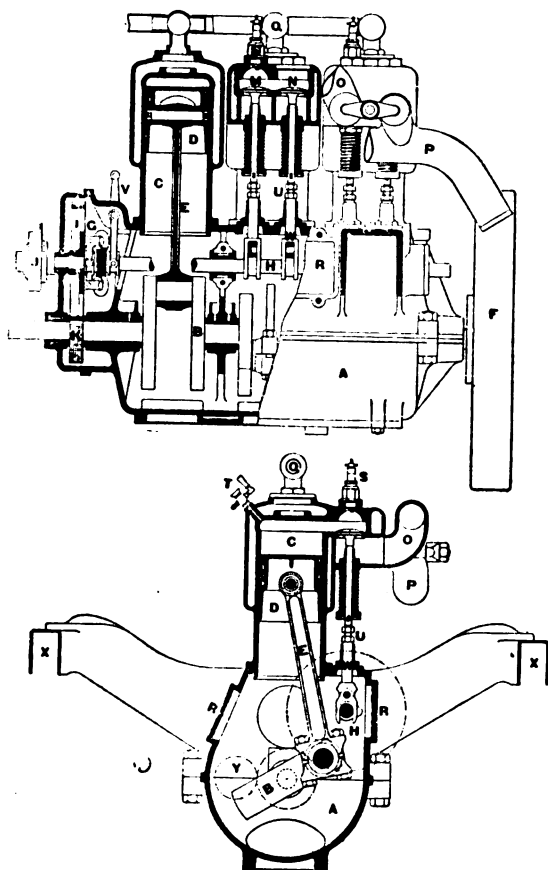
fitted to the chassis of the Hotchkiss cars, of which much is likely to be heard in the near future.

To the list of English exhibitors has to be added the name of Messrs. John Marston, Limited, who exhibit one of their four-cylinder 12-h.p. Sunbeam cars, the chains of which run in oil-bath cases, which not only prolongs the life of the wearing parts by keeping them absolutely free from grit and dirt, but also ensures silent running. Unfortunately the vehicle is displayed in an out of the way corner, where it does not receive the attention it deserves.

Throughout the whole day the Mercedes stand is the centre of a crowd of interested spectators. The vehicles displayed include specimens of the 20-24-h.p., 28-32, 40, 60, and 90-h.p. types. The 60-h.p. car on view is the identical one with which

in England by Messrs. Mann and Overton, comprise quite a number of special features. For next year 8, 12, 16, 24, and 40-h.p. cars will be available. Two-cylinder engines will be fitted to the 8-h.p. and 12-h.p., while those of the 16 and 24-h.p. will have four cylinders. Except that the 8-h.p. car has only three speeds forward in addition to the reverse, while the others have four, the following remarks apply to all four vehicles. The main frame is of stamped steel, the engine and gear being supported on a secondary frame of tubular construction. The cylinders, which are cast in pairs, have mechanically operated inlet valves, these being set on the opposite side to the exhaust valves. Magneto ignition is being retained, but the Georges Richard Company have struck out a line for themselves in deciding to abolish the pump, relying on the thermo-siphon action in conjunction with

a fan-cooled beehive radiator for the water circulation. The carburettor is an automatic air-regulation one of the company's own patent. The transmission is by means of a cardan shaft and bevel gear on to a live axle, a new point being the introduction of a universal joint between the engine and gear box, this not only relieving the shafts of the latter of all strain, but permitting the clutch to be dismantled without interfering with the gear box in any way. With the object



Figs. 17 and 18. —Sectional Views of Argyll 3-Cylinder Motor.

- | | |
|------------------------------------|-------------------------------|
| A Crank chamber. | N Exhaust valve. |
| B Crank shaft. | O Inlet pipe. |
| C Cylinders. | P Exhaust pipe. |
| D Pistons. | Q Water unions. |
| E Piston rod. | R Inspection door. |
| F Flywheel. | S Sparking plug. |
| G Governor. | T Compression tap. |
| H Cam shaft. | U Adjusting pins for valves. |
| I Cam half-speed wheel. | V Governor controlling lever. |
| J Commutator. | W Valve lifter. |
| K Half-speed pinion on main shaft. | X Frame. |
| L Rollers for cam. | Y Pump driving wheel. |
| M Inlet valve. | |

of rendering the cars quieter than ever, and also of keeping down the dust, a new form of silencer is being adopted; it is of large size and is placed transversely across the rear of the car, the burnt gases finally emerging through two flattened pipes projecting at an angle to the silencer. Enclosed internally-expanding brakes are now fitted, while a new point which will appeal to all who have suffered from "back kicks" of the motor, owing to the ignition not having been retarded, is an arrangement whereby the act of putting the starting handle into gear at the same time automatically retards the ignition; the moment the handle is released the ignition returns to its normal position. The 12-h.p. and 16-h.p. chassis are of sufficient length to take bodies with side entrance, while the 24-h.p. type is made with chassis of two different lengths. On the stand is also shown the chassis of a 40-h.p. four-cylinder car with chain transmission, which is, I understand, intended for the Hereditary Crown Prince of Russia.

The main features of the Argyll cars are already well known to the readers of the *Journal*, so that it will only be necessary for me to briefly refer to the improvements introduced

in the 1904 models which the Hozier Engineering Company, Limited, now exhibit for the first time. Three types are displayed, a 10 h.p. two-cylinder, a 12-h.p. three-cylinder, and a 16-h.p. four cylinder. The engines of the 10-h.p. and 16-h.p. cars are of the latest Aster type, with mechanically-operated inlet valves, while the 12-h.p. three-cylinder motor is of the company's own manufacture. In designing this engine advantage has been taken of the experience gained by the Hozier Company in the use of all the best known makes. The left hand side of the engine is shown in section through the centre of the cylinder in Fig. 17. The piston D is provided with four piston rings, the bottom ring holding the wrist pin in position, dispensing with the use of any small screws which are liable to get loose. The water jacket is of good capacity. The connecting rod E is machined from a steel stamping, and the crankshaft B is made from a high quality of nickel steel, the balance weights being solid with the crankshaft. There are bearings between each crank; they are all of the same size, and interchangeable with the connecting rod end bearings. The central portion of the engine is shown in section through the middle of the valve chambers; the valves are all alike and interchangeable, M being the inlet valve and N the exhaust. They are both mechanically operated by the cam shaft H driven by the two to one gear G. The lifts of the valves can be adjusted by the pin and locknut U. Fig. 18 shows a cross section of the engine, O being the inlet pipe and P the exhaust pipe. They are held to the cylinder heads by means of "dogs," and can be quickly and easily detached. A large diameter fly-wheel F is provided. Inspection doors are fitted at both sides and bottom of crank chamber. The engine, which is suspended directly from the main frame X, is lubricated on the splash system, and the bearings are provided with oil pockets insuring the proper distribution of the lubricant. All are provided with a Longuemare carburettor, to which the Hozier Company have added a simple

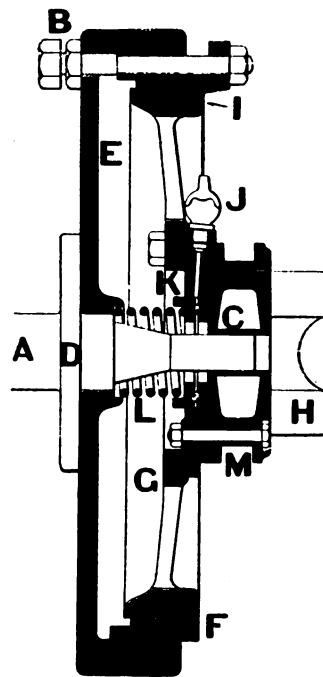


Fig. 19.—Sectional View of Argyll Friction Clutch.

- | | |
|----------------------------------|--|
| A Engine shaft. | H Friction clutch coupling. |
| B Friction clutch adjusting pin. | I Friction clutch leather. |
| C Engine shaft bush. | J Lubricator. |
| D Engine shaft flange. | K Ball race. |
| E Engine flywheel. | L Spring. |
| F Conical rings. | M Hardened steel grooved sleeve or coupling. |
| G Friction clutch. | |

device of their own by means of which the supply of air is automatically increased as the speed of the motor increases, and vice versa. Another noticeable feature of the latest Argyll cars is the pressed steel frame, which, instead of being of the usual \square form, is of \square shape, the forward and rear tapering to

form pockets for the springs. Although the 12-h.p. and 16-h.p. cars only weigh complete 16½ cwt., the 34 in. road wheels are being fitted with 105 mm. tyres, the result being a marked reduction in the troubles experienced by users of pneumatic tyred cars.

Messrs. Rochet-Schneider, of Lyons, for whom Mr. Morgan Donne is agent in Great Britain, are building two types of cars for 1904, both of which have a four cylinder engine, the 16-h.p. and 24-h.p., the former giving 22-h.p. and the latter 35-h.p. on the brake. The 16-h.p. car has a wheel base of 8 ft. 6½ inches, the chassis weighing 650 kilos. The 24-h.p. has a wheel base of 9 ft. 2½ in., the weight being 750 kilos. The frame is of pressed steel and is narrowed in front to increase the "lock" of the steering wheels. The steering rod connecting the front wheels is, I note, behind the front axle and consequently protected from accident. There are two brakes on the 16-h.p. car and three on the 24-h.p., the latter having two pedals, each acting on its own countershaft brake, this being in addition to the hand lever which actuates the band brakes on the hubs of the rear wheels. The pedals are mounted upon a transverse shaft underneath the footboard which actuates the clutch, and also the countershaft brakes; it is therefore necessary for the driver to push the pedal from him and not to press down as in some cars. Although there is no radical alteration in the engine, there are a number of improvements; it is of the double twin cylinder type, having the inlet valves, sparking tappets, and the vertical rods and levers for actuating the same on one side of the engine and the exhaust valves on the opposite side, both inlet and

the side, and fitted with canopy and front and rear wind-protecting screens.

A firm which is not so well known as it deserves is that of M. Berliet, of Lyons, who is making for the 1904 season three standard types of four cylinder cars—12, 20, and 40-h.p. In

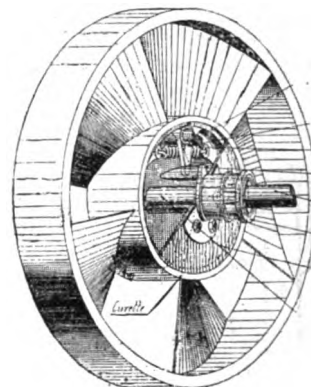


Fig. 21.—The Berliet Flywheel Fan and Clutch.

each a pressed-steel frame is employed, narrowed at the forward end to give the front wheels as full a "lock" as possible. The cylinders are cast in pairs; the inlet valves are mechanically actuated, and are interchangeable with the exhaust valves; the half-speed shaft with the cams being enclosed in the crank case. The centrifugal governor is adapted to act on the inlet. The water circulation is maintained by pump, and a combined tubular radiator and tank. One of the special features of the Berliet cars is the clutch (Fig. 21) The flywheel of the engine is provided with vanes, which serve to induce a strong current of air through the water cooler; the centre of the flywheel is made in the form of a hollow boss, inside which is a metallic segment connected with the gear-box, which may be expanded or contracted as desired by the clutch pedal. The clutch, which works in oil,

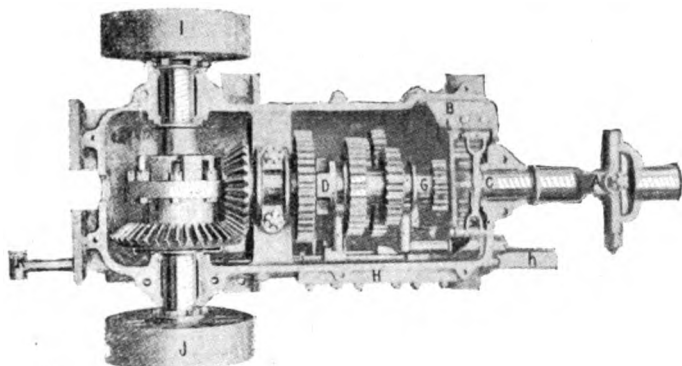


Fig. 20.—The Rochet-Schneider Change-Speed Gear.

exhaust valves being interchangeable and mechanically worked. The ignition is by a low-speed rotary magneto with tappets and advance sparking device, as in the 1903 cars. The governor acts directly on the carburettor; a throttle lever is also fitted on the steering wheel, while adjacent to the wheel are two levers, one for regulating the air to the carburettor and the other for the advance sparking. The gear presents several marked improvements; four speeds and reverse with direct drive on the fourth are provided. It will be noticed from Fig. 20 that the arrangement for changing from one speed to another is now on a new principle. The top shaft, which is square in section and connected with the clutch, has mounted upon it the sliding gears; the latter are in two portions, and are operated upon by two forks, one of which controls two speeds and the other two speeds and reverse. These forks are actuated by means of a locking bar, which has several projections and recesses to give the desired motion necessary for placing the various gears in and out of mesh; this arrangement permits of a short gear box, and at the same time enables very broad and strong gears to be used; the shafts also are short and stiff. It will be also noticed that the male portion of the clutch is connected to the gear by means of a universal joint, which counteracts any undue strain on the gear box and engine; the joint also permits of the male portion of the clutch finding its true position in the flywheel. Some excellent specimens of carriage work are to be seen on Messrs. Rochet-Schneider's stand, especially noticeable being a 16-h.p. double phaeton, with entrance at

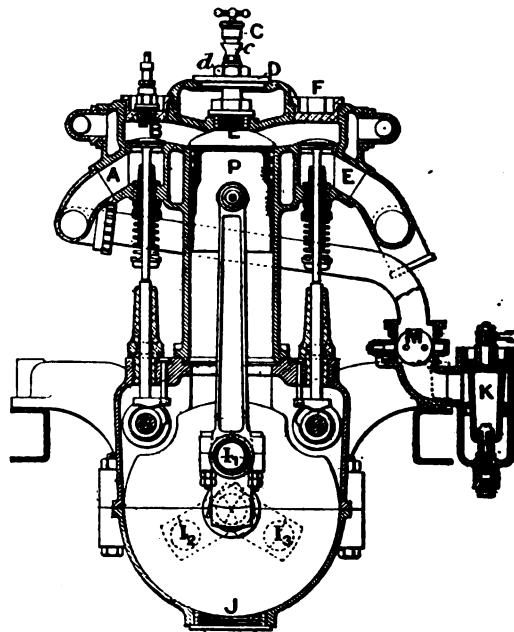


Fig. 22.—Cross Section of Cottureau Three Cylinder Engines. (See page 800).
{La V6 Automobile.

- | | |
|------------------------|--|
| A Inlet pipe. | K Carburettor. |
| B Inlet valve. | L Inlet cams. |
| C Compression release. | M Exhaust cams. |
| E Exhaust valve. | I ₁ , I ₂ , I ₃ The three cranks. |
| M Throttle valve. | |

is claimed to work progressively, and without any jerky action. Four speeds forward and a reverse are provided, the transmission of the power from the gear-box to the rear road wheels being by side chains. All the speeds are controlled by one lever, and on the fourth the power is transmitted directly from the engine

to the differential shaft. The brakes are all double-acting, and of the metal-to-metal type.

The novelty at the stand of Messrs. Cottureau and Co., of Dijon, is a new three-cylinder car of 12-16-h.p. The frame of the vehicle is of stamped steel. The engine (Fig. 22) is an excellent specimen of workmanship, the three cylinders being mounted

of these vehicles. The change-speed gear is of the *train balladeur* type, but, instead of the shifting gears being carried on the clutch shaft, the latter terminates in a bevel pinion. As will be seen from Fig. 23, the change gear is set at right angles to the position usually adopted, the fixed pinions being mounted on the differential countershaft.

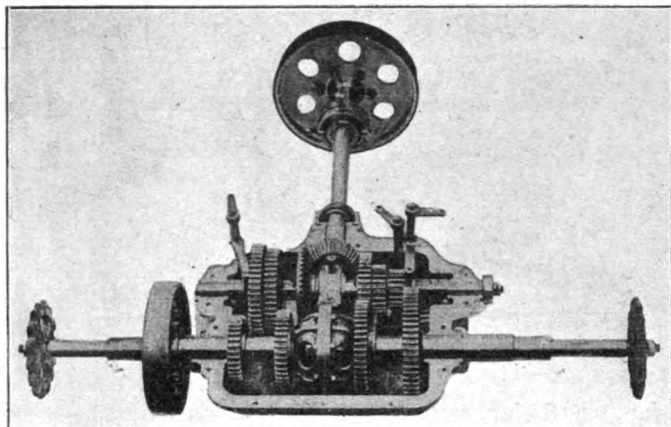


Fig. 23. —The Vinot-Deguingand Change-Speed Gear.

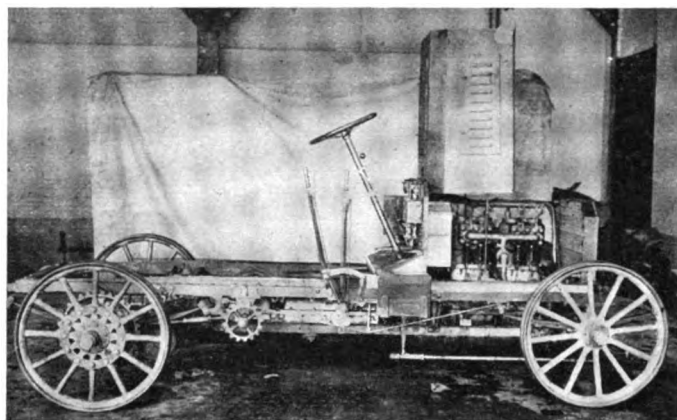


Fig. 24. —Chassis of Vinot-Deguingand Car.

separately on a large crank case. The inlet valves are, of course, mechanically actuated, in accordance with modern practice, but, in addition to the throttle on the admission, the speed of the engine can also be regulated by means of a variable lift device fitted to the inlet valves. The cylinders are 95 mm. diameter by 120 mm. stroke. The motor is claimed to be exceedingly quiet in operation, as well as very elastic, any speed—from 200 to 1,200 revolutions per minute—being readily obtainable. All the bearings on the car are of the ball type.

The stand of Messrs. Martini and Co. is continually surrounded by an interested crowd, the object of their attention being the identical Martini car on which Capt. Deasy recently drove up the cog railway on the Roobers de Naye, near Caux. An attempt has been made to indicate what the feat meant by the laying down under the car of a section of cog railway track, together with the loose ballast on which the wheels of the vehicle had to run. So realistically has this been done that many who should have known better have gone away with the

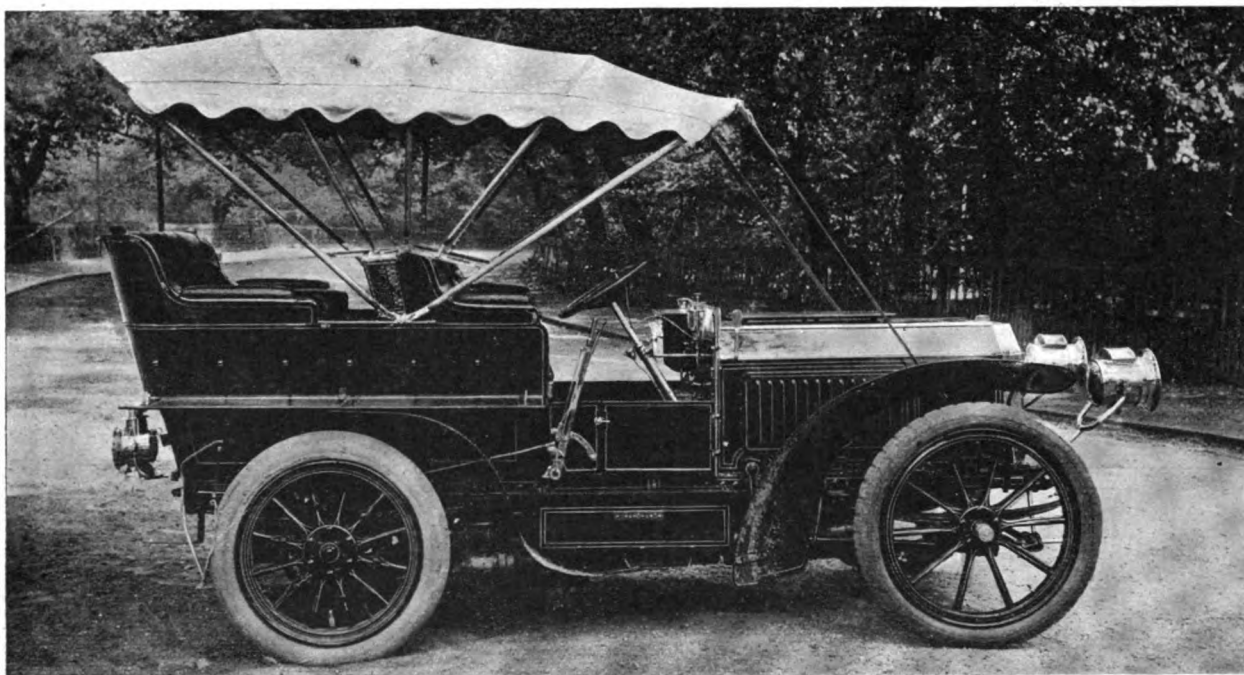


Fig. 25. —The 20-h.p. Light Napier Car with Cape Hood.

La Société Vinot and Deguingand are making three types of four-cylinder cars—10, 14, and 20-h.p. Mechanically-operated inlet valves, on the opposite side to the exhaust, are adopted, but the wood and steel frame is retained. Internal expanding brakes on the rear wheel drums are among other new features

idea that it was by means of the rack in the centre of the track that the car made the climb. Needless to say, the car went up by its own power, without the use of any rack or outside aid. Capt. Deasy pointed out to me the features of the 1904 model—only one type is being made for next year, a 16-20-h.p. four-cylinder vehicle.

The engine (Fig. 26), although on the same lines as last year's model, is slightly more powerful. Mechanically actuated inlet valves are employed, together with a combined honeycomb radiator and water tank, a feature being the provision for drawing off all the

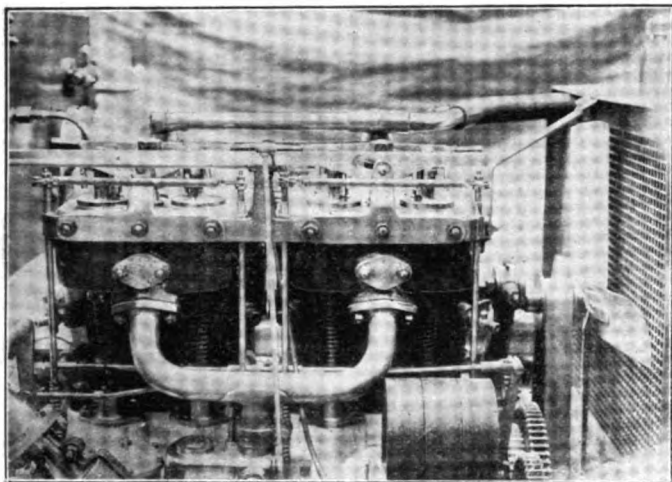


Fig. 26.—The Martini 16-20 h.p. Engine.

water, when necessary, from the radiator tank, pump and cylinder jackets. The carburettor is provided with a jacket through which part of the exhaust gases may be made to circulate. Four speeds forward and a reverse are provided; a direct drive is obtained on the fourth, and the single lever controlling all the speeds has only

ception of one hand-controlled lubricator for the pump and radiator fan spindle, the lubrication is entirely automatic; the base chambers are provided with cocks, by means of which it can readily be ascertained whether they contain the desired amount of oil. The engine and gear box are entirely protected below, while the steering rods are placed behind the front axle. Ball bearings are fitted to all parts except the engine.

Another well-known name is that of the Compagnie des Automobiles et Cycles Hurtu, whose display comprises 8-h.p.,

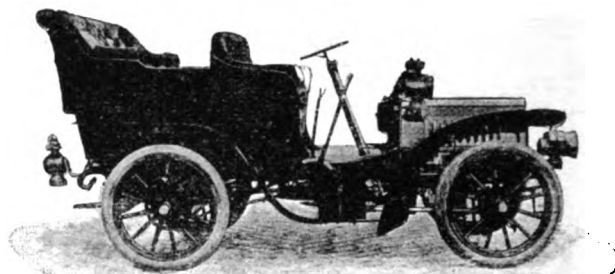


Fig. 27.—The 16-h.p. Hurtu Car.

12-h.p. and 16-h.p. cars, one of the striking exhibits included in the display being a 16-h.p. landaulet (Fig. 27). This is fitted with a four-cylinder Aster engine, developing its full power at a speed of 1,000 revolutions per minute. The Longuemare carburettor is provided with a throttle valve regulated by the governor. The power is transmitted through a leather-faced clutch to the gear-box, which gives four speeds ahead and reverse. The two shafts in the gear-box are arranged side by side, and on the top speed the drive is direct. A cardan shaft conveys the power

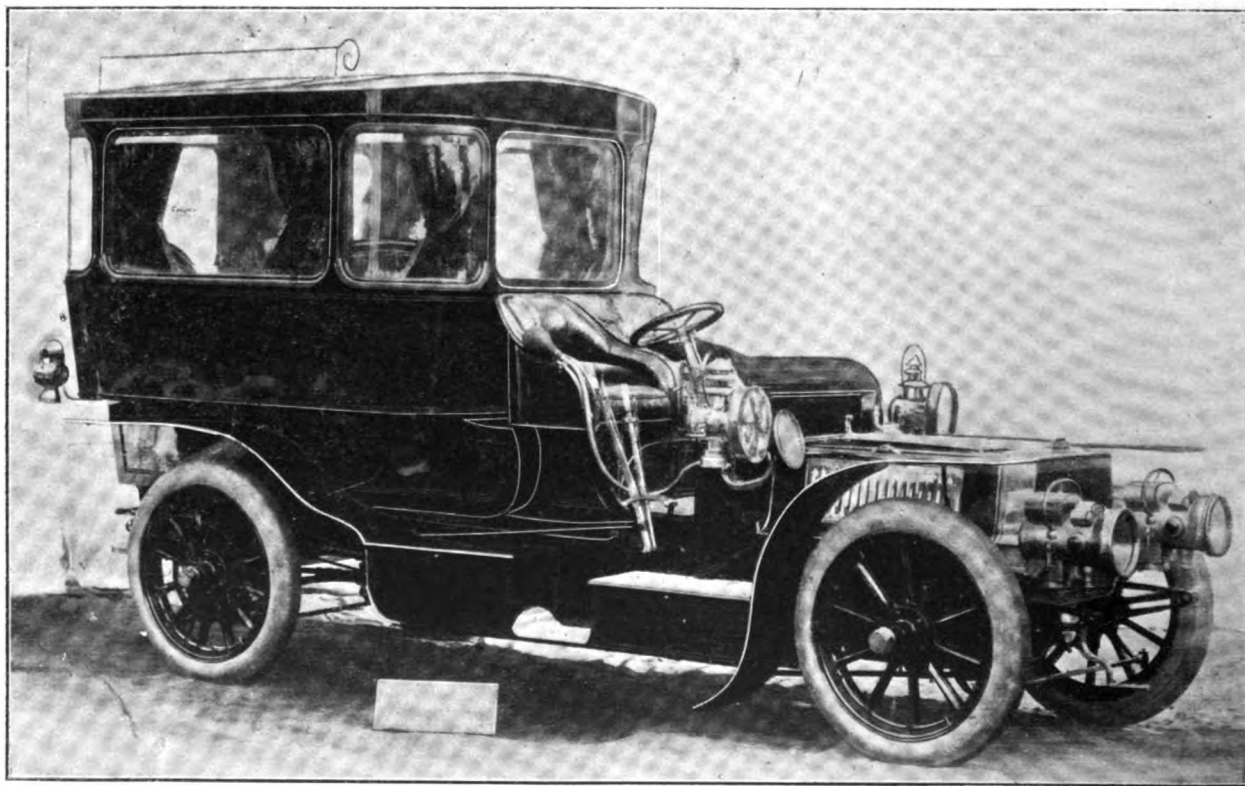


Fig. 28.—The M.M.C. 25 h.p. Saloon.

a forward and backward movement. The clutch is of the leather-faced cone type, and a universal joint is introduced between it and the gear box, to prevent any strain being thrown on the latter. The main frame, as well as the secondary one supporting the engine and gear box, are of pressed steel, while the dumb irons extend well to the rear to allow of placing the rear axle well back and the use of long springs. With the ex-

through bevel gear to the rear live axle. The brakes are of the metal-to-metal type, while the frame is of stamped steel.

PHANOMEN.

(To be continued.)

[We regret that our reports of the Wolseley, Motor Manufacturing, and Napier Co.'s exhibits have miscarried in the post. —Ed. "M.C.J."]

THE MOTOR-CAR ACT.

LAST week we gave the names of the gentlemen who were the first to register their motor-cars in thirteen of the leading boroughs. In continuation, we are now able to publish a further list of the No. 1's in Great Britain, from which it will be recognised how the ranks of motorists are fully representative of the leading public men of the country.

LONDON COUNTY COUNCIL.—Earl Russell, A.1; Mr. David S. Waterlow, A.2; Mr. J. Allen Baker, A.3; Lieut.-Colonel Mark Mayhew, A.4; Sir William Bell, A.5; Sir John Dickson-Poynder, A.6; Mr. W. H. Dickinson, A.7; Mr. G. S. Baker, A.8; Mr. P. B. Baker, A.9; Earl Russell, A.10.

BEDFORDSHIRE.—The Duke of Bedford, K.G., B.M.1.

BERKSHIRE.—Capt. F. C. Loder-Symonds, Hinton Manor, Faringdon, B.L.1.

BIRMINGHAM.—During last week a hundred applications to register cars and a dozen for motor-cycles were received by the Public Carriage Department of the Birmingham Corporation.

BUCKINGHAMSHIRE.—Mr. Tonman Mosley, Bangor's Park, Uxbridge, Chairman of the Highways Committee of the Bucks County Council, B.H.1.

CARNARVONSHIRE.—Mr. L. W. Jelf-Petit, Brynhyfryd, Llanrwst, C.C.1 motor-car, and C.C.2 for his motor-cycle.

CHELMSFORD.—Mr. P. J. Sheldon, County Surveyor of Essex, F.1.

DURHAM.—Captain H. S. Streatfield, Ryhope Hall, Ryhope, near Sunderland, V.1.

GATESHEAD.—Mr. H. Eastcott, Endsleigh, Gateshead, C.N.1.

GLOUCESTERSHIRE.—Dr. H. P. Fernald, Clarence House, The Promenade, Cheltenham, A.D.1.

GRIMSBY.—Mr. T. G. Tickler, E.E.1.

HULL.—The first applications for motor-car licences were received from Sir Alfred Gelder (ex-Mayor of Hull), Dr. Fullerton, Mr. J. J. Underwood, and Mr. A. P. Bannister (Beverley). Canon Lambert, vicar of Newland, applied for a licence for a motor-cycle.

HUNTINGDONSHIRE.—The Earl of Sandwich, E.W.1.

NORFOLK.—Mr. G. C. Davies, Town Close, Norwich, A.H.1.

NORTHAMPTONSHIRE.—Mr. A. Smith, Midland Road, Thrapston, B.D.1.

NOTTINGHAM.—Mr. R. M. Knowles, Colston Bassett Hall, Nottingham, A.U.1.

OLDHAM.—Mr. T. Crossman, 40, Coldhurst Street, Oldham, B.U.1.

OXFORD.—Councillor E. A. Bevers, M.R.C.S., Mayor of Oxford, B.W.1.

ROCHDALE.—Mr. Robert Walker, jun., Fairlight Villa, Spotland Road, Rochdale, D.K.1.

SALFORD.—Councillor F. W. Wheatcroft, B.A.1.

SHROPSHIRE.—Captain W. H. Foster, Woodcote Hall, Newport, Salop, A.W.1.

SURREY.—Mr. F. G. Howell, Oaksend, Oxshott, P.1.

WARWICKSHIRE.—Mr. H. G. Hawkes, Eaton Lodge, Warwick Place, Leamington, A.C.1.

WEST HAM.—Councillor C. E. Scrutton, A.N.1.

WIGAN.—Mr. Edward R. Crippin, Wigan, E.K.1.

WOLVERHAMPTON.—Mr. S. R. Rhodes, hon. secretary Wolverhampton Automobile Club, D.A.1.

WORCESTERSHIRE.—Lieutenant-Colonel Walker, A.B.1.

SCOTLAND.

ABERDEEN.—Mr. W. Jackson, Thorngrove, Mansfield, Aberdeen, R.S.1.

ABERDEENSHIRE.—Mr. W. Ramsay, The Bunga'ow, Dyce, S.A.1 (motor-cycle); Mr. J. Grieve, Turriff (motor-car), S.A.2.

ARGYLLSHIRE.—Mr. J. S. Matthew, Ardfillayne, Dunoon, S.B.1.

GLASGOW.—Mr. R. J. Smith, Secretary of the Scottish Automobile Club (Western Section), G.1.

EDINBURGH.—~~hon.~~ Sir J. H. A. Macdonald, Lord Kingsburgh, President of the Scottish Automobile Club, S.1.

LANARKSHIRE.—Mr. James Burns, solicitor, and Town Clerk of Motherwell, V.1.

PERTSHIRE.—Dr. J. F. Graham, the county medical officer, E.S.1.—a motor-tricycle. The first registration of a car is by Captain Murray Thriepland, of Fingask.

STIRLINGSHIRE.—Mr. H. A. Salvesen, Lathallan, Polmont, M.S.1.

From the correspondence we have received there appears to be some uncertainty as to where drivers are to apply for their licences, and also for the registration of their motor-cars. In our issue of the 28th ult. we gave a list of the authorities in England and Wales; and as a general rule it may be taken for granted that such applications should be made to the Clerk



The Trappers Trapped.

of the County Council, or, in the case of county boroughs, to the Town Council. Some of the Councils have transferred the duty of registration and licensing to the Chief Constables, to whom early application should be made.

UNTIL the 17th inst. the Paris Salon closed at 6 p.m., but from that date to the end of the Show it will remain open to 10 p.m., the latter being an entirely new departure.

THE AERO CLUB has arranged for an Exhibition, on similar lines to the annual exhibition held in Paris in the Automobile Club Salon at the Grand Palais, at the International Motor Car Exhibition to be held at the Agricultural Hall, London, towards the end of next March.

MESSRS. MEARS, the well-known wharfingers and haulage contractors, have been served with three summonses at Epsom for different offences alleged to have been committed under the Traction Engine Act of 1898, presumably on the ground that a light locomotive used by them was a traction engine, because it emitted a little visible vapour. Mr. Staplee Firth defended, and the summonses were dismissed.

CONTINENTAL NOTES.

A PART from the *Salon* there is very little of interest to record from the Continent. Motorists and motor traders from every point of Europe have this week descended in their thousands on Paris, which has once again proved its claim of being the international automobile market of the world.

THE Gordon Bennett race is already attracting much attention, meetings convened by automobilists, hotel keepers, and traffic authorities being held almost daily. According to a statement just made by Herr von Marx, Burgomaster of Homburg, arrangements are to be made for the accommodation of at least a hundred thousand visitors. Herr von Marx has generously placed a large area of land at the disposal of the Race Committee for the erection of an extensive motor garage. The programme of the races and festivities will extend over ten days. Baron de Caters and M. C. Jenatz have been

THE death is announced from Monte Carlo of Baron Arthur de Rothschild, the son of the late Baron Nathaniel de Rothschild. The deceased was an enthusiastic motorist and steam-yachtsman.

IN a recent issue I mentioned that a German firm—the Berlin Motorwagenfabrik, Tempelhof—had built no less than 16 petrol cars for the use of the Royal family of China. The fleet of vehicles is said to be a present from Viceroy Yuan Shikai to the Empress Dowager. Nine of the cars, which are intended to run between the West Gate of Peking and the Summer Palace, have lately arrived at Tientsin. Three of them are most sumptuously fitted up, being intended to convey the King, Queen, and the Empress Dowager; they are painted bright yellow with blue and silver dragons on two of the panels on each side. The inside is upholstered in Utrecht yellow velvet with a floral design. Only one seat—a revolving chair covered with yellow damask, is provided. The other cars are intended for the use of the Court, and are painted a rich cherry red, ornamented with flowers.



One of the Cars Built for the Empress Dowager of China.

[Allgemeine Automobil Zeitung.]

named as the two drivers of the Mercedes cars which will form part of the German team. A grand stand, to hold 3,000 persons, and to include a special box for the Kaiser and his suite, is to be erected at Saalburg, where the race will begin and end. Count Siegfried Wimpffen has been appointed the Austrian delegate to the International Racing Commission.

M. CORMIER arrived back in Paris on Wednesday of last week from his long tour on a De Dion 8-h.p. two-cylinder car. Altogether over 7,000 kilometres were travelled, and Algeria, Switzerland and Belgium visited. The car is now on view at the *Salon*, and, while greatly mud-stained, is none the worse for its long trip.

PEOPLE are beginning to wonder how many cars King Edward will eventually own. The other week it was reported that the Filtz Company were building a powerful one for his Majesty, while now the "Velo" gravely announces that he has ordered a six-cylinder car from Messrs. Louet.

THE latest report to be presented to the French Extra-Parliamentary commission is that of M. Bourcier de Saint Chaffray, in which he urges the necessity of a continuance of racing, but that it should be carried out under conditions which will make for the development of the touring car. He thinks *chassis* should provide room for four persons, and that the full complement of passengers should be carried in every case, while the power of the motor should be limited according to a formula based on the bore, stroke, and number of revolutions per minute.

THE committee of the French Automobile Club has decided to open a subscription for the erection of a memorial to the late Count de Chasseloup-Laubat.

MR. J. COUSINS NIXON (son of Mr. Alfred Nixon, manager of the motor department) has just been appointed motor-engineer to the General Accident Assurance Corporation, Limited.

HERE AND THERE.

AMONG new members of the A.C.G.B.I. are the Marquis of Ailsa, Viscount Mountgarrett, Sir Randolph Baker, Bart., and Captain Henry Kirk.

ONE day last week three motor fire-engines, fully manned, visited Sutton, apparently on a trial run. One of the engines broke down whilst passing through the town, and had to be left at Messrs. Jeffries' works in the Carshalton Road for overhauling.



Mr. C. Percy Maitby on 10-h.p. M.M.C., and Mr. J. P. A. Long on 10-h.p. Georges Richard at the Cat and Fiddle, near Ruxton, reputed to be highest licensed house in England.

THE committee of the Midland Automobile Club have decided to write to the members for the purpose of organising, if possible, some action with regard to the recent Light Locomotive Act, as there seems to be an inclination on the part of some district councils to close unnecessarily roads within their districts. Mr. T. C. Aveling, the hon. sec. of the Midland Club, will be glad to have suggestions from members on the subject.

USEFUL as a work of reference the "Daily Mail" Year Book for 1904 comes with 20,000 facts bearing mainly on newspaper topics of interest. Some pages are devoted to the motor-car, the figures relating to the import and export trade being given for the first half of the present year. There is also a summary of the new legislation affecting motorists and a chronicle of automobile records. Accuracy seems to be a feature of the volume.

THE sum of 2,000,000 marks has been voted in the German estimates for 1904 as a second instalment of the State contribution towards securing the representation of the German Empire at the St. Louis World's Fair, making, with the sum already voted, a total of £175,000. A memorandum submitted to the Reichstag states that the German building is being erected upon the best site in the exhibition grounds, and special prominence will be given to the advance which has been made in the construction of motor vehicles.

FROM Messrs. Charles Letts and Company come a selection of their excellent diaries for the new year, these being both for the pocket and the desk. The distinguishing features of these diaries, namely, the insurance policy and the patent "self-opening" tablet, have been retained—the insurance having been increased from £500 to £1,000, and the conditions attaching thereto made even more liberal than before. Of the self-opening tablet we can only say that experience has demonstrated its utility. There is a great variety of editions in different bindings to suit every requirement, while the firm's enterprise is also shown in an admirable series of automatic date calendars and office reminders.

To meet the demand for a popular priced vehicle, Messrs. Horsfall and Bickham are bringing out a 6-h.p. Horbick car early in the new year.

EVIDENCE of the fact that the motor-car is making progress in Australia comes to hand in the news that Mr. C. B. Kellow is opening a garage in Lonsdale Street, Melbourne, where not only will cars be stored but repairs of all kinds will be carried out.

THE Motor Car Acts, 1896 and 1903, have been summarised and explained by Mr. John A. Williamson in a neat little volume just issued by Messrs. Iliffe and Son, Limited. The notes on the new Act and the synopsis of Acts of Parliament applicable to motorists should prove of real utility to all who own or drive automobiles.

COLLINS' DIARIES are distinctive in the fact that most of them show a week at an opening of the page. The pocket sizes have an insurance policy for £500, and are of convenient size for the waistcoat pocket. Messrs. Collins, Sons and Company also publish a portable diary for the coat pocket, and larger scribbling diaries filled with writing and blotting paper of good quality.

ONE day last week four ladies, living about three and a half miles out of Aberdeen, hired a single horse cab to take them to a ball. The animal took a very considerable time to do three miles and then stopped, and no end of gentle (and other) persuasion would induce him to move a step further. Luckily one of the local public service motor cars came along. This was hailed, and the ladies were conveyed to the end of their journey in good style.

GOLD medals were awarded to eight competitors in the October endurance run to Pittsburg at a meeting of the committee of the National Association of Automobile Manufacturers at New York. The gold medal winners are as follows:—Columbia, driven by B. B. Holcomb; White, driven by Webb Jay; White, driven by Paul H. Deming; Toledo, driven by George Soules; Pierce Arrow, driven by Charles Sheppie; Pierce Stanhope, driven by Percy P. Pierce; Packard "Old Pacific," driven by E. T. Fetch; and Stearns, driven by Frank B. Stearns.



An American Hunting Party on a White Steam Car
[Motor, New York.]

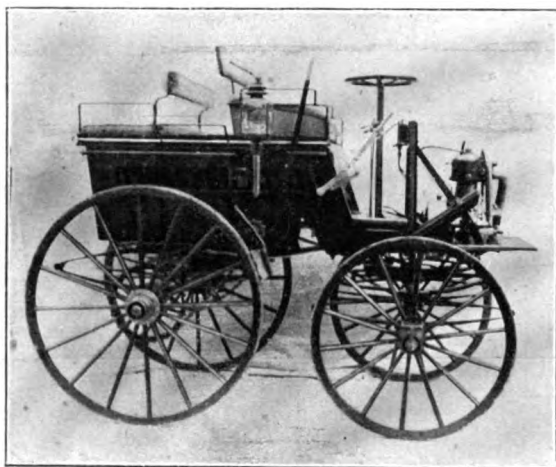
THE Ormond-Daytona Beach tournament, which will be run early in the new year under the auspices of the Florida East Coast Automobile Association, over the Ormond-Daytona Beach, promises to be a more important affair than it was last winter. Mr. Alfred Reeves, ex-secretary of the Empire trotting track, has been at Daytona for several days, and believes that 60 miles an hour will be easy. He thought the Empire track was about the fastest course in the United States, but describes it as a country road, as compared with this beach, for automobile speed.

MESSRS. JOSEPH LUCAS, LIMITED, have brought out a pocket catalogue of their "motoralities" and also a pamphlet on Motor Lubrication, in which the merits of the Wells-Lucas motor oils are recounted.

AFTER the Irish Automobile Club's recent hill-climbing competition at Glen Dhu, Mr. G. Tickell went up the scene of the contest on his 10-h.p. Argyll car in 4 mins. 0 $\frac{3}{4}$ sec.; subsequently, with Mr. J. Dunlop aboard, he did it in 4 min. 18 secs.

FROM the Palmer Tyre, Limited, comes a catalogue of their cord motor tyres, recently illustrated and described in the *Journal*. It deals fully with the method of manufacture and construction of this tyre, and will be of interest to motorists generally.

HEREWITH we illustrate a horse-drawn vehicle which has been converted to an automobile by Mr. Henry Adams, of Tunbridge Wells. In sending us the photograph Mr. Adams states that he could not see why petrol power should not be added to any vehicle with four wheels, and so "I set to work on designs, patterns, and castings, and have practically completed my first vehicle, which travels very well. It is a four-wheeled dogcart exactly as when drawn by a horse, minus only the shafts. The engine is fixed on the footboard, the front wheels or under-carriage are controlled by a specially designed steering gear and



wheel similar to an ordinary motor-car. It has three forward speeds and one reverse, and geared on top speed to eighteen miles an hour in order to keep within the limit of the law. The trials have been very satisfactory. The next vehicles I intend to bring out are a lady's victoria and a doctor's brougham, which will each be driven by an 8-h.p. motor, and will be simple enough for any ordinary coachman to manage with a little practice. I do not alter the carriage in any way by removing either the under carriage or the axles. This design will be extremely useful to tradesmen who wish to get their rounds done quickly at a much less cost than using horses, which are generally soon run off their legs."

AT a recent meeting in Wolverhampton, Sir Alfred Hickman M.P., referred to Lysaghts, Danks, Walker and Company, Neve and Son, and other great firms which had removed from the town within recent years. Local papers are now giving vent to a hope that the development of the motor-car industry in the town may provide increasing employment for the labour thus displaced.

As already announced, the Brotherhood-Crocker Motors, Limited, have taken temporary offices at 19, Hanover Square, London, W. They have also taken large premises in the West End for showrooms, garage, repair shops, etc. Besides the sale of their Brotherhood motor carriages, they are laying themselves out to cater for automobilists in all departments.

THE Furness Railway Company are contemplating a motor-car service in connection with the Coniston and Lakeside branches of their system.

THE Harvard Automobile Club, of Cambridge, Mass., U.S.A., is organising a course of lectures on the automobile, for motor-car owners, prospective buyers, and mechanics.

LOVE'S AUTOMOBILE COMPANY, of Kirkcaldy, send a circular relating to their agencies and their garage, the latter being most conveniently located for motorists north of the Firth of Forth.

A LOCAL GOVERNMENT BOARD inquiry has been held into the Eastbourne Corporation's application for permission to borrow £10,000 for electric supply purposes and £4,398 for motor-buses.

ACCORDING to statistics compiled at Toronto, Canada, 175 automobiles were sold there during the season of the present year, of which number 135 have remained in the city, while forty have gone to all parts of Canada.

THE Ordnance Survey have recently issued a folding pocket map of Chelmsford and the surrounding district, one of the series of official maps of areas in England and Wales on the scale of two miles to one inch.

ON account of the increase in the motor department of their Manchester branch, Messrs. Brown Brothers, Limited, have taken the adjoining building, No. 269, Deansgate, which is now open for business; as complete a stock of motor goods will be shown in the north as have been kept in London.

A SERVICE of motor-cars is about to be established between Windermere Station, on the London and North-Western system, and Keswick and other places in the Lake District. Experiments have already been made with a steam lorry, and the roads were found to stand the test remarkably well. The service is intended for passenger and goods traffic.

THE diaries and calendars issued by Messrs. T. De la Rue and Company, Limited, are of infinite variety and display considerable ingenuity in the arrangement by which the minimum space can be utilised to the best advantage. "Thumb" and "palm" condensed diaries and engagement books are a speciality, and some excellent date cases are also published by the firm.

WHITAKER'S ALMANAC for 1904 has been brought up to date by the inclusion of a summary of the provisions of the Motor Car Act. The articles relating to India and the mercantile fleet have been entirely revised, and this standard work of reference certainly knows no deterioration. As a directory of titled persons Whitaker's Peerage has become as famous as the almanac, and the new volume for 1904, with its comprehensive index to country seats and extended lists of society persons, is useful not only as a work of occasional reference but also as a companion to the daily newspaper.

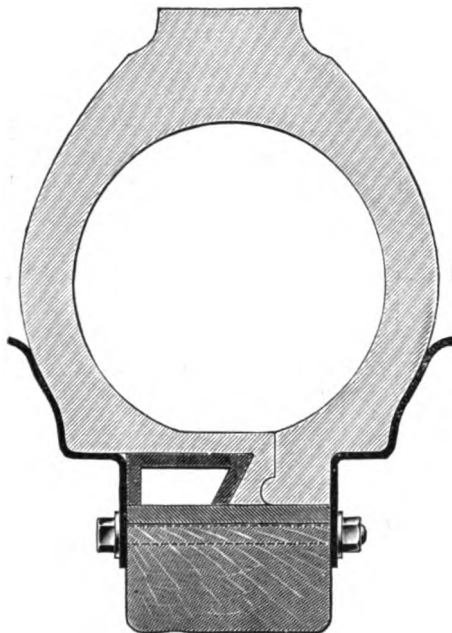
THE new edition of the Clement-Garrard Motor Book for the coming season has just been issued, and gives complete details and drawings of the Clement-Garrard motor and the Garrard "two-speed" gear, as well as of the motor-cycles of the Garrard Manufacturing Company, Limited. Several pages are devoted to a list of the interchangeable parts of the motor. The system adopted in listing the various spare parts of motors and two-speed gears enables motor-cyclists to order any part that may be required without trouble.

AMONG southern places few have such memories as Winchester, the ancient Hampshire city which has been familiar to participants of the Reliability Trials of the A.C.G.B.I. during the last few years. It has been the subject of many volumes, but of none so pictorially interesting as that which Mr. W. T. Warren has edited, "Winchester Illustrated," and which has just been published locally by Warren's Library, and in London by Messrs. Simpkin, Marshall and Company. Within two hundred pages we have as many illustrations—many of beauty and all of interest. It will prove a pleasing souvenir for all who have visited King Alfred's city.

THE "SEDDON" TYRE.

AFTER having had the advantage of being tested for twelve months in the north of England, the "Seddon" tyre for motor-cars is being placed upon the market, and should attract considerable attention. A good quality of red rubber is used in the manufacture of the tyre, and the strand or cord fabric is subjected to a special treatment.

The strands are dealt with separately by raw or unvulcanised rubber being forced between each and made taut under enormous pressure, in order to take their equal proportion of the strain. Several layers of fabric are practically moulded into one.



Section of the Seddon Tyre.

This process is claimed to prevent the chafing of the cords or strands and reduce the internal heat.

We understand that the Seddon tyre has been subjected to most exhaustive tests on both touring and racing cars, the result being so satisfactory as to justify high claims being made by the makers. In proof of this a set of tyres which were fitted to a 16-h.p. Darracq in February last are to be seen at the showrooms in Manchester, showing only slight signs of wear although they have run over ten thousand miles. A notable feature is that an air tube is not used in these tyres, and, although they allow of its insertion, it is only necessary in case of emergency. In all the experiments and trials that have been made no air tubes were used, as the tyre itself makes a mechanical joint when the flanges are bolted up to it through the felloe of the wheel; therefore this must greatly reduce friction and heat. The tyre may well be termed a double-tubed tyre, the tube being an adjunct and an accessory, and need only be used as stated above, namely, in case of necessity. The advantage of the "Seddon" tyre is its square tread of about one and a half inches in width, thus covering so small a road surface that side-slip or skidding is entirely abolished, as in no instance has this been perceptible in any degree in whatever the condition of the road. In the accompanying illustration the loose inside section rim, the loose flanges, the bolts, which go through the felloe, and the square non-slipping tread are clearly seen, these being the distinguishing features of the tyre. The "Seddon" tyre is secured to the wheel by two loose flanges which are bolted to the felloe, and to detach, only one flange requires to be taken off. This in manipulation is very simple. There is only one tool supplied for the purpose, viz., a box key to unscrew the nuts which fasten the flanges. The tyre can be fitted to all makes of wooden wheels, and the latter require no alteration beyond the edges of the existing rims being turned off.

MOTOR-CYCLING NEWS.

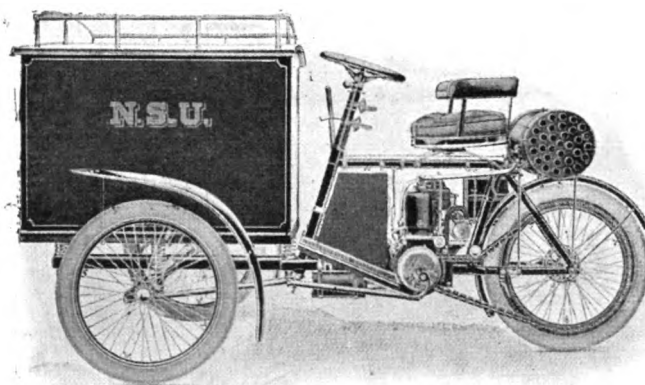
AMONG the new candidates for membership of the Auto-Cycle Club is Captain T. Dennistoun, of the Royal Horse Artillery—a resident of Krugersdorp, in the Transvaal.

THE "Morris" motor-bicycle, introduced by the Oxford Automobile and Cycle Agency, has a 2½-h.p. M.M.C. engine fitted with the mechanical inlet valves illustrated in our last issue. The carburettor used can be of either the Longuemare spray or the Morris type, the latter being claimed to work well regardless of the atmospheric conditions. In the firm's new catalogue the motor-bicycle is shown fitted with a fore-carriage of excellent design.

THE prosecution of Edward Cordner for riding a motor-bicycle on the footway at Lisburn, co. Armagh, has failed, because of difficulty in identification. Edward Cordner is exactly like his twin brother Joseph in face, height, and complexion. One of the two brothers was summoned, but a constable swore that it was the other brother he saw riding the machine. A magistrate remarked that he could not tell which of the two men had been in the witness-box. The solicitor who defended Edward Cordner explained that he was able to identify him only by putting a private mark on him.

UNDER the name "To-Bah" Messrs. Beard Bros., of Cricklewood, have introduced an ingenious set of coupling rods by which an ordinary bicycle can be attached to the side of a motor-cycle. The rods coupling the front forks are arranged upon the parallel motion principle, and allow the steering wheel of the attached machine to take its proper inclination and curve, whether upon the outside or the inside of the bend. By means of these couplings, which are not expensive, the possessor of a motor-bicycle would be able to afford pleasurable runs to friends of either sex who own ordinary safety bicycles.

Now that motor-cycles for pleasure purposes have become so popular an increasing amount of attention is being devoted to adapting these machines for the purposes of tradesmen. The accompanying illustration shows the useful carrier motor-tricycle exhibited at the recent cycle shows by the Neckarsulmer Fahrradgesellschaft, of Neckarsulm, Germany. The motive power is supplied by a water-cooled engine of 3½-h.p. The water circulation is on the thermo-siphon system, water being contained in a large tank perforated by a number of tubes, and carried over the rear wheel. Two speeds and a free engine are provided by a kind of Crypto gear on the engine shaft, from which the power



is transmitted to a pulley attached to the rear wheel by a special combination chain belt. The two speeds give approximately fifteen and six miles per hour. No pedals are provided, as the engine is started by means of a detachable handle. A large seat is provided for the driver and also broad footboards. Steering is controlled by an inclined hand wheel just the same as in a car, and both hand and foot brakes are provided.

The 1903 Reliability Trials.



SUMMARY OF MARKS.

No.	Description.	Reliability. Maximum 3000.	Cleaning and Replenishing. Maximum 1500.	Hill Climbing. Maximum 1000.	Brakes. Maximum 250.	Horse-power. Maximum 250.	Steering. Maximum 250.	Consumption. Maximum 500.	Speed. Maximum 500.	Cheapness. Maximum 250.	Re-starting. Maximum 250.	Noise. Maximum 250.	Vibration. Maximum 250.	Vapour. Maximum 250.	Dust. Maximum 500.	Finish. Maximum 250.	Cleanliness. Maximum 125.	Condition. Maximum 1000.	GRAND TOTAL.	Marks deducted for excessive speed.	NET TOTAL.
CLASS A1.																					
1	Century Tandem	2942	1414	349	220	156	250	160	385	153	0	138	175	222	476	160	87	500	7787	11	7776
CLASS A.																					
4	5-h.p. Baby Peugeot .. .	2973	1408	531	220	194	250	204	317	87	250	127	192	230	250	200	100	887	8370	—	8370
5	6-h.p. Regal .. .	2761	1301	269	240	61	140	135	293	75	84	104	168	190	500	180	90	830	6921	6	6915
11	Stanley Steam Car .. .	2827	1241	378	180	210	150	80	373	20	250	230	220	170	292	150	112	500	7433	14	7419
14	64-h.p. Cadillac .. .	2979	1387	461	230	250	194	151	332	0	250	147	207	237	309	170	117	796	8217	—	8217
17	5-h.p. Oldsmobile .. .	2957	1423	485	235	172	197	181	296	175	250	188	176	244	427	166	114	790	8476	16	8460
18	64-h.p. Clyde .. .	2957	1378	348	234	85	210	192	372	87	0	123	145	187	267	216	117	898	7811	2	7809
19	6-h.p. Elswick .. .	2415	1274	291	240	74	159	148	267	0	166	160	173	233	410	160	90	518	6828	—	6828
20	6-h.p. De Dion Bouton ..	2938	1454	458	200	142	225	153	322	0	0	129	140	237	402	248	103	981	8132	3	8129
21	5-h.p. Oldsmobile .. .	2945	1415	429	208	166	225	166	331	175	250	203	150	244	465	217	111	950	8650	—	8650
23	8-h.p. Achilles .. .	2571	1247	459	147	58	238	166	233	87	250	111	126	231	348	198	110	430	7010	—	7010
CLASS B.																					
24	6-h.p. Swift .. .	2974	1406	493	235	186	250	163	251	185	250	149	191	240	476	249	103	965	8766	3	8763
28	9-h.p. Beaufort Tonneau ..	2851	1414	506	235	117	198	267	399	9	250	154	107	198	280	231	84	645	7945	5	7940
29	9-h.p. Argyll .. .	2984	1432	514	237	102	250	266	363	58	250	127	164	240	432	239	87	980	8727	—	8727
35	9-h.p. Eagle .. .	2890	1438	526	196	81	150	192	300	151	250	127	164	250	284	150	109	221	7478	1	7477
38	9-h.p. Mohawk Manon .. .	2940	1401	536	201	154	200	216	333	210	250	112	—	218	175	95	400	7435	1	7433	
39	8-h.p. M.M.C. .. .	2999	1443	519	225	134	250	287	410	70	250	137	184	224	320	250	83	1000	8785	—	8785
40	9-h.p. Darracq .. .	2937	1452	371	240	35	150	212	308	0	0	127	167	102	389	218	94	690	7492	1	7491
CLASS C.																					
41	10-h.p. Gladiator .. .	2962	1436	722	242	250	250	344	452	8	250	147	191	233	410	250	73	884	9104	2	9102
42	12-h.p. Albion .. .	2964	1428	437	250	78	250	207	276	64	250	121	177	219	298	249	110	1000	8378	—	8378
43	10-h.p. Hal'amsire .. .	2719	1261	396	233	84	248	155	290	131	250	83	157	150	427	113	103	660	7560	—	7560
47	9-h.p. James and Browne ..	2910	1361	430	250	144	250	272	363	0	250	172	147	227	200	235	70	893	8174	—	8174
48	10-h.p. Argyll .. .	3000	1406	541	215	106	246	280	395	113	250	166	172	214	276	243	58	875	8556	3	8553
51	12-h.p. Wolseley .. .	3000	1453	700	245	250	234	258	446	0	250	144	176	217	303	250	81	1000	9007	5	9002
52	10-h.p. Wol-eley .. .	2995	1464	751	245	250	241	255	429	35	250	146	150	217	246	250	48	921	8893	8	8885
56	10-h.p. Horbick .. .	2723	1299	470	240	113	221	240	304	2	250	133	135	148	270	236	90	938	7812	18	7794
57	12-h.p. Georges Richard ..	2992	1442	357	230	52	260	247	350	26	250	141	132	183	470	241	78	1000	8441	4	8437
58	12-h.p. Relyante .. .	2918	1428	353	235	68	249	213	401	56	250	103	170	200	253	225	100	330	7552	2	7550
59	13-h.p. Rex .. .	2978	1393	444	202	162	200	245	435	56	0	122	141	311	392	160	100	750	7991	12	7979
60	10-h.p. Dechamps .. .	2972	1255	333	235	100	201	210	313	43	250	142	130	210	371	207	80	900	7952	6	7946
62	74-h.p. Wolseley .. .	2989	1449	605	245	250	240	222	442	131	250	135	142	198	422	250	58	1000	9028	18	9010
63	10-h.p. Spyker .. .	2976	1367	529	240	126	236	205	288	122	250	136	145	175	340	224	87	911	8357	1	8356
64	12-h.p. Darracq .. .	2973	1440	551	237	63	215	184	388	87	250	104	117	161	449	203	106	787	8318	15	8303
CLASS D.																					
65	12-h.p. Sunbeam .. .	2953	1460	560	240	159	250	231	405	31	250	143	207	178	205	249	83	1000	8604	1	8603
66	12-h.p. Gladiator .. .	2939	1403	812	250	250	149	218	500	12	250	159	189	180	389	150	62	853	8915	2	8913
68	14-h.p. Brooke .. .	2980	1442	549	250	77	244	326	339	63	250	149	191	186	455	229	130	908	8828	15	8813
70	10-h.p. Thornycroft .. .	2946	1321	305	243	70	196	206	304	140	0	148	182	237	394	150	121	651	7608	2	7606
77	12-h.p. Star .. .	2996	1443	653	250	250	243	224	473	0	250	142	197	132	307	234	25	783	8802	6	8596
79	16-h.p. Argyll .. .	2877	1361	450	170	63	222	181	413	0	250	141	214	237	438	233	45	896	8171	1	8170
84	10-h.p. White Steam Car ..	2986	1228	670	240	250	145	140	430	165	250	244	250	147	416	235	92	1000	8988	—	8988
85	12-h.p. Dennis .. .	2975	1433	452	235	166	224	312	404	165	250	147	208	250	246	249	90	895	8701	—	8701
87	10-h.p. Lanchester .. .	2998	1439	487	230	235	209	265	403	31	250	152	244	198	429	241	77	692	8570	—	8570
89	14-h.p. Br sh .. .	2964	1408	642	225	168	233	210	388	63	250	151	210	240	232	106	65	900	8555	4	8551
90	16-h.p. Maxim .. .	2911	1330	619	240	122	204	247	375	98	84	132	142	224	311	246	70	891	8246	4	8242
91	12-h.p. De Dion Bouton ..	2990	1453	856	229	250	250	227	466	165	250	130	140	212	215	250	106	1000	9189	—	9189
92	12-h.p. New Orleans .. .	2973	1452	814	226	250	250	358	483	63	250	169	222	230	449	248	106	942	9485	2	9483
93	10-h.p. Renault .. .	2996	1463	629	227	250	250	237	406	143	250	172	222	247	312	223	70	942	9039	—	9039
CLASS E.																					
94	20-h.p. Thornycroft .. .	2971	1413	508	236	87	250	211	497	60	84	143	219	221	364	194	100	840	8398	14	8384
95	12-h.p. Chelmsford .. .	2878	1336	480	192	250	245	500	444	80	250	216	235	227	474	206	125	983	9121	4	9117
96	15-h.p. Germain .. .	2955	1431	629	229	178	250	251	370	0	250	143	216	167	303	214	100	841	8522	2	8520
97	15-h.p. New Orleans .. .	2973	1339	807	225	250	250	297	483	138	0	129	241	239	480	249	100	900	9071	15	9056
100	18-h.p. James and Browne ..	2994	1431	790	249	243	248	194	461	50	250	164	210	210	359	241	112	971	9182	—	9182
102	24-h.p. Wolseley .. .	2967	1454	919	245	190	240	178	470	49	250	152	149	250	335	250	100	947	9175	3	9172
105	10-h.p. Gardner-Serpillet ..	2909	1411	1000	250	250	250	355	482	12	250	204	250	153	261	233	95	1000	9455	1	9454
106	24-h.p. Georges-Richard ..	2983	1355	576	162	73	250	200	463	50	250	168	210	148	599	243	66	1000	8596	16	8580
108	16-h.p. Dennis .. .	2991	1463	781	210	191	238	275	438	122	250	153	226	183	410	243	82	916	9202	—	9202
113	14 .p. Renault .. .	2869	1345	703	156	250	250	174	429	70	0	149	216	215	405	217	85	647	8180	10	8170
114	14-h.p. Martini .. .	2996	146																		

CORRESPONDENCE.

BORES AND STROKES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A controversy of long standing, which does not seem to be any nearer solution, is that relating to the ratio of engine bore to stroke. In your issue of the 21st ult. I notice that Mr. A. Govan dealt with the point in the course of his recent paper in Glasgow, in the course of which he advocated the stroke being a $\frac{1}{4}$ in. more than the bore. The long stroke still has a good lead, but there is a very noticeable tendency to get closer, proportionately, to the bore, in marked contrast to the practice of a few years ago. Such combinations as $4\frac{1}{4}$ in. by 5 in., and 5 in. by $5\frac{1}{4}$ in., 5 in. by 6 in., are very common, but it is rarely that the stroke exceeds the bore by more than an inch. On the other hand, the "square" cylinder—that is, the cylinder with the bore and stroke approximately equal—has distinctly gained ground, engines 4 in. by 4 in., $4\frac{1}{2}$ in. by $4\frac{1}{2}$ in., 5 in. by 5 in., etc., and even a few where the bore exceeds the stroke, being now frequently met with.

Some interesting information on the point can be gleaned from an inspection of the engine dimensions given in the programme of the recent Reliability Trials. In this can be found many examples of the square cylinder—the Vulcan Company, for example, adopting 4 in. by 4 in. in their 6½-h.p. engine; the Humber Company $3\frac{1}{2}$ in. by $3\frac{1}{2}$ in. in their Humberette; the 6½-h.p. Cadillac has a 5 in. by 5 in. engine, the 10-h.p. Pick two cylinders $4\frac{1}{2}$ in. by $4\frac{1}{2}$ in., the 10-h.p. Georges-Richard with 100 mm. and 100 mm., etc. Examples of long stroke engines are to be seen in the 9-h.p. double cylinder James and Browne, 4 in. by 6 in., and the 10-h.p. Dechamps 100 mm. by 140 mm. Even the Hozier Company in their 14-h.p. three cylinder Argyle use a relatively long stroke motor, 90 mm. by 120 mm. I should be glad to see the point brought forward by Mr. Govan further discussed, as it is one on which there seems to be little data available. In particular I should be glad to know the advantages claimed by those motor designers who have adopted engines with equal dimensions for the bore and stroke, over one with the stroke say an inch longer than the bore,—Yours truly,

F. L. FERGUSON.

LARGER DRIVING WHEELS ADVOCATED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If cars were fitted with higher wheels, or at least higher driving wheels, would it not lessen the dust nuisance considerably? As everyone knows, the higher the wheel the slower it revolves to attain the same speed of the vehicle, thus the wear and tear of the tyres should be rather less on wheels of large diameter. At the same time a higher wheel would bridge over many of the depressions in the road, and would, therefore, avoid the pumping out of the dust or mud that collects in these depressions. Another advantage would be that the distance between the floor of the car and the ground would be greater, thus allowing a free passage for the air that passes beneath the car. High driving wheels (with solid tyres) were fitted to the old Daimler and Benz cars, but when pneumatic tyres came into general use the diameter of the wheels lessened considerably. The only reason for this, as far as I can ascertain, is to keep down the cost of production. In my opinion a high wheel with a good solid rubber tyre rides almost as easy as a wheel of small diameter with a pneumatic tyre pumped hard.—Yours truly,

N. W. P.

PETROL AND STEAM—A SUGGESTED COMBINATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am afraid "D. J. M.'s" idea of using a petrol and steam engine combined would not give very good results if the steam engine had to depend on getting its steam from the form of generator stated. In the first instance, the exhaust pipe would not give off sufficient heat to generate enough steam to drive even a small engine, and upon putting the steam engine into action all the steam would be rapidly consumed, and the petrol motor would then have the extra work of driving the steam engine, in addition to its ordinary load. Even on the smallest type of steam generator or boiler, the heat required to keep up the required pressure is greatly in excess of that which can be furnished by an exhaust pipe.—Yours truly,

BLOW-OFF.

BENZ v. LIGHT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to Mr. Beaumont's letter in your last issue, a 3½-h.p. Benz car cannot in any way be compared with light cars of same power for pace uphill. I myself have had the handling of several Benz cars, and have only known one of these to go up a small incline at anything like speed. This was undoubtedly due to the extremely light body fitted. The others were failures when hills were concerned, the crypto gear having to be used to crawl up at about 4 m.p.h. This is not the case with the light cars, which generally maintain a good moderate speed up hill as well as on the level. The cause is, without doubt, a question of weight.—Yours truly,

BATTERSEA.

BENZ v. LIGHT CARS.—Mr. F. Cove writes:—"If a Benz is thoroughly understood in every detail it certainly will compare favourably, and is a most excellent hill-climber at a good speed, but there is much to know on the subject. I have had five Benz cars of various powers."

THE WINTER USE OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I read with interest the "Useful Note" in your last issue on Mr. Hiorth's method of preventing the steam gauge of his steam-car from freezing in very cold weather. I overcame this difficulty in my own case by putting in a T connection just below the steam gauge and attaching an ordinary radiator drip cock. This does not detract from the appearance of the equipment, and by allowing a slight drip or by blowing-off the cock now and then the gauge and all connections may be heated up to boiler temperature. This is not, perhaps, a new idea, but I have not seen another light steam car so fitted.—Yours truly,

LOCOMOBILIST.

AN OPENING IN MALTA.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a reader of your *Journal* it may be of interest and use to young Englishmen to know of localities where a reasonable prospect of success for mechanics may be found. Malta is such a place. There are quartered there a large section of the British Army of all arms, besides the Island being the headquarters of the British Mediterranean fleet. Amongst these a number of wealthy officers already own, or are likely to purchase, motor-cars and cycles. When I left the Island four months ago there was, as far as I know, no qualified person to undertake repairs, and within the last fortnight I have read a letter from a motorist commenting on the want of a competent repairer.

By printing this letter you may be conferring a benefit not only upon the users of motors, but also the prospective engineer.—Yours truly,

SUBALTERN.

MOTOR VOLUNTEER CORPS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Accepting the figures given by Lieut.-Col. Mark Mayhew as to the proportion of officers to privates in the Motor Volunteer Corps, I still think that there was scarcely any need for one officer to every three men, especially as all who join are presumably of good social position. The carrying of baggage for Army officers and similar duties may be interesting, but to secure that this is done there need not be one officer to every three privates. Surely a committee elected by the members of the corps would have been sufficient, until, of course, the scheme was properly matured, and it must be confessed the present method has lessened the enthusiasm of a good many who would have joined the corps.—Yours truly,

A VOLUNTEER.

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Opossum," as to whether his 6½-h.p. "Napoleon" car would carry solid tyres, as this car is of the *légère* type, I am of opinion that it would not pay to use solids owing to the extra vibration and wear they would cause on the mechanism. As no doubt his troubles are from cuts and punctures over stony and rough country roads, I should advise him to use metal-protected treads on his present covers; there are several on the market which have been more or less successfully used on "Napoleon" cars. Perhaps the users will kindly give "Opossum" the benefit of their experience.—Yours truly,

BERNARD NEAVE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I ask any of your correspondents who have actually tried pneumatic and solid tyres on the same car to give the result of their experience as to the advisability of fitting a light car with solid tyres or a combination of the two kinds? The speed required would be well within the new legal limit.—Yours truly,

PUNCTURE TIRED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I be allowed to answer "Opossum" with regard to solid rubber tyres on his 6½-h.p. car with De Dion engine? I note you suggested that to fit solid tyres to the back wheels of his car would cause such extra vibration and wear as to cost probably double in the long run in the way of repairs. I may say, however, that my company has converted dozens of De Dion cars from pneumatics to Royal Buffer tyres, and the results have been so successful that we have, at the present moment, I believe, nineteen De Dion cars being converted from pneumatics to "Royal Buffers." I can refer "Opossum" to half-a-dozen actual users who have had their wheels converted from pneumatics, and who assert that they find practically no difference in vibration, and that

they would not on any account go back to pneumatics. I shall shortly have one of the latest type of De Dion cars fitted on all four wheels with "Royal Buffers," and shall be pleased to let "Opossum" try it himself or any of his friends, by appointment. As to Mr. Elmslie's enquiry, the above information about De Dion cars answers his question with regard to live axles, and I may say that of the hundreds of cars we have converted from pneumatics we have never heard of a single ball breaking.

—Yours truly,

J. M. MACLULICH.

THE SAMSON HUTCHINSON BANDS.—Mr. Walter E. J. Mourilyan, replying to "Opossum," says:—I am the owner of a "Napoleon" car, and it may interest him to know that I have recently had "Samson Hutchinson" bands fitted to my two back tyres with most excellent results.

CATALYTIC IGNITION.—"Syntax" writes that he and several motoring friends would be glad if some of those who have tried the catalytic ignition would send an account of their experience with the same.

MESSRS. BAILEY AND LAMBERT, LIMITED, request us to state that the car illustrated in their advertisement last week was of 12-h.p., not 10-h.p.

SPEED AND RELIABILITY TRIALS.*

By EDWARD H. COZENS-HARDY.

THE Club may justly be proud of the reputation which it has established for the successful organisation of impartial motor trials, and the number of entries for this year's events is proof that a Club certificate or award is a valuable asset. It would be interesting to know the total expenditure that makers have thought it worth while to incur in the hope of securing a trophy from Ireland, or a medal in the recent 1,000-mile tests. In the Gordon Bennett Race the Club had to deal with conditions differing greatly from those of any previous contests under their jurisdiction, and we may be proud that, thanks in no small measure to the tact and energy of our Secretary (Mr. Orde), we have secured such general approval in this new field. We have quite eclipsed the record of the "Paris-Madrid." If to be busy is to be happy, let me assure anyone who undertakes the duties of organiser or marshal for such events as the speed trials in Ireland or at Southport that he will be very happy.

SPEED TRIALS.

It is, to my mind, very doubtful if motor-racing has come to stay, unless the classification difficulty be tackled at once—not on a crude cylinder capacity basis, but on some more scientific plan, which will make further increases of speed impracticable. Under the present weight classification the nerve of the driver more than the perfection of the car is tested. Speed contests may afford true sport, but with the serious work of a Society of Encouragement in view, we must only allow a moderate licence to this more popular side of our activities.

Apart from the monumental Phoenix, it would be hard to find a better course than that in Phoenix Park, Dublin, either from the point of view of spectators, competitors, or organisers. By keeping a width of 40 ft. clear on each side of the track everyone had a better view of the race for a longer distance, and the gravel paths parallel with the track were left available for mounted messengers, flagmen, and officials. With fencing along the side, and high barricades across the track beyond the finishing point, the possibilities of danger to spectators were remote. The remedies for the grievances that occurred are more suited for discussion in committee than on the present occasion. But it may be well to record my opinion—

(1) That in any short races on made road, the use of a dust layer is almost essential.

(2) That a 40 ft. road is adequate for touring cars competing in pairs, but is somewhat risky for two large racers unless with the most experienced drivers.

(3) That 400 yards is sufficient distance for racers to pull up in after crossing the line at 85 miles an hour.

(4) That short races from a standing start are practically tests of the clutch and of the adhesion of the driving wheels, and pushing off should be forbidden.

(5) That a telephone system is essential for marshalling purposes and for announcing results, and should be independent of any electrical timing arrangements.

(6) That for races longer than at Phoenix Park—say, more than two miles—a special arrangement of electrical timing apparatus should be provided to prevent the serious delays which were found necessary with the Clough to Castlewellaan races, where competitors had frequently to be detained on the starting line until the time of a vehicle which was expected at the finish had been recorded on the apparatus.

(7) That the number of officials allowed on the course should be kept as small as possible, and that the duties of each should be very clearly set out.

(8) That the last day for entries at the "late fee" rates should be at least fourteen days before the date of the trial, in order that competitors' instructions and timed programmes of events may reach the competitors a week before the event.

* From a paper read at the Automobile Club on the 10th inst.

(9) That if there is a large number of competitors, to eliminate them in heats of two requires only one less test than to time them individually; but if they be run against the clock, the prizes may be given to the shortest time, although the running is in pairs. To run the two shortest times in the final has the drawback that a mistake in timing, or a successful protest, may make the entire race void.

The chief defects of the present classification by weight are that it places no limit on the horse-power, and does not sufficiently encourage the features which are desirable in commercial vehicles. It is to be hoped that whatever new system is evolved will as far as possible eliminate the "driver's nerve" factor, and will encourage efficiency of fuel consumption—a factor which includes efficiency of engine, of transmission, and of driver.

RELIABILITY TRIALS.

Turning to the more practical Reliability Trials, we come to a field in which we as a Club may claim to have been the pioneers. The general lines on which these Trials have been run owe much to our first Secretary, Mr. Johnson, and we are fortunate in now having as Technical Secretary one of his able lieutenants. The amount of detailed organisation necessary for the success of competitions of the magnitude of the 1,000 miles Trials in September last is enormous, and Mr. Joy is to be warmly congratulated on the success of his untiring efforts.

The awards in these Trials have only just been issued, and many have thought the two months' suspense unnecessary and vexatious. I can assure them, however, that their opinion would be reversed if they saw the reams of calculations which the system of marking has involved both for the Judges and for Mr. Mallam, the indefatigable Hon. Sec. of Records. Those who have seen the inner working of this year's system must have come to the conclusion that the elaborate marking under no less than seventeen heads is a cumbrous method, very liable to defeat its own ends. In fact, I am not at all sure that the final marks have placed the awards in accordance with the intentions of the Trials Organisation Committee. As a member of that body before I was honoured by elevation to the Bench, I heard most of the lengthy discussions which resulted in allotting certain maximum marks to each item, and I believe the Committee's intention was to give to each item an importance in proportion to its maximum marks. Thus reliability on the road, with a maximum of 3,000 marks, was to be the most important factor; garage work, with a maximum of 1,500, was to come next; then condition after trial and hill-climbing, with a maximum of 1,000 each; then fuel consumption, dustiness, and track speed, with 500 each; then steering, brakes, re-starting on hills, noise, vibration, smoke, and accuracy of declared horse-power, with 250 each; and, finally, cleanliness of motor, with 125. As the work of judging progressed, however, it quickly became evident that the marking would not have this effect, and I think I shall be expressing the feelings of my brother judges in saying that we saw the final order of marks last week with a sense of relief that, in spite of the awful possibilities of the system, it had resulted in placing the awards with really good cars.

The point which was overlooked when settling the system of marks was that the awards would depend, not on the aggregate marks obtained, but on the marks lost—i.e., it is a matter of differences, and not of ratios. The Committee's views as to the relative importance of reliability, condition, dust, etc., could more correctly have been put into effect by so arranging the marking that the estimated difference between the best and worst cars under any heading would be in proportion to the desired importance of that heading. I have had the curiosity to work out the marks lost by all the cars under each of the seventeen headings—a little matter of some 1,200 subtraction sums. The greatest difference in reliability between the cars which are at all "in the running" is seldom more than 100—a difference which is equalled under almost every other heading, and is greatly exceeded under "Condition after Trial" and "Dustiness." That these last two items are important no one will deny, but it is also obvious that any of the other fifteen headings had as much effect on the final order as had "Reliability."

In the cheapest class the medallists are low down in regard to "Accuracy of Horse-power," apparently because they had not many gears, and therefore, on the hills on which horse-power was measured, they could not keep their engines at normal speed—i.e., they could not exert their normal horse-power; though the cars with more gears scored in this respect, they apparently lost under reliability, tending to prove that the simple two-gear cars are wise in sacrificing speed on hills for the sake of simplicity and reliability.

A more equitable result could have been arrived at if the Judges had been given a wider discretion as to how marks were to be deducted. There can be no question that the Trials have secured a vast amount of information which should be invaluable in showing makers in what particulars their cars are open to improvement, as well as in securing accurate data as to current practice upon which to base useful general conclusions.

It has been suggested, with a considerable amount of truth, that trials of the kind just held are no test at all of the large cars, and are too severe for the small cars. It is obvious that a 5-h.p. car must be continuously working at high pressure if it is to keep up to the requisite speed, whereas under the same conditions a 25-h.p. car can hardly any time be developing its full power. For this reason, I think, the 1,000 Miles Trial of 1903 will be the last of its kind, and we shall have to find some other method of proving the qualities of various cars. The number of cars to be tested is certain to increase, and with it the difficulty of marshalling, observing, and judging.

To my mind some more severe form of the Quarterly Trials would afford sufficient opportunity for testing the reliability of any new cars. A 200-miles non-stop run might be a suitable test for the larger cars, and 150 miles non-stop for the smaller ones. The annual competitive trials might then be confined to cars holding these non-stop Reliability Certificates, and might consist solely of tests of particular features, without any attempt to determine by an arbitrary standard which car has the best collection of features.

It would be of real value to have independent tests upon a large number of cars of the efficiency and easy running of the engines and of the transmission gear, tests of the carburettors and the range of engine speed, of the fuel consumption under varying loads, of the silencers and back pressure, of the radiators and the weight of water and power lost, and of other similar points upon which makers have now little more than experience of their own patterns to guide them. Such tests can best be undertaken by the Club, but there is room for work of a more experimental nature, which is, perhaps, beyond the province of a Society of Encouragement. I, for one, feel the need of such research in connection with spirit engines, and, following the lead of Mr. Dugald Clerk, I hope shortly to begin a series of tests, with a view of throwing a little light on some of the obscure points in this interesting field.

CLUBS AND ASSOCIATIONS.

NORFOLK.

THE first annual dinner of the Norfolk Automobile and Launch Club was held at the Maid's Head Hotel, Norwich, on Friday, the 11th inst. Lord Claud Hamilton, the president, was in the chair, and after the toast of the King and the Prince of Wales—the latter being the Patron of the club—had been honoured, Mr. R. W. Wallace, K.C., proposed "Success to the Norfolk Automobile and Launch Club." It was some time since they came to Norfolk on a tour and to show the benighted people of the district who had not seen a motor-car what wonderful things they were. The members of the club met with a pleasant reception in Norwich. In coupling with the toast the name of Lord Claud Hamilton he could not help thinking that his lordship was a great source of strength to a local club of that character. He did not think that motorists would be easily suppressed. As cars became cheaper and more popular, they would find that their use would be much more acknowledged, and that popular prejudice would die out. It was most important that the Automobile Club should have representatives throughout the country, and therefore he welcomed the promotion of clubs like the Norfolk. In conclusion, Mr. Wallace referred to the vast possibilities of motor launches, and said people would be able to take extended tours on the Broads of Norfolk, and would be able to move about regardless of the wind.

Lord Claud Hamilton, in reply, said that when he was asked to accept the office of president of the Norfolk Club he had some misgivings on the subject, because he was not an enthusiastic motorist. He looked upon motoring not so much as an amusement, but as an enterprise which would confer vast benefits upon the human race. He knew in some respects that motor-cars might prejudicially affect railways—"No, no"—but in the long run anything which tended to promote locomotion must benefit railways. That was the view which he wished to take—and therefore he felt, when he was asked to become president, that he would show there was one railway chairman who did not fear, but rather welcomed, the advent of motor-cars. The motor-car industry had made great advances in the last year or two, and he felt that the advances might have been greater had not there been shortcomings among, he was glad to say, only a small minority of motorists. In all these matters they were bound to consider not only one or two classes, but the interests of the whole of the community. A limited number of selfish men had by their conduct placed a large number of the poorer inhabitants of the island in antagonism to the promotion of the motoring interest. He urged the members of the club to avoid doing anything that would prejudice the interests and good feeling of other classes. By degrees they would find them come round, and the restrictions which Parliament had put upon motoring would be relaxed. Motoring would then become not a sport for one class, but for every class. In conclusion, his lordship spoke of the services of Mr. Chamberlin, the chairman of the club, and Mr. James Howlett, the secretary.

Mr. S. F. Edge then read a paper on "Motor Vehicles," in the course of which he said that when the man with the red flag was abolished in this country there were three important types of cars, the Daimler, the Benz, and the De Dion. Since then changes had been made in the higher speeds of the engines and the reduction of the moving parts, and the almost universal adoption of electric ignition in some form or other. The next stride forward was to eliminate all the parts necessary to remove the old hit-and-miss governor on the exhaust of the early Daimler and substitute the throttle contrivance, which had not been convenient to do with the old tube ignition, requiring constant speed and constant compression to give its best results. Whilst this evolution of the Daimler engine had been going on, the Benz type had not been idle; the connecting-rod and crank shaft had been covered in, two cylinders of higher speed were being used, and other improvements made. The high-speed De Dion was also developing. To-day the vertical engine was universal, with practically the one exception of the horizontal engine of the great engineering firm of Wolseley, but the number of cylinders

was still in doubt. They had cars with from one to eight cylinders, and, speaking broadly, the price, comfort, and reduction of noise grew with the increase in the number of cylinders, but, curiously enough, the increased number of parts caused by multiplying the number of cylinders did not seem to increase the number of breakdowns on the road. There was no doubt the comfort of users was materially increased by the multiplication of cylinders. There was a choice of one of the following types:—(a) Small single cylinder car to carry two or three people, for £150 to £250; (b) light or heavy twin cylinder car for £300 to £400, to carry up to five people; (c) light four cylinder car for £500 to £900, to carry up to five people; (d) light and heavy four, six, and eight cylinder cars for £800 to £2,000, to carry from four to seven or eight people. The future would, he thought, bring forth the (1) one cylinder car, and make it a most useful and standard car, cheap to buy, keep, and run; (2) a four cylinder car of four speeds; (3) four or six cylinder car for speed, touring, weight carrying, and other severe work, with two, three, and four speeds. These seemed to him to be the eventual types. They must, of course, always keep in mind that there might be a development of an engine on the turbine principle to take the place of the reciprocating engine, but exactly what effect this would have on design he had not considered. A reference to motor-boats concluded the paper.

Mr. G. M. Chamberlin proposed the toast of "The Visitors," coupling with it the names of the Dean of Norwich (Dr. Lefroy), and the Sheriff of Norwich (Mr. Leathes Prior), Mr. R. W. Wallace, K.C., and Mr. Rees Jeffreys.

In proposing the toast of "Our Guest, Mr. S. F. Edge," Mr. H. L. Clark gave a summary of the proceedings of the club during its short and successful existence.

Mr. Edge having replied, the health of the chairman was proposed by Mr. Wallace, and the response of Lord Claud Hamilton brought the pleasant gathering to a close.

YORKSHIRE.

THE paper on the new Motor Car Act read by Mr. Herbert A. Jones, at the Yorkshire Automobile Club, on the 8th inst., was a great success. There was an extremely large muster of members, and an interesting discussion took place, in which Messrs. Farnell, Winn, and others joined. Mr. E. Hepper was in the chair. Amongst the firms who sent sample lamps were Messrs. Salsbury, and speedometers were sent by Messrs. Markt, Paffard, Staunton, and Dunhill. Messrs. Elliot Bros. sent an interesting model, comprising a speedometer on dash board and actuated from a front steering wheel, which was driven by a small electric motor. Those showed graphically the use of the speedometer.

DURHAM.

A MEETING of the members of the A.C.G.B.I., the local correspondents of the Motor Union, the Committee of the Sunderland and District Motor Association, and other gentlemen interested in automobilism, has been held in Durham, under the presidency of Mr. John H. Pease. It was decided to form a County of Durham Automobile Association of contributory local associations (covering the whole of the county) of which two are already in existence, and two will very shortly be. It is to be hoped that all owners of motor-cars and motor-cycles will join their local associations. Gentlemen residing in any part of Durham who are willing to join the association are asked to communicate with Capt. H. Streatfield, of Ryhope Hall, near Sunderland.

KENT ROADS.

At a meeting held at Fooks Cray, with Mr. F. Arrow in the chair, Mr. Bayntum proposed the formation of the Kent Roads Cycle and Motor Club, which was carried with enthusiasm. Mr. N. Cunningham proposed "That the officers of the Club consist of a captain, sub-captain, hon. secretary, and hon. treasurer, the captain and sub-captain to be elected at the general meeting." Mr. H. Worthington seconded this motion, which was also adopted. Mr. Chitty proposed that the management of the club be left in the hands of a committee consisting of seven members, until the general meeting takes place, which should be at some date early in January, 1904. Mr. Barnard seconded this proposition, and the following gentlemen were elected on the committee:—Messrs. F. Arrow, B. Cunningham, C. Martin, H. Chitty, Huntley, Barnard, and Bayntum.

MOTOR-CAR RACING—A SEQUEL.

LORD STORMONTH DARLING, in the Edinburgh Court of Session, has closed the record in an action by the Equitable Assurance Society of London against the General Accident Assurance Corporation, Limited, of Perth, in which they ask a decree for £2,000. In November, 1900, the plaintiffs insured the life of the late Claude Lorraine Barrow, of Biarritz, France, for £2,000, and defendants agreed to reinsure plaintiffs to the full extent against any loss which might be incurred by them under the policy in the event of Mr. Barrow's death arising directly from accidental injuries received from an accident to a motor-car in which he should be riding. Mr. Barrow received injuries in the motor-race from Paris to Bordeaux, as a result of which he died, and the plaintiffs now seek payment of the sum named.

The defendants aver that the guarantee was procured from them by concealment of the true nature of the risk to be insured, and state that Mr. Barrow was designated as a gentleman, this being the only information received as to the class of risk to be insured.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED, M. P. H.	RESULT.
Bow St., London	Capt. A. Hill, Grafton St., W.	—	£2, etc.
Brighton	J. Lorecunley	16	£2, etc.
Guildford	*J. F. Rickings	—	£3.
"	G. C. Halahan, Chiddingfold	—	Dismissed.
Coventry	W. Williams, Coventry	—	£5, etc.
Wycombe	A. Loeb, Oxford Street, W.	27	£1 5s.
"	P. H. Harrington, Oxford	24	£1 6s. 6d.

* Indicates Motor-Cycle Case.

ALLEGED BREACH OF CONTRACT.

AT the Marylebone County Court, on Monday, before Judge Stonor, Mr. John W. Alexander, of Mile End Road, E., brought an action against the Automobilia Societe Anonyme, Oxford Street, Marble Arch, W., claiming £25 damages in respect of alleged breach of contract to supply motor-cars on hire. The plaintiff stated that he had been in the habit of taking a party down to Goodwood to attend the races there every year, and this year he decided to take his friends by motor-cars. In July he arranged with defendants for the supply of two large motor-cars on July 30th, each to hold eight persons. He paid £2 deposit and arranged to call for the cars at six o'clock on the morning of the day in question. On the preceding day he called at the garage, and was told that he could not have the two large cars, but two smaller ones, each to hold four persons, would be ready. After some demur, plaintiff agreed to have the smaller cars at reduced price, but when he and his party called next morning the cars were all in pieces being repaired. Owing to the cars not being ready as agreed he sustained considerable loss and great inconvenience. The defendants' manager at the Marble Arch garage said that the only reason the cars were not supplied was because the plaintiff refused to sign the usual form of hire. The plaintiff stated that on the 29th he was told that he would have to sign the form, and he agreed to do so as soon as he got possession of the cars, but when he went to the garage next morning nothing was said about signing the form. His Honour said he thought that there was no defence to the claim, and judgment was given for the plaintiff for £12, with costs.

MOTOR-CAR ACCIDENTS.

MR. WALTER SCHROEDER held an inquest at St. Pancras on Monday on the body of Arthur Goodrich, aged sixty, who was, it appeared, travelling by a tramcar on October 18th, up the incline of Camden Road towards Holloway, and, alighting on the "off" or wrong side of the car at Cantelow Road, he essayed to cross Camden Road at a time when a motor-car, belonging to the Fairman Automobile Company, was descending the incline at the moderate rate, according to independent witnesses, of eight or nine miles an hour. As the motor-car neared the deceased, the driver sounded the horn several times. Ultimately Mr. Goodrich stopped, the driver simultaneously altering his course to avoid him, but the deceased immediately retreated instead of advancing, and, colliding against the front wheel of the car, he was knocked down. It was stated by a representative of the Fairman Automobile Company that the driver, after supplying them with a written account of the accident, had disappeared, and his whereabouts at present was unknown. The car had been hired by a gentleman, and the company had no responsibility in relation to the car or the driver after the motor left their premises. The jury returned a verdict of accidental death.

A SERIOUS accident occurred on Monday evening at Houghton, near Leicester, a motor-car belonging to Captain Neil Haig running into a dray when descending the Houghton Hill. One of the dray horses was killed on the spot, and the motor-car was smashed. The four occupants were thrown out, the driver, Adams by name, sustaining such injuries that his life is despaired of. A little girl had her skull fractured in two places, and now lies at the Leicester Infirmary.

A CASE DISMISSED.

DILLON WILLOUGHBY surrendered to his bail at the Central Criminal Court to answer the charge of having obtained money by false pretences from Mr. C. Jenkins. The case arose out of a dispute as to terms agreed upon in certain negotiations for the purchase of a Panhard motor-car. Mr. Newton Crane, for the prosecution, stated that since the case was before the magistrate certain documents had come to light which put a different complexion on the whole dispute, and after

examining the papers, he had felt it his duty to advise his clients that the case was one rather for a civil action than a criminal prosecution. It now transpired that the defendant was really an agent for an agent of the Panhard Company, and that there was substantial ground for the defence he had set up. Under these circumstances he proposed, with his lordship's permission, to offer no evidence. Mr. C. F. Gill, K.C., on behalf of the defendant, concurred in the course proposed to be taken, intimating that if the case had been proceeded with there would have been a complete defence. The jury, by direction of the Recorder, returned a formal verdict of not guilty, and the accused was discharged.

ON THE WRONG SIDE.

AT Liverpool, a motor-car driver, named George Burke, was summoned for neglecting to keep on the near side of the road when crossing the junction of Dale Street and Hatton Garden. The magistrates imposed a fine of 10s. and costs.

AMONG the new members of the French Automobile Club elected last week we notice the name of Mr. D. M. Weigel.

THERE will be five Napier cars in the British eliminating race for the Gordon Bennett team. Three of the drivers have already been nominated, viz.:—Messrs. John Hargreaves, Mark Mayhew and S. F. Edge.

In addition to the making of motor castings, Mr. Rowland Hill, Coventry, has added several branches to his business, such as pattern making, machining boiler cylinders, steering gears, back and front axles, and also the manufacture of channel steel frames. Extensions have been made to the premises to make room for this extra work.

MR. R. S. L. BOULTER writes that the Godstone Rural District Council has decided to ask the Local Government Board for permission to restrict the speed of cars to eight miles an hour from the top of Godstone Hill to Blindley Heath, a distance of four miles. This road is the main highway from London to Eastbourne, and is probably one of the widest in that part of the county.

MESSRS. LOWE, BEVAN AND COMPANY, Charlotte Street, Birmingham, are introducing a registered design of paraffin lamp, and name plate attached, to be affixed to the rear of a car. There is an adjustable reflector above the lettering. The name plate is detachable, and a red light is sunk into the centre of the reflector, which latter is a hinged door that can be closed down during the day. The lamp is fixed to a bracket on the car by means of a clip and fastened by a set-screw to prevent vibration. As the lamp is above the lettering the number can be readily seen from any position on the road. The lamp itself is of a similar type to the firm's well-known ordinary paraffin pattern, and is made in two sizes, according to the number of letters to be illuminated.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

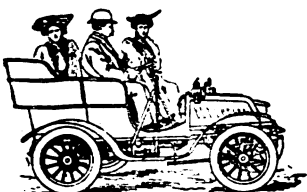
VOL. V.]

LONDON, SATURDAY, DECEMBER 26, 1903.

[No. 251.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



COMPLAINT is often made as to the difficulty of obtaining efficient drivers for motor vehicles. It is hoped that the classes which have been established at Battersea and elsewhere under the auspices of the L.C.C. Technical Education Board will have the effect of increasing the supply. Very gratifying is the interest which such classes have evoked among intelligent young men with a predilection towards mechanical matters, and it is clear that a wider knowledge of the principle upon which the automobile is constructed may be of value to the community. The usefulness of the tuition thus afforded will be increased now that a motor car is in the actual possession of such an institution as the Battersea Polytechnic, and the students are being instructed in the practical driving of cars as well as in the details of construction.

The Affiliation Question.

ALTHOUGH not represented at the recent conference of provincial clubs in London, the Lincolnshire organisation has at its annual meeting come practically into line with the clubs there represented, the members at the annual meeting having adopted a resolution to the effect that "before advising the committee to affiliate with the A.C.G.B.I., or the Motor Union, or other recognised central automobile authority, this meeting place on record their opinion that in any scheme of affiliation or federation it is essential that the terms should make provision for adequate representation for members of their club on the actual governing body of the association to which they affiliate." This is a statement of one of the reasons that led the Reading Club to take the initiative in the agitation. It was also agreed "That this club should be recognised as the local authority in all purely local matters affecting automobilism, and that it is desirable that a reduction in the affiliation fee should be obtained. Before signing any affiliation agreement, the agreement shall be placed before a meeting of members of this club for approval." Captain Cole and Dr. Cragg will represent the club at the conference to be held with the A.C.G.B.I. on February 15th next.

Naming Cars.

IN our Correspondence columns the Lord Chief Justice Clerk of Scotland refers again to the suggestion he made as to naming motor-cars in a similar way to that which owners of yachts and similar craft have long adopted. He hopes that the practice will become general—a point upon which we are at present somewhat sceptical. For, as automobilism increases in favour in this country, it will be seen that the mere sporting element will be relegated to a minor place in the industry, and that the greatest development will have to be in the direction of business. Of course the pleasure car will always have its place on the road; but vehicles used in a more utilitarian direction will be in the majority.

Wisdom at Wolverhampton.

THE Wolverhampton Council having delegated the powers conferred upon them under the Motor Car Act to the Watch Committee, they invited motor-car manufacturers and the Honorary Secretary of the Wolverhampton and District Automobile Club to confer with them on Wednesday week. As a result of that meeting the Watch Committee decided that the fee payable for assigning a general identification mark to a manufacturer or dealer should be 20s., and that no effort should at the present time be made to close any of the streets in the borough against motor-cars, or to reduce the speed limit. The governing authorities have been extremely considerate towards motorists, and, in view of complaints which have been made against strangers driving through the town at excessive speed, offenders in the future will be prosecuted. The members of the Wolverhampton Club will support the police in this matter.

London's Congested Traffic.

THE Royal Commission on Locomotion and Street Traffic continues to receive evidence from representatives of London boroughs. It has been abundantly shown that the present chaotic state of things with regard to the opening of roadways, the closing of thoroughfares, and the general dislocation of the business interests of the Metropolis is wasteful and wanton. Mr. Whur, Chairman of the Works Committee of the Paddington Council, urges that slow-moving, heavy vehicular traffic should be under more stringent regulations than at present. Mr. W. N. Blair, engineer for the important borough of St. Pancras, which has a population of 235,280 persons, gives the ratable value at £1,795,207, and says that it contains ninety miles of road. A census of traffic recently taken showed that there passed at Cleveland Street 875 vehicles, including 114 omnibuses, in one hour; at Tottenham Court Road 1,028 vehicles, including 289 omnibuses; and in Pentonville Road 791 vehicles, including 147 omnibuses and 46 tramcars, in one hour. It would appear, therefore, that the bus traffic of London is one of the great obstacles to speed, and the creation of new routes would seem to be a necessary step in any early reform. Were motor-omnibuses general, not only would they take up less space on the roadway than the present horse-drawn vehicles, but their more rapid movement would result in a general quickening of traffic and a consequent lessening of the congestion of the streets.

A Motorist helps the Police.

THAT motorists are not unfriendly to horses has been often proved in these columns; further evidence comes from Kingston, where a man was charged with cruelty to a horse by working it in an unfit state. The chief witness was a motorist, Mrs. Howell, of Clive Lodge, Esher, who was out driving in her motor-car when she saw the defendant's horse attached to a cart standing by the side of the road at Esher. Noticing some sores on the animal, she stopped her motor-car to speak to the defendant, who at the same moment drove off. She called on him to stop, and as he would not do so she signalled to

a police constable, who got into her car and went in pursuit of the defendant. He was ultimately obliged to pull up, and his name and address were taken. The chairman, on behalf of the Bench, thanked Mrs. Howell for the trouble she had taken in the matter, and fined the horse-owner 40s. and costs. It seems a pity that the police and the motorist cannot always be on such friendly terms. There is no doubt the latter could help the former in carrying out their duties very materially.

The Conveyance of Cars by Rail.

ON another page Mr. E. M. C. Instone calls attention to an extraordinary form of indemnity which the railway companies now require to be signed by the consignor of a motor-carriage before they will accept it for conveyance by rail. The person sending the motor-car is to indemnify the company against "all damage, loss, or expense which may arise out of, or be incurred in consequence of, such conveyance." This is an unwarrantable demand on the part of the railway companies when it is remembered that such vehicles will not be carried at all unless they conform to the regulations of the carrying company. We trust the suggestion made by Mr. Instone will be seriously considered by the trade and amateurs alike. The fact that the matter has been brought forward in this fashion shows the necessity for combination among motorists.



Young Motorists.—The Children of Mr. Gould, the American millionaire, in their miniature Electric Car. (Motor, New York.)

Protests Wanted.

COMING at the Christmas season, there is just a fear that the importance of the subject may be overlooked amid the prevailing festivity. Hence the hope that other correspondents who have received similar forms of indemnity for signature will make early protest against the evident desire of the railway companies to relieve themselves of a responsibility which should be entirely theirs, especially having regard to the high rates charged for the conveyance of automobiles.

Unattended Horses.

A POINT of some interest to motorists occurred in the case heard in the City of London Court, when Mr. P. Baxter, the owner of a car, sued a laundry company for damage done to the automobile by the defendants' horse suddenly becoming restive. The plaintiff was turning out of Savoy Street into the Strand, London, when the horse attached to the defendants' van swerved round and damaged his vehicle. The horse was unattended at the time. Judge Lumley Smith said it was too wide a proposition that merely leaving a horse in the street while a driver went into a house was in itself negligence. Coming to the court every morning, he noticed the streets were lined with carts while the drivers were calling for orders or delivering parcels. He dismissed the case in question, but we would doubt his general opinion as to the right of horse-drawn vehicles to line the streets without anyone being in charge of the horses. The unwisdom of such procedure is apparent to the lay mind.

Artists and the Car.

ARTISTS have lately been turning from their studios to watch the change that is coming over the locomotion of our streets. Sir W. B. Richmond has discovered that the motor-car is not a "thing of beauty." Mr. Briton Riviere, R.A., has come to the conclusion that the horse is an beautiful animal, the loss of which would rob our streets of much of their joy. Possibly that might be the case, but the London ratepayer—a being with an inartistic and utilitarian soul—is more likely to be affected by the calculations of Borough Surveyors to the effect that the scavenging of the metropolis costs thousands a year. If motor-vehicles became general in the City and suburbs, some proportion of that amount would certainly be saved. But even the artists are not united on the matter, and while the two named have shown a sturdy conservatism with regard to automobiles, another, Professor Herkomer, is an enthusiastic motorist, his sympathy with the movement being practically shown by the offer of an international trophy for touring vehicles.

Slow Traffic.

A CASE connected with the new regulations of the Manchester Corporation for the control of slow-moving and heavy traffic in the streets has been heard at the Manchester City Police Court. A van-driver employed by the Cheshire Lines Committee was summoned for not keeping his van as near as possible to the footway or kerbstone on the near side of the road, the prosecution being undertaken on an allegation that the defendant had by failing to do so obstructed a tramcar. It was urged by Mr. A. E. G. Chorlton, for the defence, that the Corporation statute of 1902 and the bye-law made thereunder only applied to heavy and slow-moving traffic, and did not cover a light, fast-moving vehicle like a van, and that the Corporation could not be allowed to stretch their regulations to include other than the heavy and slow-moving traffic which the Act specified. The Bench dismissed the summons on this ground—a very nice distinction.

The Efficiency of Motor Fire Apparatus.

AN interesting test of the Tottenham Fire Brigade's motor chemical fire engine and fire escape was recently made in a neighbouring district, where some trouble was experienced with the horsing arrangements. The machine was placed in the fire station as for ordinary service, the trial being to ascertain what advantage, if any, could be obtained over the existing arrangements by the use of an automobile. Upon the "call" being received (which also gave the alarm for the horses) the vehicle started out of the station in less than half a minute, and immediately proceeded to a spot selected, at a distance of one and a half miles. Considerable delay occurred in the arrival of the horses for the manual engine, and this, with the extra time

involved in travelling, made a difference of over fifteen minutes beyond the time taken by the automobile. The return journey, one and a half miles, was accomplished by the latter in four and a half minutes, equal to what is about to become the "legal limit."

Look at the Brake.

MANUFACTURERS long ago recognised the importance of providing a sufficient number of powerful brakes, effective in both directions, and the majority of cars have not only the usual brake on the transmission, but a pair of band brakes operating on drums directly attached to the rear road wheels. These, when kept in proper adjustment and condition, will hold a car, fully loaded, on any hill that it can climb. It would therefore seem that the only reason for a vehicle running backward down a hill and getting beyond the control of the driver is that the first principle in the use of any piece of machinery has been neglected—that is, the careful examination of all operative parts to see that they are in proper working condition and properly adjusted. The brakes require occasional adjustment to compensate for wear, and should be given particular attention before starting for runs over roads that are known to be hilly.

Modern Locomotion.

A NEW work on up-to-date locomotion, viz., "Tube, Train, Tram, and Car," by Mr. Arthur H. Beavan, has just been published by Messrs. Geo. Routledge and Sons, Ltd. It has a brief introduction by Mr. Llewellyn Preece, who apparently believes in the future of the electric automobile, for he regards it as "only a question of a few years for the petrol and steam cars to be placed in museums and shown as monstrosities of the past, and (thinks) that every cab, omnibus, and private carriage throughout the country will use electricity as the motive power." Mr. Beavan's book is mainly interesting for its ample review of the history of electrical railways in this country, and the way in which the author treats of the tramways of the provinces. Popularly written and well illustrated, the book is likely to have a wide circle of readers among those who are interested in the development rather than the drier technicalities of modern locomotion.

Short Spins for Workhouse Inmates.

MR. C. W. BARTHOLOMEW is a guardian of the Towcester union and a motorist of benevolent mind. He drives to the Board meetings in his automobile, and has just offered that his vehicle shall be used in taking the workhouse inmates for rides in the country while he is engaged with his fellow guardians. Life in such institutions must be monotonous indeed, and the motor-car may do much to relieve the daily routine. We hope the nerves of the passengers will not be upset by the police of the district, and that they will not have to suffer from the indignity of police traps—those un-English methods in which the police seem to take official delight.

Motorists and Hotels.

HOTEL-KEEPERS have much to learn, and at this season of the year, when they are looking for clients as well as receipting bills, they might well reflect upon their ways. In the future competition will be keener than ever; but if the proprietors of hotels are wise they will not suffer on that account. Motoring is producing a new generation of travellers—men who can afford to pay a little more than the jaded cyclist of a decade ago, and who generally have some of their family or a few friends with them. Hence their expenditure when away on tour must necessarily be fairly considerable. This is true of normal times; when meets are arranged by clubs expenditure gets beyond all idea of reason and vaunt, into the ridiculous—thanks to the rapacity of the proprietors of some hotels.

Reasonableness Wanted.

THESE gentlemen must remember that motorists are not millionaires, and that, although they may not have to pay railway fares, the expenses of automobile touring are sufficiently high without being raised further by extravagant hotel charges out of all proportion to services rendered. Thanks to motoring several hotels we could mention which would otherwise have been practically closed this winter will remain open for the convenience of the many ladies and gentlemen who seek to get away from cities and towns in December to the freer atmosphere of the country. They will assuredly reap their reward in a revenue likely to be of an increasing character, provided moderation in charges prevails.

The Berkshire Club.

AT a meeting at the Great Western Hotel, Reading, on Saturday last, the Berkshire Automobile Club was formed, and already it numbers nearly fifty members. There was a representative attendance, while the Earl of Craven, Sir Francis Jeune, and other well-known motorists, wrote approving of the formation of the club, and promising their help in making it a success. Sir Gilbert A. Clayton-East has been elected chairman, other members of the committee being the Earl of Craven, Sir Alexander Henderson, Bart., Captain Arthur Hill, M.P., Sir Francis Jeune, K.C.B., Mr. C. D. Rose, M.P., Mr. R. Hargreaves, Mr. J. F. Ochs, and Major E. R. Portal. Mr. Shrapnell Smith has been elected treasurer, the hon. sec. being Colonel W. Waring, of Beenham Grange, Reading. It was also decided to affiliate with the A.C.G.B.I., the committee of the club, however, being empowered to arrange terms.

Balloons at the Agricultural Hall.

WITH regard to the International Motor Car Exhibition to be held at the Agricultural Hall, London, we hear that the War Office will co-operate with the Aero Club in a way that should add to the public interest in the event. They are likely to lend for the purpose of display the experimental models, etc., of the balloons used at Ladysmith, and these should provide a popular feature of the Central Hall.

MR. FRANK MORRISS has taken from the Corporation of King's Lynn three and a half acres of land on which to erect a new automobile factory.

OWING to the success of the Reliability Trials promoted by the Motor Cycling Club last season, Mr. S. F. Edge has offered to present another trophy to be competed for during 1904.

AT the West Ham Technical Institute three bicycle motors are in course of construction by students under the direction of Mr. John Duncan, the head of the engineering department.

THE Automobile Club is anxious to secure a private piece of road, either asphalt, cement, or wood, for the carrying out of the Side Slip Trials. If possible, the road should be within ten miles of London.

THE motor repairing department of the Imperial Tyre and Rubber Company, Limited, is in thorough working order. Early in the coming year the Imperial Company will place upon the market a new non-skidding tread for fitting on to existing tyres.

"THE Handy Touring Atlas of the British Isles" has just been published by Messrs. George Newnes, Ltd., and is designed to supply motorists and tourists generally with maps in a convenient form in place of the cumbersome sheet maps which have done duty hitherto. Its size is 6in. by 4in., making it convenient for the pocket. It shows all roads, villages, and hamlets with topographical and other useful features, and is a complete atlas of the British Isles in miniature. The maps have been reproduced by permission from the Ordnance Survey, and the hundred routes for motorists with which the book closes should be useful to readers in every part of the country.

The Paris Motor-Car Exhibition.



[Photo by]

GENERAL VIEW OF THE SALON.

[Dranger Dayé.]

The Paris Motor-Car Exhibition.

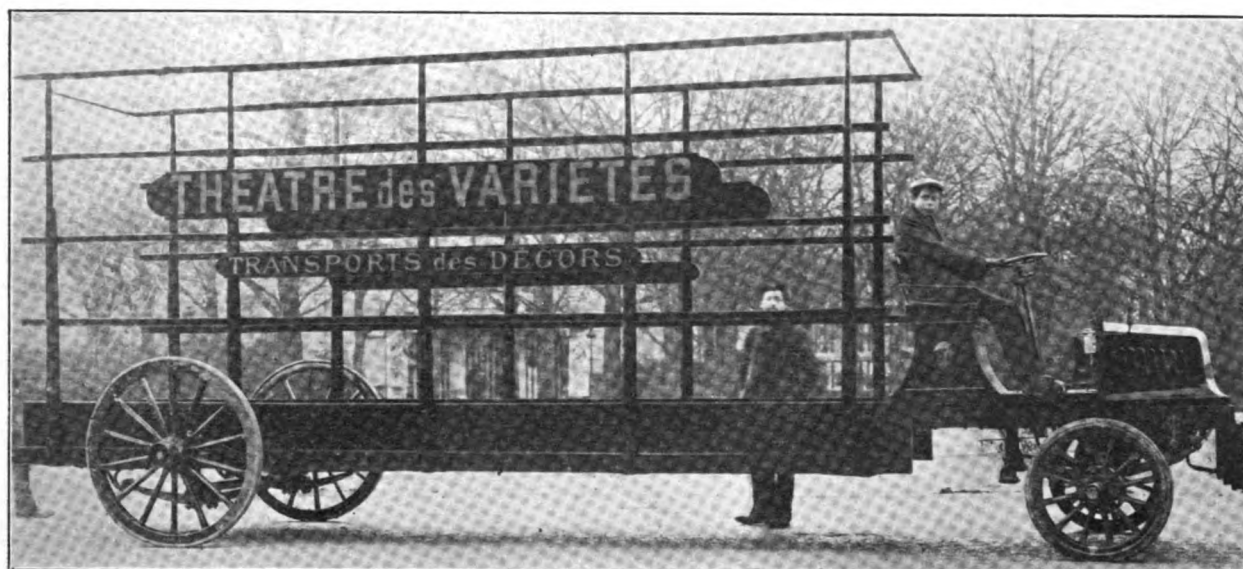


Fig. 29.—Tae Latli Motor Lorry for the Transportation of Stage Scenery. (See page 826.)

M. LUCIEN PERISSE, in an interesting review of the *Salon* in "La Vie Automobile," shows that of the chassis on view at the great exhibition 17 per cent. have engines of 8-h.p. and under, 62 per cent. have motors ranging from 8 to 20-h.p., while the remaining 21 per cent. are of greater horse-power. In another table it is shown that 15 per cent. of the chassis have single cylinder engines, 26 per cent. two cylinders, 4 per cent. three cylinders, and 55 per cent. four cylinders. The percentage in the case of the two cylinder engines has declined as compared with last year, while all the others show an increase, the greatest advance being in the case of the four cylinder type. The proportion of motors with mechanically-actuated inlet valves has increased from 45 per cent. of the total in 1902 to 67 per cent. this year, while now 96 per cent. of the engines have governors acting on the admission. As for frames, 46 per cent. are of pressed steel, 32 per cent. of armoured wood, 14 per cent. of tubes, and 8 per cent. of channel iron. Coming now to transmission, M. Perissé shows that while chain drives are still in the ascendant they have declined from 62 per cent. in 1902 to 53 per cent. this year. On the other hand, the cardan shaft transmission has increased from 35 per cent. to 45 per cent.

Among the first stands I examined on reaching the *Salon* were those of the Wolseley Motor Manufacturing and Napier companies, but my efforts to include a report of these exhibits in the last issue were frustrated by the postal authorities, who so far have failed to deliver the copy entrusted to them for transmission. The Wolseley Company display examples of their latest 24-h.p., 16-h.p., 12-h.p., 7½-h.p., and 6-h.p. cars. The latter should prove a popular type; it is a two-seated reproduction in miniature of the larger vehicles, and, although at first designed for two speeds and reverse, is, I notice, now being provided with three speeds forward. A feature of the latest models of Wolseley cars are the stamped steel frames and the longer wheel base. The countershaft brake has been abandoned, the drums attached to the rear road wheels now having brakes both inside and out, one expanding and the other contracting. The change gear-box has been improved, and is now not only oil-tight, but the top half can be removed without disturbing the bearings. The contact breaker is also now fitted on the dashboard.

The Motor Manufacturing Company, Limited, are to be congratulated on furnishing one of the *clous* of the exhibition, viz., the 25-h.p. Saloon car, of which an illustration was given in the last issue. The body, which was designed and built at the Coventry Works, is of the most sumptuous description. There are four corner seats inside, consisting of comfortably upholstered revolving chairs. Folding tables, drawers, and lockers are among other fittings, in addition to a barometer, thermometer, and clock. The occupants can communicate with the driver by speaking tube, while in addition there is an instruction dial, by means of which, by moving a handle, the wishes of the owner are transmitted to the driver, somewhat on the same lines as a captain communicates orders to the engine-room of a steamer. Specimens of the M.M.C. 20-h.p. and 8-h.p. cars are also displayed, a noticeable improvement in these being the provision of an iris throttle valve. This is controlled by the governor, and works on similar lines to the well-known iris shutter in photographic cameras. A new addition to the popular 8-h.p. M.M.C. cars is a governor, as a result of which the running of this vehicle has been made much quieter. It is pleasing to find that the M.M.C. concern have two chassis on view, one of the 20-h.p. type and one of the 8-h.p. Both are excellent specimens, and are attracting much attention on the part of French visitors to the *Salon*. In addition, examples of the 20-h.p. motor with mechanically-operated inlet valves, the 10-h.p. double-cylinder engine, and a full range of the M.M.C. cycle-motors, find a prominent position on the stand.

Messrs. S. F. Edge, Limited, display two cars, a 15-h.p. and a 20-h.p., both fitted with the hydraulically controlled carburettor described in a recent issue of the *Journal*. The 20-h.p. car with Cape-cart hood, illustrated in the last issue, is an excellent example of British motor construction, and is attracting much attention. Mr. Oscar C. Selbach has a stand on which he exhibits, among other things, a novel water-cooled engine, known as the Bailleul, for motor-cycles, the feature being the use of a combination inlet and exhaust valve, actuated by a double cam disc and a single rod and pivoted taper. A display of the "Spitfire" commutators and sparking plugs is also made.

Of the Tony Huber cars four types are shown—9-h.p.

two cylinder, and 16, 20, and 25-h.p. four-cylinder. The two larger sizes have engines with separate steel cylinders and copper water jackets. In all the inlet valves are mechanically actuated. Armoured wood or steel frames can be supplied, while the transmission may either be by cardan shaft or side chains.

Among the few firms making *avant trains*, or motor fore-carriages, is M. Latil, of Rue de Charonne, Paris. The arrangement is complete in itself and enables a horse-drawn vehicle to be converted into an automobile. They are made in sizes from $4\frac{1}{2}$ to 12-h.p. Fig. 29 shows a special 12-h.p. vehicle on this system, built by M. Latil for the Theatre des Variétés, Paris, for the transport of stage scenery. The car, which has a wheel base of at least 15 ft., is one of the attractions of the Show, and forms another illustration of the uses for which the automobile can be adopted.

The Elswick Motor Company, of Newcastle-on-Tyne, occupy a stand, on which three of the four-cylinder Elswick cars are displayed, a noticeable vehicle being a four-seated cab.

The stand in the Show which is probably attracting most attention is that where the new Leon Bollée cars are exhibited, the chassis displayed being continually surrounded by a group of admiring spectators. I was fortunate in getting hold of

the engine on the same shaft as the magneto, a flexible coupling being introduced between the two. The water pipes are of large diameter, and in order to prevent them rendering the valve gear inaccessible, both the pipe from the pump and the return pipe to the honeycomb radiator enter at the top of the cylinder jackets from above the engine. A collecting chamber is inserted in the return pipe, in which any fur can collect and be removed at intervals. A three-way cock is also introduced between the radiator and the pump, so that either the radiator or the cylinder jackets can be emptied independently. The fan fitted behind the honeycomb radiator is driven by a broad belt, the fan spindle being carried upon a rocking plate, sustained by an adjustable spring, so that the belt is always kept at the proper tension. The car is fitted with two distinct ignitions—magneto and coil, and the retarding or advancing of the spark of either is controlled by one lever from the steering-wheel. The high-tension ignition-plugs are supplied from an ordinary set of induction coils, each having a separate trembler. The commutator is mounted centrally on the cam-shaft operating the exhaust-valves. The low tension igniters work in conjunction with a rotary magneto driven by the engine, and the mechanism operating the igniters is so arranged that it can be thrown entirely out of use when required. In addition to the ignition, the speed

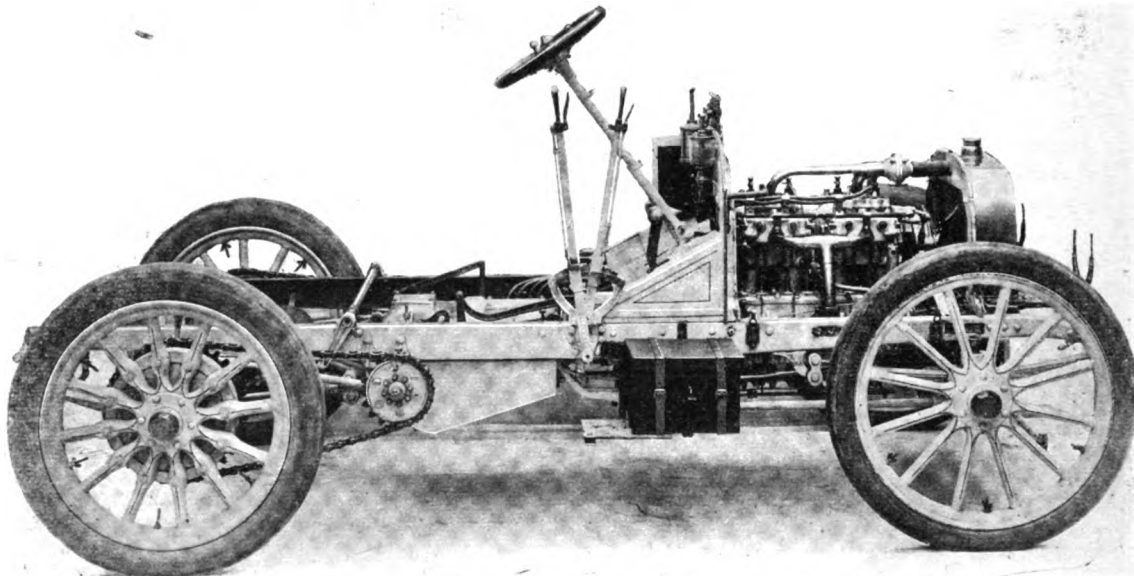


Fig. 30.—The Chassis of the Leon-Bollée 24—28-h.p. Ca

Mr. Dew, of the Speedwell Motor and Engineering Company, who have secured the British agency for these cars, the feature of which is their marvellous silence, either when in operation or when standing still with the engine running. The new vehicles are being made in two sizes, 24-28-h.p. and 40-45-h.p., both having four-cylinder engines. The following details, although taken from an inspection of the smaller car, may be regarded as applying to both. The frame, of stamped steel, is made in two sizes—one to suit the ordinary tonneau and one for bodies with side entrance. The cylinders, which are cast in pairs, are, in the 24-28-h.p. type, 106 mm. diameter by 130 mm. stroke, and at a speed of 1,100 revolutions per minute the engine is said to develop 32-h.p. The inlet valves are mechanically actuated, and are located on the opposite side to the exhaust valve. The motor is suspended from three points, the front or single point being carried in a bearing which avoids any strain on the engine shaft likely to ensue from frame torsion. The result is that it is practically impossible for the motor and gears to get out of alignment, and should even this take place, the clutch is designed to compensate for any deflection between the motor and the gear box. A large slow-running pump of the vane type is employed for the circulation of the cooling water; it is driven by gearing from

of the engine can be varied by a small hand-lever, also mounted above the steering-wheel, which regulates the strength of the spring acting against the governor. The magneto igniters are so arranged that they can be taken out in a few seconds and adjusted or cleaned like an ordinary sparking plug. Coming now to the carburettor, this is an entirely novel departure, consisting practically of two distinct spraying chambers. Up to a speed of about 30 miles per hour the mixture is supplied from the smaller jet. As the speed, and consequently the suction, of the engine increases the larger jet is brought automatically into action and the smaller one closed. The speed of the engine can be varied over a very wide range, and will run at as low a rate as 100 revolutions per minute. Passing to the clutch, this is also on special lines. The main portion is of the ordinary cone type, but the internal portion is mounted upon its shaft on a kind of spherical joint, so that it is capable of fitting accurately into the outer member, even if the shafts carrying the two members are not perfectly in line with one another. A flexible coupling is fitted between the clutch and the first-motion shaft of the gear box. The latter, like the engine, is supported at three points. Four speeds forward and reverse are provided, these being arranged in such a way that it is possible to readily change

from the first to the fourth. By an ingenious arrangement of three pedals, the clutch can be withdrawn alone, or the clutch withdrawn and the brake applied, or the brake applied without withdrawal of the clutch. To effect this the usual brake pedal, which ordinarily takes out the clutch and applies the brake, is made in halves, one half applying the brake only. The brakes on the hubs of the rear wheels are compensating, and are so mounted that when the chains are adjusted they automatically take up a corresponding position. The lubrication is effected throughout by air pressure, a few strokes of a small hand-pump sufficing to give sufficient pressure for sixteen hours' running. All the lubricators are named, and arrangements are made so that more oil can be fed to any desired bearing. The steering gear, differential shaft, and road wheels run on ball bearings. Although the Leon Bollée car has only been on the market a short time, I learn from the Speedwell Company that a number have found purchasers in this country.

At the De Dietrich stand, Mr. Jarrott, who was in attendance, pointed out to me the main changes in these well-known vehicles for the 1904 season. Four sizes are being made, viz., 12, 16, 24, and 35-h.p. The inlet valves are now mechanically-actuated off the same cam shaft as the exhaust valves. The carburettor is supplied by gravity from a special petrol reservoir which is kept supplied under pressure from the main petrol tank. The carburettor is provided with an ingenious but simple automatic device, by means of which the quality of the mixture is kept in consonance with the requirements of the engine. The ignition is by magneto, with provision to test the sparking in

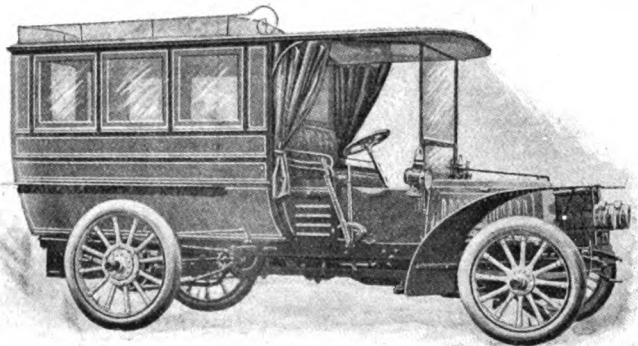


Fig. 31.—The De Dietrich 16-h.p. Omnibus.

each cylinder separately by a simple cutting-out device. The clutch spring has been placed in a horizontal instead of a vertical position as hitherto, the alteration greatly facilitating the adjustment. To prevent any strain on the engine or gear-box, two universal joints are introduced between the latter and the clutch, a refinement I did not notice on any other car. The carburettor, which is controlled both by the governor and from the steering wheel, is also connected up to the clutch pedal, so that as the clutch is disengaged, the supply of mixture to the engine is throttled. A further connection is provided between the carburettor and the ignition, which provides that the latter cannot be advanced except the throttle valve be open. The brakes attached to the rear wheels are now of the internal expanding type. In consequence of the good results obtained, the De Dietrich Company are retaining the old type of ribbed pipe radiating coil, with a water tank in a sufficiently high position that the circulation will be maintained by thermo-siphon, even if the pump should fail. The frames are being made of a length to accommodate side entrance bodies, a 16-h.p. landaulet, with carriage work by Kellner, being a noteworthy example of this type. On a separate stand, what may be termed the industrial vehicles are shown, these comprising a 16-h.p. 10-seated omnibus (Fig. 31), a 16-h.p. lorry capable of carrying a load of 2½ tons and a 12-h.p. waggon to carry 1½ tons. The engine and gear of these vehicles are similar to the pleasure cars, but lower speeds are provided to adapt them for their special purpose.

Holland is represented at the Show by the Spyker Company,

of Amsterdam, and at this stand I met Mr. Elsworth, of the Elsworth Automobile Company, who holds the agency for the Spyker cars in England. The novelty of the display is the chassis of a six-cylinder 60-h.p. car, originally intended for the Paris-Madrid race, but which, unfortunately, was not completed in time for this memorable event. The frame is of pressed steel, while the engine has six separate cylinders, the inlet valves

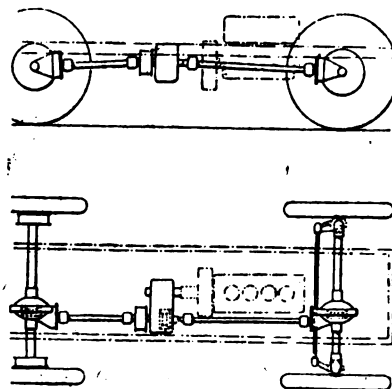


Fig. 32.—Diagrams showing Spyker Front and Rear Wheel Driving Gear.

being on one side and the exhaust on the other, all being mechanically actuated. It is in the transmission, however, that the principal novelty lies. The power is transmitted through a leather faced clutch to a gear-box, from which extend two cardan shafts, one driving on to the rear axle and the other on to the front one, so that all four wheels are driven. No less than three differential gears are employed, one on each of the axles and one in the gear-box. It is claimed that the car is proof against side-slip. As regards the standard Spyker cars, these are being made in three sizes—12-16-h.p., 20-24-h.p., and 30-36-h.p.—all having four-cylinder engines. The car follows the usual lines of cardan-shaft transmission vehicles, among the features being the ready means of access to the pinions in the gear-box, and the pivots of the front wheels, which are entirely enclosed and work in an oil bath. The engine in the Spyker cars is a distinct departure. At first sight it resembles more than anything else a dynamo. Two cylinders and their valve chambers are cast in one with a large circular water jacket which surrounds the whole. The two castings to form the four cylinder engine have faces which fit closely together, and are kept in position by bolts. A large body of water—about 1½ gallons—is always maintained around the cylinders, this being circulated in the usual way by pump and radiator. We hope to illustrate the new motor in a subsequent issue.

Fig. 33 gives a general view of the novel six-wheel car displayed by M. V. Janvier, of Paris. The front part of the car, instead of being supported on a single pair of wheels, is carried on a set of four; the steering spindle of each wheel is connected

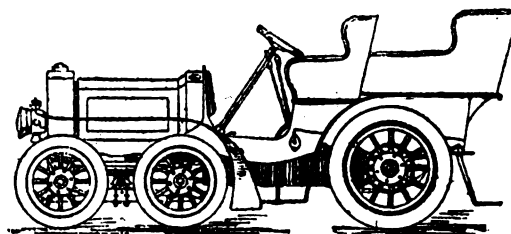


Fig. 33.—The Janvier Six-Wheel Car

in such a way to an articulated steering gear, that when deflected they each take the necessary angle for the curve which it is intended to make in turning the car. The connections are also such that each wheel is free to mount an obstacle without affecting the others, or lifting the car. It is claimed that the arrangement not only prevents skidding and allows of corners being taken at a

fair speed, but that the engine, being carried on a four-wheel carriage, the vibration transmitted to the car and its occupants is greatly reduced. M. Janvier's arrangement is attracting much attention, but it remains to be seen to what extent his idea will meet with adoption.

For the 1904 season La Société des Automobiles Motobloc, of Bordeaux, represented in England by Messrs. Montague

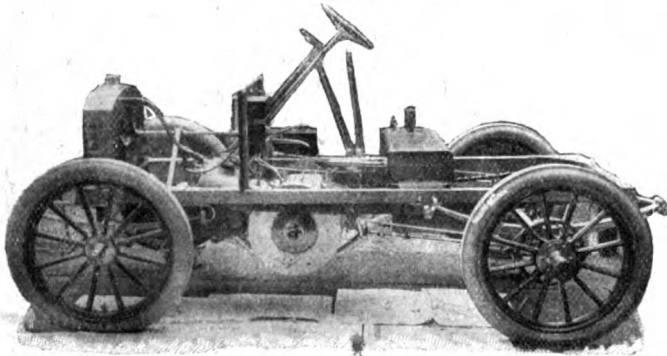
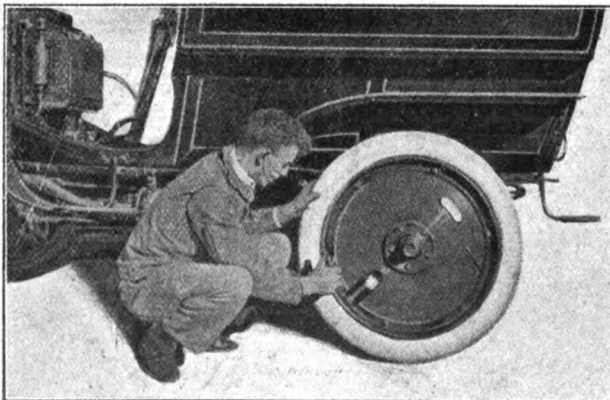


Fig. 34.—Chassis of 10-h.p. "Motobloc" Car.

Hawnt and Co., are practically confining their output to a two-cylinder car of 10-h.p. As will be seen from Fig. 34, this is on distinctly novel lines, the two cylinder engine, the cranks of which are placed at an angle of 180 deg. to each other, being set at an angle to the ground, the explosion chamber being foremost. The water circulation is maintained by a pump and fan-cooled honeycomb radiator; the arrangement, however, is such that, should the pump fail, the circulation will continue on the thermo-siphon system. The change-speed gear, which gives three speeds and reverse, is enclosed in what is practically an extension of the crank case. The sliding pinions are mounted on an extension of the half-speed shaft of the engine, and the counter-shaft, on which the friction clutch is mounted, and which is in line with the crank-shaft, is connected with the rear live axle by a single side chain. The car, although differing from the usual lines, has an excellent reputation in France, and should prove equally successful in this country.

Two firms exhibit disc wheels—Messrs. Pozzy and Potron and M. L. Stier, of Villiers-sur-Marne (Seine et Oise). An illustration of the latter is given in Fig. 35. It consists of one flat disc of steel, to the periphery of which are fixed two rings, forming half-rims. One of the rings is permanently fixed to the disc,



35.—The Stier Disc Wheel.

while the other is made so that it can be readily detached to enable the tyre to be put on or taken off. The steel disc wheel is claimed to be no heavier than the ordinary artillery wood wheel, and to be much stronger. Chain sprockets and band brake drums can readily be attached; while among other advantages are that it protects the chain from mud and offers less

resistance to the air than the usual wheel. The Arbel disc wheel, shown by Messrs. Pozzy and Potron, comprises two steel discs extending from the rim to each end of the hub. A remarkable display of pressed steel frames is made by this firm, types as made for the Darracq, Mors, Clement, Rochet-Schneider, Georges Richard, and other companies, being on view.

Messrs. De Dion Bouton have two stands, one devoted to pleasure cars and one to industrial vehicles. On the former are shown specimens of the 6-h.p., 8-h.p., 10-h.p., and 12-h.p. cars. The first two have single-cylinder engines, and the latter double-cylinder. The type which is probably attracting most attention is the 10-h.p., on one of which M. Cormier recently returned from a 7,000-kilometre tour. A feature of the car is the forced lubrication, maintained by an oil pump, by means of which distances up to over 150 miles can be run without the lubrication requiring attention. Among the side-entrance cars, a 12-h.p. landaulet attracted my attention, this being most luxuriously upholstered and having accommodation for four persons inside. On the industrial stand I first noticed a sixteen-seated omnibus for public service work. This is fitted with a 15-h.p. double cylinder engine under the driver's seat, and the usual De Dion cardan axle. Three speeds forward and a reverse are provided, the maximum being twelve miles per hour. A feature is also being made of petrol lorries of 15-h.p. and 20-h.p. Fig. 36 shows the 15-h.p. two-cylinder lorry intended for loads from 2 to 2½ tons.

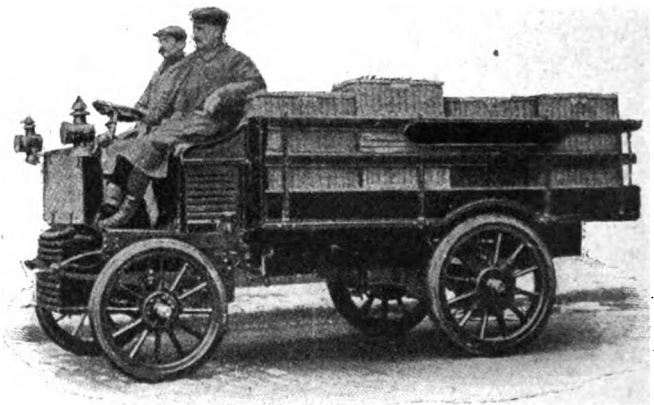


Fig. 36.—The De Dion Motor Lorry.

The chassis of this is similar to the omnibus. A great point claimed for this type of vehicle is the economical fuel consumption.

The exhibit of M. E. Louet, of Paris, is always an interesting one, and this year is no exception to the rule. Claiming to be a pioneer in three cylinder engines, he has now introduced a six-cylinder motor said to develop 70-h.p., while weighing only 680 lb. The crank-shaft has a bearing between each crank. The inlet and exhaust valves are all actuated off the same cam-shaft. The mixture is furnished by two Longuemare carburettors, novel in so far as they have only one float chamber between them. A 18-h.p. car is also shown, on which is an ingenious system of ignition, only one coil being used for the three cylinders. A new departure for 1904 is a single-cylinder car of 6-h.p. Perhaps the most noteworthy feature of the Louet cars is the change speed gear, in which, instead of the pinions sliding sideways into mesh with those on the parallel shaft, they are brought into engagement directly upon the face of the teeth. Without a drawing it is difficult to explain the gear, but I may mention that the clutch-shaft terminates in a bevel gear, which drives a short shaft on which is mounted a spur wheel immediately below the countershaft. Between the two is an oblong chest, within which is a carriage carrying a series of pairs of pinions side by side. According as this carriage is moved so one of the pairs of wheels is brought into mesh with the pinion on the short shaft below, while the other engages with a spur wheel on the countershaft. The way the gear can be changed from one speed to the other has to be seen to be appreciated.

Among the combination petrol-electric cars on view are the Electrogenia of the Société de Constructions Electro-Mecaniques, whose system has already been described in the *Journal*. The motive power is supplied either by a four cylinder 16-h.p. Aster or two cylinder 12-h.p. De Dion motor, this being directly connected to a dynamo, which in turn drives the electric motor. No accumulators or rheostat are used.

It has been known for some time past that the Krieger Company were at work on the production of a combination petrol-electric car (Fig. 37), and much interest is being displayed in the vehicle of this type on exhibition. Outwardly, it closely resembles a petrol car; a 24-h.p. Georges Richard four cylinder motor, with magneto ignition, supplying the motive power, is connected up through a spring joint to a six-pole dynamo, the armature of which forms the flywheel of the engine. The current thus generated is transmitted to two small electric motors, each driving one of the rear road wheels through a pinion and internally-toothed ring. A small battery weighing only 45 lbs. is carried to supply the current for exciting the dynamo and setting the engine in motion. It is not necessary to re-charge this battery, as any current used is replaced during the few moments it is connected up to the engine and dynamo. No differential is employed, while the absence of the usual clutch and change-speed gear is claimed to result in an exceedingly easy and quiet-running vehicle, at any speed from six to forty-five miles per hour. Complete with body ready for a run, the car weighs about $1\frac{1}{4}$ ton.

Still another concern exhibiting a combination petrol-

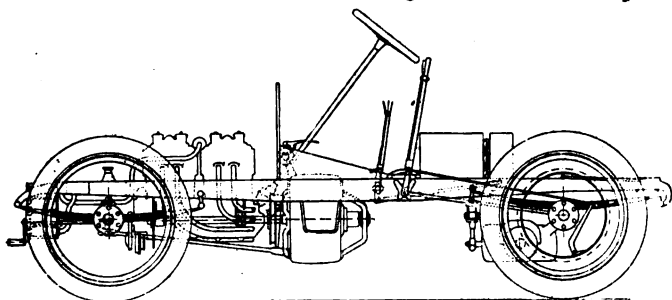


Fig. 37.—The Chassis of the Krieger Combination Petrol-Electric Car.

electric car is the Compagnie de l'Industrie Electrique et Mecanique (Thury) of Geneva, and at the time of my visit to the stand M. Jenatzy, the winner of the 1903 Gordon Bennett race, was busily engaged in inspecting the details of the vehicle, the chassis of which is illustrated in Fig. 38. The motive power is supplied by an engine with four cylinders set in the form of a V, and located under the bonnet; this is connected up to a dynamo, which, in turn, is connected by a clutch, cardan shaft and bevel gear to the rear axle. A clutch is also interposed between the engine and dynamo. The system is completed by a battery of accumulators, of 30 ampere-hour capacity, connected with the dynamo by means of a pedal-actuated interrupter. The dynamo is designed to give a voltage equal to that of the battery, at an engine speed a little below the normal, on level roads. In this way, should the speed of the engine exceed 1,000 revolutions per minute, the voltage of the dynamo becomes above that of the accumulators, the latter then receiving the surplus charge. Reversely as the speed of the engine, and consequently the voltage of the dynamo falls, the battery furnishes automatically the additional power required, the dynamo being so arranged that, when required, it can be made to act as a motor. In this way, not only can the petrol engine be automatically started, but the car can be entirely driven off the battery through crowded traffic.

Hitherto M. Chaboche has fitted horizontal engines to his steam cars, but this year he has brought out a 20-h.p. car with a double-cylinder vertical engine under the bonnet. The vehicle, which outwardly resembles a petrol car, is driven by means of a cardan shaft and bevel gear on to the rear live axle. The boiler, which is located at the rear, has been improved, in so far that should

anything go wrong with either of the last two elements it may be readily disconnected without preventing the boiler from working.

M. Ch. Mildé has a unique stand, as it is probably the only one on which the three types of cars, electric, petrol-electric, and petrol, are shown. The Mildé electric vehicles have already been described in the *Journal*. The motor is of the compound-wound differential type, carried at the centre of the hind axle

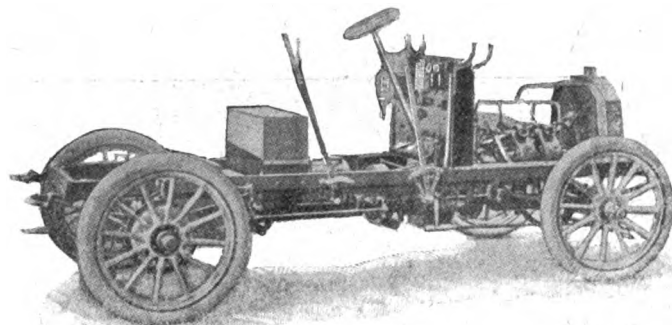


Fig. 38.—The C.I.E.M. 16-h.p. Combination Petrol-Electric Car.

and driving both rear wheels through internal spur gearing. Although larger batteries can be fitted, the standard one consists of forty-two Heinz cells of 120 ampere-hour capacity, sufficient for a run of about thirty miles on one charge. Since the Mildé petrol-electric car was described in connection with the exhibition at the Agricultural Hall, Islington, in March last, it has been considerably improved. It is being made in two sizes, 5-h.p. and 10-h.p., the first having a single cylinder and the second a double cylinder petrol-motor of M. Mildé's own construction. In this system the current generated by the dynamo is sent to a light battery of accumulators located under the rear seats, and thence to the electric motor. The car having its own power-generating mechanism, is therefore not confined to town work, but can be used as a touring vehicle, while the engine and dynamo can even be used as a portable electric lighting plant. Of these "mixte" cars, a 5-h.p. coupé is shown, as well as a 10-h.p. landaulet with side entrance, and with the engine under a bonnet, and a 10-h.p. van intended to carry a load of one ton. The construction of petrol cars pure and simple is quite a new departure for M. Mildé, who is making 10-h.p. double cylinder and 15-h.p. three cylinder cars. These are on modern lines, with mechanically-actuated inlet valves,

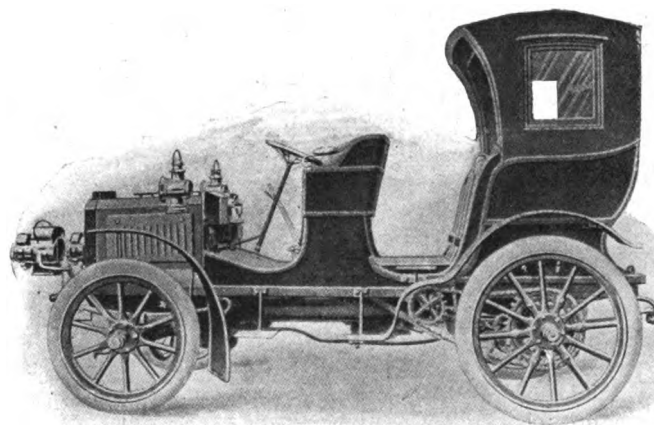


Fig. 39.—The Mildé 10-h.p. Petrol Motor Cab.

chain transmission, and long frames to admit of bodies with side entrance, while a novel feature is the provision to the shaft projecting from the front end of the motor, to which the starting handle is attached, of a joint by means of which it can be connected up to a permanently fixed dynamo in the garage for electric lighting purposes. I understand that a number of the Mildé combination petrol-electric cars will shortly be running in London.

The principal novelty on the stand of the Société Germain, represented in England by Mr. Theo Masui, is a *chassis* fitted with a 15-b.h.p. double cylinder two-cycle motor. This is made according to the Hardt patents, the feature being an arrangement to introduce a supply of fresh air between the exhaust gases and the new charge of mixture, and so preventing the latter from mingling together. The engine is equipped with a carburettor, which will, it is stated, work equally well with petrol, alcohol, or petroleum. As for the cars fitted with

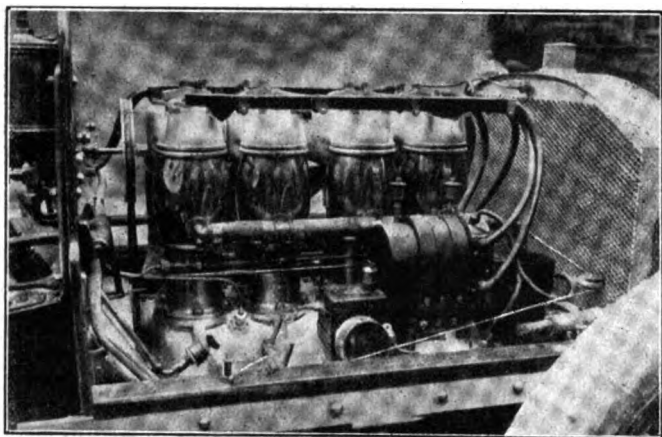


Fig. 40.—The Germain Steel Cylinder Motor.

four-cycle engines, two sizes are being made—15-h.p. and 30-h.p. The four cylinders are each separate and are made from a solid bar of steel. The water jackets are of copper. The inlet and exhaust valves are interchangeable, and actuated mechanically off the same cam shaft. The inlet valves are provided with a device, controlled from the steering wheel, by means of which the lift of the same can be varied, and consequently the speed of the motor regulated. Both battery and Eisemann high-tension magneto are fitted, one advance and retard lever controlling both systems. The radiator is of the honeycomb type, the arms of the fly-wheel being formed to act as a fan to draw a current of air through the radiating tubes.

An extensive range of cars is being made by the Delahaye Company for next season, extending from 8 to 24-h.p. They comprise a number of special features, particularly as regards the clutch and ignition, which will require more space for clear explanation than can be devoted on the present occasion. The 12-h.p. car is provided with a twin-cylinder vertical engine (100 mm. by 140 mm.), while those of the 16-h.p. and 24-h.p. vehicles have four cylinders. The Delahaye Company, after studying the question, have decided to retain the automatic inlet valve. The lever controlling the ignition is so arranged that as the latter is retarded an exhaust valve lifter is brought into play, thus facilitating the work of starting the motor. The cars are driven by side chains, and in the 12-h.p. and 24-h.p. types the gear box does not enclose the differential; in this way, by increasing the length of the shaft between the gear box and the differential, any desired length of frame for side-entrance cars can be obtained.

The Electromobile Company, Limited, are another of the English exhibitors. The display comprises examples of their electric victorias, landaulets, and coupés. As is well known, the feature of these vehicles is the employment of a straight frame, the same as in a petrol car, enabling a low-built carriage to be produced. The Contal-Gasnier 8-h.p. electric motor drives the rear axle through spur gearing. The battery comprises forty-four cells, the capacity of which is sufficient for runs up to 40 miles on one charge. The controller, the handle of which is mounted on the inclined steering column, is adapted to give five forward speeds, reverse, two electric brakes and stop. The cars have a neat appearance and compare most favourably with some of the electrical carriages so numerous in Paris.

The relatively low price, combined with excellent workmanship, has caused a good deal of attention to be devoted to the cars of the La Société Minerve, of Billancourt, which, although handled in this country by the agents for the Minerva motor-cycle engine, has no connection with the latter. The Minerve cars are being made with one, two, three, and four cylinders, ranging from 7 to 24-h.p. The cylinders are cast separately, with the valves, all mechanically actuated, arranged one on each side of the engine. Three speeds forward and a reverse are provided, the transmission being by side chains.

The Passy-Thellier Company, of Levallois, are making cars of from 9 to 30-h.p., and are using the De Dion, Aster and Abeille engines. The frames are of stamped steel, while the transmission is by means of a cardan shaft and bevel gear on to a live axle. Among the new features of interest is an improved worm-gear steering device. The worm is what is termed a "globic screw" variety, the advantage being that in any position the worm meshes over the whole range of teeth of the sector. The engine, change gear and differential are provided with forced lubrication, the oil being kept in continuous circulation by a pump. Not only are the three brakes interchangeable, but the two rear road wheels with their brake drums may be placed on either end of the live axle.

Three splendidly made *chassis* of respectively 15, 25, and 40-h.p. are to be seen at the stand of Messrs. Charron, Girardot and Voigt, who are represented in England by Messrs. Ewart-Hall. The 15-h.p. car is on similar lines to last year's models, with the exception of a number of detail improvements, these including the new ball-bearing axle and an improved radiator with fan. The 25-h.p. car is a new model. The frame consists of a square steel tube filled with wood. The motor (Fig. 41) comprises four cylinders with mechanically-operated inlet valves. In place of the steel cylinders of last year, separate cast cylinders are now employed. They are, however, of special design, having openings in the side closed by removable bronze plates, which not only allow the engine to be built on a smaller crank chamber, but also permit of access to the water jackets. The inlet valves are driven off the same cam shaft as the exhaust valves, with which they are interchangeable; the crank shaft of this engine

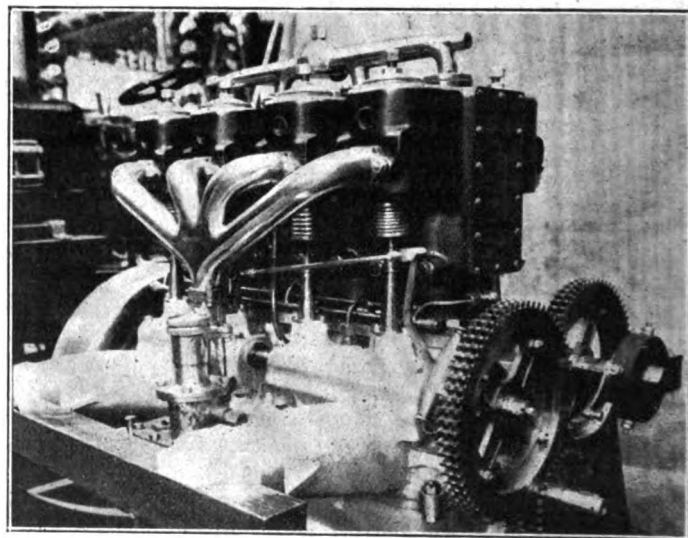


Fig. 41.—The C. G. V. 25-h.p. engine.

runs on ball bearings. The gear box, which gives four speeds and reverse, with direct drive on the fourth, has been newly designed; in it ball bearings are utilised. A new design of exhaust box adds to the silent running of the car. Altogether the C.G.V. cars are of the highest class, as an inspection of the various parts cut into sections displayed on the stand fully testifies. As regards the carriage bodies, these also are excellent specimens, and include a landaulet and a side-entrance limousine.

In addition to specimens of their 16 and 24-h.p. cars, the F.I.A.T. Company have on view a four-cylinder engine developing no less than 150-h.p. at a speed of 600 revolutions per minute. The cylinders are 240 mm. diameter by 270 stroke. Petroleum is used as fuel, the exhaust being carried round the fuel vaporiser. The monster engine, which is, I understand, intended for a submarine vessel for the Italian Navy, is started by means of a cartridge fired in the top of one of the cylinders.

Considerable interest is being shown in the railless train exhibited by Colonel Renard. It consists of a train of five or six vehicles, each being connected up to and propelled by the motor on the leading car. The steering gear of the cars has been devised on the same principle. That is to say, the train is not drawn in the wake of the engine, but the latter commands the steering gear provided on each car. Thus the train forms a completely linked system, the first car distributing the motive power generated on it through a universal shaft and gearing to each vehicle in the train. Thus each car, as it were, propels itself, and friction of all the wheels upon the roadway is claimed to be utilised instead of being a useless resistance which the engine must overcome. Consequently, it is argued, a less powerful motor will, other things being equal, draw a far heavier load than is the case with a tractor. The steering gear

arrangement is too cumbersome for it to become generally adopted.

Among the minor novelties of the Show is the exhaust box or silencer exhibited by L'Usine Electro-Mecanique, of Voiron (Isere). As the exhaust gases reach the silencer, they impinge on a small fan or turbine, which is connected up to a small dynamo. The makers claim that the electric current thus generated is sufficient to light the lamps of the car or to keep the ignition accumulators fully charged. I was also informed that in the trials made with a 6-h.p. engine, the small turbine driven by the exhaust attained a speed of 5,000 revolutions per minute running light, and 3,000 revolutions when connected up to a small dynamo.

Two motor fire-engines are to be seen—one built by Messrs. Weyer and Richmond for the Paris Fire Brigade, and one by Messrs. A. Thirion and Fils, the latter being similar to the one displayed last year. It can attain a speed of 25 kilometres and throw a jet of water 110 ft. high; it is also adapted to carry ten firemen.

Les Anciens Ateliers Sage display a 30-h.p. chassis, of which the frame is of the armoured wood type. The motive power is supplied by a Filtz four-cylinder engine, having the inlet valves mechanically actuated off the same cam shaft as the exhaust

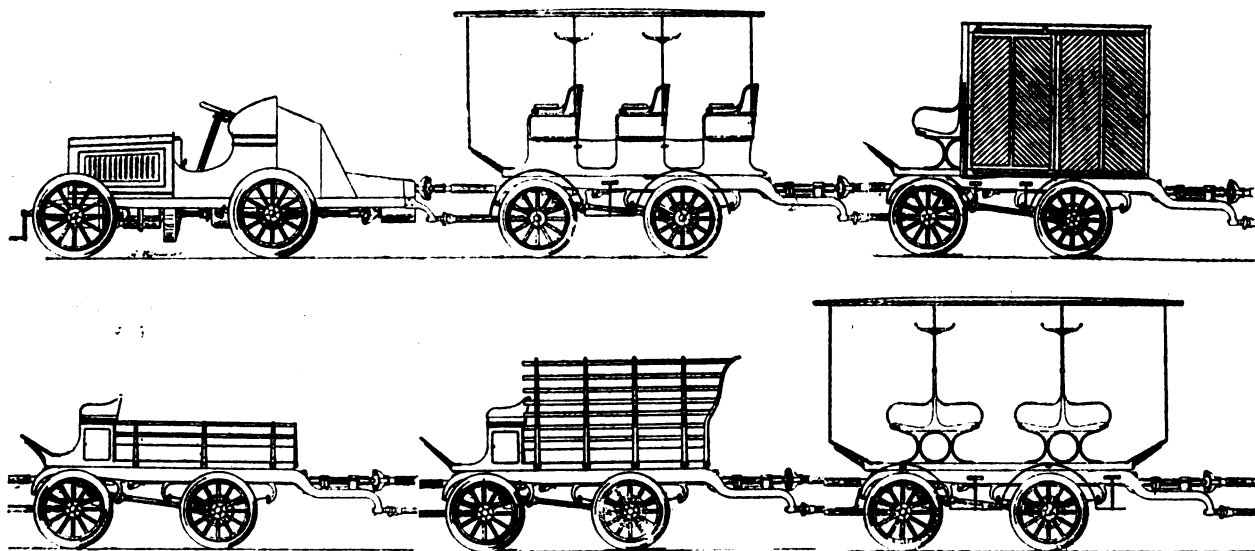


Fig. 42.—The Renard-Surcouf Automobile Train.

of each car being controlled from the leading vehicle, enables the train to negotiate practically any curve. The train has been subjected to test, a Paris-Madrid racing car being used as the source of the motive power. The train, which weighed altogether 30 tons, attained a speed of 11 miles per hour. In another trial the train, having the same motor, successfully mounted the steep hill up to the heights of Bellevue from the banks of the Seine. The development of the system will be watched with considerable interest.

Located in a somewhat quiet corner of the Grand Palais, one of the novelties of the Show has not been so largely inspected as it would had it been displayed in the main hall. It is a new kind of "mixte" vehicle—to wit, a combined petrol and compressed air motor vehicle. It is shown by La Société Française des Automobiles Thermopneumatiques, of Paris. The arrangement is that of a motor-forecarriage fitted to an ordinary victoria. On the forecarriage is fixed a petrol motor, which drives an air compressor; the air thus compressed is in turn utilised in a compressed air engine which drives the vehicle. The petrol motor is controlled by the compressor. It is claimed for the system that the control of the compressed air motor is similar to that of a steam engine. No change-speed gear of the usual type is employed, the variations in pace of the vehicle being obtained by admitting more or less air to the compressed air engine. Although the vehicle is interesting, I fear that the

valves. A useful filter is introduced in the pipe leading from the petrol tank to the carburettor, in order to prevent any impurities from reaching the latter. The Sage Company are also making a feature of petrol motor vehicles for commercial purposes, a lorry being shown fitted with a 10-h.p. Abeille motor and capable of carrying a load of about a ton.

In the heavy steam-wagon class Messrs. Boulte, Larbodiére and Co., Paris, show one intended to carry a load of ten tons. The boiler is located in front, coal or coke being used as fuel. The two cylinder vertical engine of 50-h.p. is also located in the fore part of the frame, and drives the rear axle through bevel gear. The wagon is no less than 23 feet long. Messrs. Turgan, Foy and Co. have on view a 10-ton steam wagon, chain driven by means of a 60-h.p. engine, as well as a 14-seated tramcar driven by a Brouhot 16-h.p. four cylinder heavy-oil motor. It is intended for service in the Department of Drome, where a similar vehicle has been in use for some time past. Messrs. Turgan and Foy have apparently dropped their petrol cars with horizontal engines and flywheels, and are now turning out two types of 15-h.p. and 25-h.p., on standard lines, a vertical engine and stamped steel frame being employed. In addition to a large number of their well-known cars, the Oldsmobile Company have on view a vehicle on similar lines as regards the mechanism, but fitted with a van body to carry a load of about 4½ cwt.

(To be concluded.)

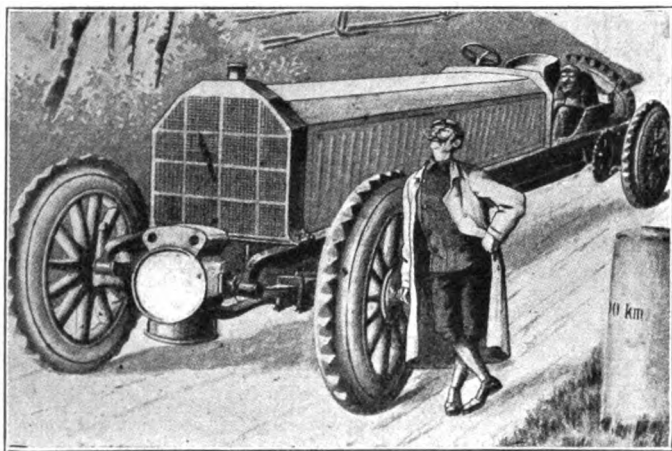
PHANOMEN.

THE MOTOR CAR ACT.

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FROM Dorsetshire we have received a copy of the licence which will be issued to drivers. It has been prepared in a form which might usefully be adopted by other licensing authorities throughout the kingdom. The licence is printed on a piece of parchment 4 in. long and 2 in. deep, which is folded into a neat cloth case about the size of an ordinary railway season ticket. On one of the inner covers of this is a form of renewal—and we would congratulate the Dorsetshire authorities on the intelligent way they have carried out that portion of the Act.

A meeting of the Special Committee of the County Councils Association to consider questions arising under the Motor Car Act has been held, with Lord Belper in the chair. Those present considered the question of notice boards under Sections 8, 9, and 10 of the Act. It was decided that where such notices are erected, it is most desirable that they should be uniform. It was reported, however, that several counties, Surrey and Hampshire among others, had decided to rely upon the provisions of Section 1 of the Act, and not to fix any limits for a speed not exceeding ten miles an hour. The meeting considered certain designs for notice boards which are recommended by the County Surveyors' Society, and passed resolutions thereon which will be discussed



The Up-to-Date Racing Car—Not yet Materialised.
Das Schnauferl, Munich.

at a conference to be held shortly with representatives of the Municipal Corporations Association.

The Middlesex County Council has agreed to a report of the Highways Committee recommending that the fee for registering a motor-car should be £1; for a motor-cycle, 5s.; for alteration of register for motor, 5s.; and for a motor-cycle, 1s. The driver's licence is to cost 5s.

Portsmouth was the first County Borough to decide against a speed limit or the closing of roads, a liberal view of the Act partly brought about by the fact that the town has a splendid system of electric trams—running at quite sixteen miles an hour in open roads. Several members of the council own cars, and when the question came on only one dissident was in the division. Hants and the two other County Boroughs followed, and then the Isle of Wight.

The Midlothian County Council have decided not to supply the plates forming the identification mark; that the annual fee payable by manufacturers of or dealers in motor-cars for a general identification mark be £2; and that the colouring of the plates for the latter be white lettering on a red ground. The Council have accepted the view of the special committee which reported on the subject, that the public are protected under the first section of the Act from reckless and negligent driving through villages, and they consider that no good purpose would be served by attempting to restrict the speed of motor-cars on any of the roads in the county in any other manner than by the

erection of sign-posts denoting dangerous corners, cross roads, and precipitous places. They are further of opinion that undue multiplication of the number of sign posts would tend to defeat the object which Parliament had in view in passing the Act.

Below we give our third list of the first owners of motor-cars to register their automobiles in their respective boroughs and counties:—

ENGLAND AND WALES.

HASTINGS.—Mr. Jules F. Mastin, D.Y.1.

HERTFORDSHIRE.—The Earl Brownlow, Berkhamstead, A.R.1.

DORSETSHIRE.—Colonel J. R. P. Goodden, Chairman of the Works Committee of the Dorsetshire County Council, Compton House, Sherborne, B.F.1.

BLACKBURN.—Mr. G. H. Woods, Vine House, Revidge Road, Blackburn, C.B.1.

BARROW-IN-FURNESS.—Mr. James Fisher, J.P., Barrow, E.O.1.

YARMOUTH.—Mr. Harold Chamberlin, solicitor, Yarmouth, E.X.1.

READING.—Mr. W. H. Greenhough, St. Leonards, Alexandra Road, Reading, D.P.1.

DUDLEY.—Captain W. J. Roberts, Oak House, Dudley, F.D.1.

EAST SUFFOLK.—Major R. J. Carthew, J.P., C.C., B.J.1.

NORTHAMPTONSHIRE.—The first license to drive a motor-car in this county has been granted to Mr. G. A. Alderson, of Park Road, Northampton, whose car has been registered B.D.9.

ROTHERHAM.—Mr. J. H. Pickford, solicitor and clerk to the Rotherham Rural District Council, E.T.1.

CHESHIRE.—Mr. Maurice Egerton, Rosthern Manor, Knutsford, M.1.

PORTSMOUTH.—Aldeiman T. Scott Foster, J.P., St. Helen's Parade, Southsea, B.K.1 and B.K.2.

SCOTLAND.

BUTESHIRE.—Rt. Hon. A. Graham-Murray, M.P., Secretary for Scotland, S.J.1.

PEEBLES.—Sir Duncan E. Hay, Bart., King's Meadows, Peebles, D.S.1.

KINCARDINE.—Mr. A. G. Ogston, Ardoe, near Aberdeen, S.U.1.

WIGTOWNSHIRE.—Mr. Marmaduke Fox, Polbae, O.S.1.

ARGYLLSHIRE.—Mr. J. S. Matthew, Ardfillayne, Dunoon, managing director of the Scottish Tyre, Limited, S.B.1.

MIDLOTHIAN.—Mr. J. A. Maconochie, Welwood, Kirknewton, Midlothian, S.Y.1.

IRELAND.

Co. KERRY.—Mr. W. J. Girvan, Laune View, Killorglin, co. Kerry, I.N.1.

DUBLIN COUNTY.—Mr. T. L. Plunkett, D.L., Portmarnock House, Baldoyle, I.K.1.

LIMERICK COUNTY.—Captain James D. Lyons, 13th Hussars, Croon House, co. Limerick, I.U.1.

TYRONE COUNTY.—Colonel H. Irvine, Campsie Road, Omagh, J.I.1.

WEXFORD COUNTY.—Colonel J. R. Magrath, Bann-aboo, Wexford, M.I.1.

SLIGO.—Mr. Robert Simpson, Pettigrew, Ardmore, Sligo, E.T.1.

MR. W. K. VANDERBILT, JUN., has entered for the automobile races to be held at Ormond-Daytona Beach, Florida, under the auspices of the Florida East Coast Association next month.

MESSRS. MANN AND OVERTON'S, LIMITED, are removing their business from Mortimer Street to larger and more convenient premises at 7, Lower Belgrave Street, Belgravia, S.W., where they are also opening a garage.

THE Bolton Motor Company, Limited, has been registered with a capital of £6,000 to carry on the business of manufacturers and repairers of, dealers in, and agents for motor vehicles. The first directors are Messrs. F. Eckersley, R. Slater and J. V. Madgwick.

CONTINENTAL NOTES.

THE clubhouse of the A.C. F. in the Place de la Concorde has, since its establishment, been the scene of many brilliant functions, but never has such a memorable gathering taken place as on the occasion on Wednesday of last week of the banquet given by the A.C.F. to the representatives of the foreign and French provincial automobile clubs present in Paris on account of the *Salon*. Baron de Zuylen presided, having at his right M. Quinonès de Léon, of the Automobile Club of Spain, and at his left Count von Sierstorff, of the German Automobile Club. At the table of honour were the Marquis de Dion and Comte Recope; Mr. Roger W. Wallace, of the A.C.G.B.I.; Comte Kolowrat Kratowski, representing Austria; Mr. Gray Dinsmore, for the United States; Baron de Crawhez, Belgium; Baron de Sulzer-Wart, Switzerland; Signor Enrico Marchesi, Italy, etc. Baron von Zuylen in his address traced the history of the automobile movement, and, treating the subject from an international rather than a French point of view, mentioned that between 1825 and 1835 motor vehicles were in use in England, but that, owing to the imposition of restrictive regulations and tolls, the movement was killed, to be revived in France in 1894. The international character of the banquet may be gathered from the fact that the toast of "The Foreign Automobile Clubs" was responded to by representatives of the German, Spanish, Austrian, Italian, Dutch, Belgian, Portuguese, American, and British clubs, Mr. Wallace replying for the A.C.G.B.I.

THE banquet on Wednesday was followed on the evening of Thursday of last week by a gala performance at the Opera. The scene was of the most brilliant description, the beautifully-decorated building being packed by an assembly of the leading motorists of every country in Europe and even the United States. The performance opened with a march called the "Cambridge March," M. Henry Deutsch de la Meurthe, well known in the motoring and aerial navigation world, disclosing his talents as a composer. A portion of the second act of Mozart's "Die Entführung aus dem Serail" came next, and was followed by the "clou" of the evening. This was an "automobile ballet of the nations," in which stars of the corps-de-ballet represented the different countries in national costumes. All the nations passed in a brilliant procession across the stage in electric cars, supplied by the De Dion Co., each decorated with national flags. The second act of "Othello" and the ballet of "Don Juan" were included in the programme. Fortunate were those who were able to secure an invitation to the gala, for it was a sight which will not fade from the memory for many a long year.

UNDER the presidency of Prince d'Arenberg, a meeting was last week held at the A.C.F. club-house, at which delegates were present from twelve of the French provincial clubs. After some discussion it was decided to form a Federation des Automobile Clubs de France, which will work in conjunction with the A.C.F. for the general welfare of the automobile movement in the country. Prince d'Arenberg, of the Automobile Club du Centre, was elected president of the Federation, M. H.

Franchomme, of the A.C. du Nord, being vice-president, and M. A. Damez, of the A.C. du Nord, secretary.

A MEETING of the International Committee of the Gordon Bennett race was held at the A.C.F. on Wednesday last week, when Mr. Roger W. Wallace and Mr. Julian Orde represented Great Britain, France, the United States, Germany, Austria, Italy, Switzerland, and Belgium had also delegates present, Baron de Zuylen presiding. After discussion the Committee decided that competing cars in the Gordon Bennett contest shall be driven by drivers to be named by the competing clubs, and that the course on which the race shall be held must be at least 78 miles long.

IN Paris it is being stated that in the French eliminating tests, Gabriel, Rougier and Jarrott will be the drivers of the three De Dietrich cars, while Rigolly and Duray will be at the wheels of the Gobron-Brillié flyers. M. Clement has just entered three Bayard cars for the trials. So far as the programme of the Homburg automobile week has been drawn up, it comprises, in addition to the Gordon Bennett race, a hill-climbing competition for alcohol motor-cars up the Feldberg, an elegance competition at Homburg, and a motor-boat race from Mayence to Bingen.

IN connection with the automobile exhibition which opens at Turin on the 6th February, "La France Automobile" is organising a motor-tour from Paris to Turin. The journey is expected to occupy three days, and the route includes the climb up Mont Cenis, on the summit of which the tourists will be met by a party of Italian motorists.

MESSRS. SCHNEIDER AND CO., the great French gun builders, are now constructing motor-cars at their works at Havre, to the designs of M. Brillié. They have just completed a special 20-h.p. petrol motor-wagon for the Portuguese Government. The vehicle is capable of carrying a

load of five tons, and of hauling four gun-carriages.

Two motor-vans are at present being used by the postal authorities in Berlin, one being propelled by an alcohol motor and the other by electricity. The 5-h.p. alcohol van is being employed for the carriage of mails between the G.P.O. in the German capital and the suburbs of Schöneberg, while the other is utilised in the Parcels Post service.

THE A.C.F. last week paid over a sum of £200 to Gabriel as a prize for reaching Bordeaux in the shortest time in the memorable Paris-Madrid race.

THE old horse market in Cincinnati, which has been for seventy years a noteworthy feature in the industrial life of that city, has become a thing of the past, the last of the horse market stables having been leased to the Cincinnati Automobile Company. Thus where once horses were trotted up and down to show off their good points to the throngs of prospective bidders, the whirr of the motor-car is now heard.

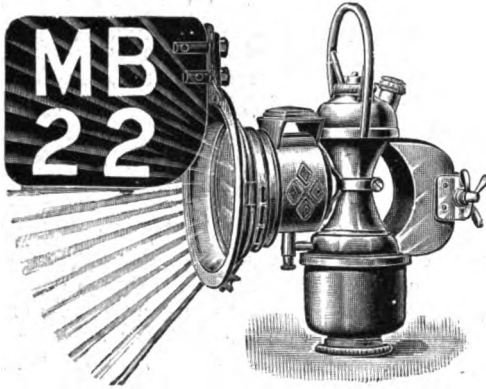


Motoring in the Snow—Herr H. Dieterich, the President of the Dresden Automobile Club, and his brother, Dr. K. Dieterich, on their Benz Cars.

[Allgemeine Automobil Zeitung.]

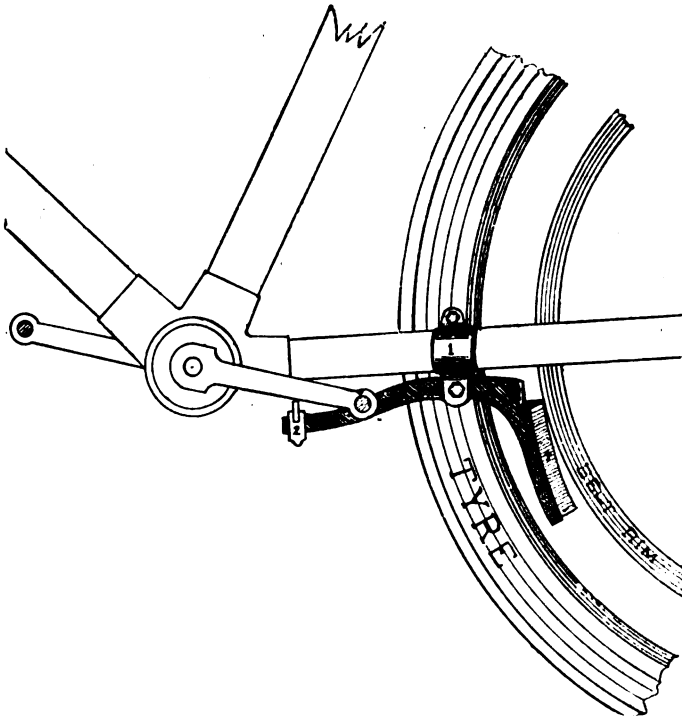
MOTOR-CYCLING NEWS.

THE new Motor Car Act compels every motor-cyclist to carry a number attached to his machine in such a manner that it can be seen from either side of the road. The Act also stipulates that these numbers must be illuminated at night. To meet this demand Messrs. H. Miller and Company have intro-



duced an acetylene lamp as shown in the accompanying illustration. The number plate, which is made of aluminium, is painted a dull black, and is made detachable to enable cyclists to have the number painted on. The plate is raised above the half diameter of the glass, and consequently there is no shadow thrown upon the road.

WE are herewith able to give an illustration of the motor-cycle brake recently introduced by Messrs. Wass and Cocks, Limited, of Ealing Dean, W., and of which several correspondents have lately written in glowing terms. It consists of a lever working in a clip, attached to the compression stay of the machine. One end of the lever is fitted with a shoe having a dovetail groove into which the brake block is fastened. The brake block itself can be supplied in V section or flat, according to the section of the belt pulley. The other end of the lever is



fitted with a pawl upon which the crank presses when back-peddalling, thus applying the brake. The pawl is so constructed that it can be instantly thrown out of action when the brake is

not required. The power of the brake can be graduated to a nicety, according to pressure used in back pedalling. The makers state that it cannot possibly jam, and that its few working parts are a safeguard against its getting out of order.

A MOTOR-CYCLING club is being formed at Staines, with Mr. G. W. Manning, of Lud Lodge, London Road, Staines, as hon. secretary. Already twenty-five riders have intimated their intention of becoming members.

A SOMEWHAT novel contest was organised recently by the New York Motor-cycle Club, viz., as to who could take the longest time over a quarter mile course, the engines to be kept in action the whole of the time. The event was won by Mr. H. Jehle, who on a 1½-h.p. belt driven machine took 3min. 52 4-5 sec. for the quarter mile, equal to a speed under four miles per hour. Nothing was said about belts, and as a result, Jehle



Mr. N. J. Tuchmann, of the Motor Volunteer Corps, as a despatch bearer.

set the belt of his machine so loosely that it just gripped or slipped on the pulley sufficiently to provide momentum. The engine itself "raced" at terrific speed, but Jehle crawled so slowly that the timekeeper, walking alongside, had no trouble in keeping pace with him.

WITH regard to the Boxing Day run to Wisley of the Motor-Cycling Club the meeting-place is at the Roehampton Gate entrance to Richmond Park, at 11 a.m. Lunch will be taken at 1.30 p.m. at the Hut Hotel, Wisley.

A NEW catalogue has been issued by the Clyde Cycle and Motor Car Company, Limited. Not only does the company make cars, but they keep several for hire and also give instructions to motor-ing novices. Among the special illustrations we notice a view of the 6-h.p. two seated Clyde car, a 12-h.p. four-seated vehicle with tonneau body, and the company's well-known motor-cycles. In connection with the latter the Clyde forecarriage and a trailer have been introduced to be used with the Clyde 3½-h.p. motor-bicycle.

HERE AND THERE.

A GERMAN contemporary refers to the Diplock "Pedrail" tractor as "a technical monstrosity."

COMMANDER PRENDERGAST, of H.M.S. Excellent, Portsmouth, has just acquired a 10-h.p. Wolseley car.

SEVERAL Midland motor-car firms, including the Duryea Company, will close from Friday to Monday inclusive.

A GARAGE for the accommodation of about fifty cars has been opened by Messrs. H. J. Storey and Sons, in Cambridge.

THE South Western Electrical Company, Limited, has a motor garage near Putney Bridge, in the Fulham Palace Road, S.W.

THE first annual dinner of the Eastern Counties' Automobile Club was held on Thursday of last week at the Great White Horse Hotel, Ipswich.

AN electrical omnibus service on the Lombard-Gerin system has just been established between Gallarate and Samarate, Italy, a distance of $3\frac{1}{2}$ miles. The vehicles have accommodation for 28 passengers.

AFTER a long discussion and a personal visitation of a site in the Commercial Road for the storage of their motor-buses, Eastbourne councillors have decided that the Electric Lighting Committee must bring up a fresh recommendation.

THE Doherty Accessories Company, Limited, have brought out a new registered design of radiator, the ordinary horizontal tubes being fitted with small transverse tubes. They are also placing on the market a combined water-tank and radiator.

A POPULAR price light two-seated car is being placed on the market by Messrs. Alf. Dougill and Co., Limited, of Leeds. It will be known as the Frick car, and is fitted with a single cylinder 7-h.p. motor and with a friction-driven variable speed gear easily operated from zero to maximum in either direction.

THE exports of automobiles and parts from the United States during the month of October were valued at £23,826, as compared with £24,524 for the same month last year. The exports for the ten months ending with October last amounted to £262,392, as compared with £184,122 for the same period in 1902.

MESSRS. HANS RENOLDS, LTD., whose productions are held in such high esteem by motorists and cyclists, have sent us a copy of the new general catalogue of driving chains and wheels they have issued. It is a most interesting production, and gives illustrations of a number of different applications of chains for driving purposes. Included in these are the use of the Renold "Silent" and roller chains for motor-cars, their employment on a Wolseley car and a Coulthard wagon being illustrated.

MESSRS. SALSBURY AND SON, LIMITED, ask us to mention that their letter box was broken into on the morning of the 19th inst., and their entire post carried away. They will be obliged if those customers who remitted by that post or thereabouts, will stop payment of their cheques, or if any of them are in a position to give Messrs. Salsbury and Son the numbers of any postal orders or money orders that should have reached them that morning they will be glad to have payment stopped and the numbers forwarded so as to assist them in tracing the perpetrator of the theft.

THE Brouhot Motor Company of Great Britain, Limited, has been registered with a capital of £2,000 to acquire the benefit of an agreement between Messrs. Brouhot and Co., of Vierzon, France, and the Graphic Motor and Engineering Company, Limited, whereby the last-named company were appointed sole concessionaires for the United Kingdom and colonies for the sale of motor-cars, motors, and parts thereof manufactured by the company first mentioned. The company will take over the business created by the Graphic Motor and Engineering Company, Limited, in connection with the aforesaid agency, etc. The first directors are Messrs. W. Tattersall and J. Farmer.

A DARRACQ and a Peugeot car are being used in connection with the automobile classes at the Battersea Polytechnic.

THE Motor Inventions, Limited, has been registered with a capital of £1,000 to manufacture and deal in motors, etc. The registered office is at 1, St. Mary Axe, E.C.

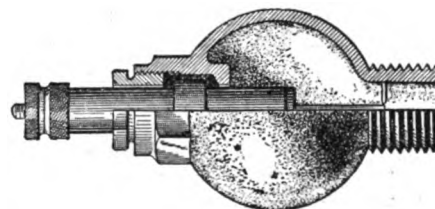
A BILL has been placed before the U.S. Congress for the creation of a Bureau of Public Roads. The object and purposes of the Bureau will be to assist and co-operate in the building and improvement of public roads.

MADAME LOCKERT has again issued her "Agenda-Buvard," made specially interesting by reason of the many excellent caricatures of motorists with which its pages are embellished. Extending to more than 200 pages, this diary is also becoming a useful directory of the French automobile trade.

THE fire brigade was called to 151, Oxford Street, London, W., on the 18th inst., where a fire had broken out on the premises of the See Motor Car Company (Limited). Several gallons of petrol had become ignited in the basement, and caused a great flare for a short time, but the firemen soon overcame the mischief.

As the manufacture of electric accumulators has been certified in pursuance of the Factory and Workshop Act, 1901, to be dangerous, the Home Secretary has made a number of regulations, and directs that they shall apply to all factories and workshops, or parts thereof, in which electric accumulators are manufactured.

THE accompanying illustration shows a new plug named the "High Ball," which has been introduced by the Gas Engine Ignition Equipment Co., of Chicago. It is claimed for it that it



never short-circuits through carbon deposits. The sparking points are located on the interior of the plug casing, which protects them against damage from a fall or in inserting the plug into the cylinder.

AT Birmingham a tramcar driver has been summoned by the police for driving his car at the rate of eight to ten miles an hour, when the Board of Trade regulations allowed only four. The case was dismissed on the ground of insufficient evidence.

MR. J. GLIDDEN, of Lowell, Mass., who this year made an automobile tour to the Arctic Circle, is planning a motor trip around the world for 1904. He expects to start about August or September next, going east and covering Southern Europe, parts of Northern Africa and Southern Asia, including India and China.

MR. GEO. IDEN, M.I.M.E., works manager of the Motor Manufacturing Co., Limited, Coventry, has resigned his appointment with that company. He is one of the pioneers of the industry, and his designs and productions in motors and cars have achieved a long list of successes, the latest to his credit being gold and silver medals in the last 1,000 miles reliability trials. The Saloon car referred to in our report of the Paris Salon is also of his design.

AT the close of Miss Marie Corelli's libel action on Wednesday of last week, the Birmingham papers were circulated in that town within a very few minutes of the pronouncement of the jury, but when the parcels were made up ready for Stratford-on-Avon it was realised that there was no train till 9.25 p.m., which would mean several hours' delay. A resourceful pressman, however, rang up the Lanchester Company, with the result that in a few minutes a 16-h.p. car was doing its thirty miles per hour with a cargo of the "Evening Despatch."

SOME USEFUL NOTES.

—◆—

THERE are still quite a large number of people who prefer to have a belt connection between the engine and the gear-box instead of a friction clutch. It is true that clutches are sometimes troublesome, but the trouble may usually be traced either to the fact that the driver does not understand how to use and adjust his clutch, or that the clutch is of inferior design and construction. Generally speaking, the driver is at fault, and makes matters worse by treating his clutch with various compounds, all of which are more or less detrimental to its life and wearing, though they may remedy the trouble for a short time.

IN the case of leather-faced clutches, in nearly every instance it will be found that the trouble is either—(a) The clutch is very fierce and engages with a violent shock, or (b) the clutch slips badly and at times refuses to drive the car. A fierce clutch is generally due to very new leather, which has not been treated with castor oil to make the leather pliable, as all new clutch leathers should be; or, again, it may be due to the fact that the male cone does not engage truly with the female—that is, the leather only bites in certain places. As above stated, the first trouble may be remedied by castor oil. The clutch pedal should be depressed and the oil laid on lightly with a small brush; it will be found that the fierceness will very soon disappear, owing to the leather becoming pliable, and as soon as the fierceness has worn off it will be advisable to slightly tighten up the clutch spring. As regards the clutch which does not engage truly, this is a more difficult matter to deal with, as it means taking the clutch right down and truing up the leather; if, however, the latter is only very slightly out of truth, the cure may be effected without taking the clutch right down: the connections must be undone, the spring removed, and the male cone pulled back; then, by turning the male cone round in the female portion, it can be seen where the leather touches; by gently rasping the spots where the leather touches the surface can be made even and the leather will touch evenly all round.

SLIPPING in a leather-faced clutch may be due to want of adjustment, and consequently remedied by tightening up the clutch spring. Very often slipping is due to the presence of grease, oil, etc., on the leather, in which case the latter should be well washed with petrol and slightly roughened with a rasp, and adjusted up a little by the spring. A light tin screen should be placed between the clutch and the gear-box from where the oil usually splashes. Of course, if the leather is badly worn and fired, there is only one remedy, and that is a new clutch leather. The latter gets badly burned by injudicious driving, such as slipping the clutch continually on the high speed on a hill, instead of changing on to the lower speed.

BEWARE of putting resin and other concoctions on the leather of a clutch; the cure by such agents as resin is only temporary and very detrimental to the leather, and resin, it should be noted, has the unfortunate property of becoming heated by the friction, and consequently sticking up the clutch so that it cannot be withdrawn when required. Beware also of having a car washed when the clutch is held out by the hand-brake, as the effect of water upon the leather is by no means good.

As regards metal clutches, there is not much to be said, as the only method of treating these till actual wear sets in is adjustment. It should be noted, of course, that oil will cause slip, which may be cured by washing out the clutch with petrol and fitting up a metal shield as described above.

MR. ROWLAND WARD, the well-known naturalist, has three motor-cars, and, in "M.A.P.," tells how in 1888 he had a number of American naphtha motor launches built in New York.

CORRESPONDENCE.

UNNECESSARY RESTRICTIONS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I ask, through the medium of your valuable paper, what is being done to frustrate the absurd bigotry and prejudice of the various Urban Councils, whose recommendations, if carried out by the Local Government Board, will frustrate the intentions of the Motor Car Act, 1903, will add heavy expenses to the ratepayers for notice boards, and will render motoring a nuisance. The Godstone Council, I see, have recommended that speed on four miles of the main road be restricted to eight miles per hour; this, with the action of the Caterham Council, if passed, will result in about seven miles of the main road to Eastbourne being covered at a little more than walking pace. I am sure that there are many more as absurd proposals by Urban Councils as these I mention, and I suggest that a meeting of all motorists be called at some convenient place to discuss the proper steps to be taken.—Yours truly,
ERNEST M. STORY.

NAMING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have received a number of answers to my letter proposing that owners of motor-cars should put names on them, as is done in the case of yachts and pleasure boats. With only three exceptions, the answers I have received are favourable. I hope, therefore, that the practice will become general. It would, in addition to other advantages, be of great convenience that cars should be named, as well as described by maker's name and h.p., in programmes of contests, speed competitions, etc.—Yours truly,

J. H. A. MACDONALD.

BENZ V. LIGHT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Re D. Beaumont's letter in your issue of the 12th inst., I was very much interested in the same, as I purchased a 3½-h.p. Benz car about six months ago and found the same fault as he has done, viz., that I could not go up even the smallest incline without dropping to second speed or even to the crypto. I have, however, made several small improvements, and now find the car gives me every satisfaction, and would, I believe, compare very favourably with almost any other car of equal h.p. on the road. In fact, the other day I did a run of seven miles on a give and take road without dropping from the top speed once. If Mr. Beaumont would care to write again I should be pleased to correspond with him on the subject and explain what I have had done.—Yours truly,

AMATEUR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think if Mr. Beaumont were to have a Star carburettor fitted to his Benz he would not complain of want of power. I have one on my Benz, and I can take any slope and even hills on top speed providing roads are good. The cost would probably be about £5. I do not think there is any car to beat the Benz for a poor man, as it is cheap to run and easily kept in order. I have run 32 miles this summer without a stop in a little over two hours, and this up roads hilly and bad in places. With regard to the crypto, I rarely use it except to start the car, as it takes the strain of starting off the second-speed belt.—Yours truly,

E. G. ARCHER, M.R.C.S.

THE RELIABILITY TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Two things seem to stand out clearly in the Automobile Club report of the reliability trials. (1) That there is no pneumatic tyre on the market which is worth its weight in straw to a professional or business man. (2) That, except in the case of one or two firms, the advertised horse-power is very little guide to the power produced.—Yours truly,
HARRY LUPTON.

THE MOTOR-CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice you are publishing a list of those who have secured the first registration of cars in their respective districts. Some years ago I brought home the first motor-car in my district and the first motor-bicycle, and now have the distinction of securing the first registration of a car in my native county (Northampton). I am looking forward to the very material benefits the self-propelled vehicle is destined to bestow upon the progress of the country, but much regret that development should be checked by restrictive legislation. Truly, we are a conservative race, although I am bound to admit the severe penalties of the new Act have been brought about to some extent by the inconsiderate abuse of

the road by those who should have jealously protected their privileges. Its application, however, is now at hand, and I trust owners and drivers of all motor vehicles will remember that future legislation for emancipation depends very largely upon ourselves, and I would commend the good old "Do unto others as you would they should do unto you."—Yours truly,

ALFRED SMITH.

THE RAILWAY COMPANIES AND THE CARRIAGE OF CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The salutary effect of the outcry raised by the automobile and other industries against the prohibitive conditions with regard to the carriage of petrol which the railway companies endeavoured to enforce some eighteen months ago has unfortunately not proved of a lasting nature, and the antagonistic attitude of these companies to the new form of locomotion is once again made manifest by the issue of an extraordinary form of indemnity which they require to be signed by the consignor of a motor carriage before they will accept it for conveyance.

The actual notice and indemnity form as sent out by one of the railway companies reads as follows:—

"CONVEYANCE OF MOTOR-CARS AND MOTOR-CYCLES INDEMNITY."

"The.....Railway Company hereby give notice that they do not accept for conveyance motor-cars and motor-cycles charged with electricity, or with gas, oil, or any other inflammable liquid or vapour, and that they require the following indemnity to be signed before accepting such machines."

.....Station.
.....190

"I hereby declare that the motor.....which I require to be conveyed from.....to.....is not charged with electricity, or with gas, oil, or other inflammable liquid or vapour, and in consideration of the.....Railway Company accepting the said motor.....for conveyance, I agree to relieve the company from all risk and responsibility in respect of the same, and I also agree to indemnify the company against all damage, loss, or expense which may arise out of, or be incurred in consequence of, such conveyance."

.....Signature of Sender.
.....Address.

Witness.....

The obligation laid upon the consignor to withdraw all petrol from the vehicle prior to its despatch is perfectly reasonable, and while the need of removing or discharging the accumulators only carried on a car for ignition purposes may rightly be regarded as a vexatious and unnecessary precaution, still this point sinks into insignificance beside the indemnity involving the consignor in almost limitless responsibility in respect of any damage, etc., which may arise out of the conveyance of the vehicle.

As the railway companies refuse to accept at all a vehicle charged with electricity, gas, oil, or any other inflammable liquid or vapour, it is obvious that the latter portion of the indemnity can only refer to motors not so charged, and therefore the companies evidently intend to hold the unfortunate sender responsible for all damage, loss, or expense arising out of the mere conveyance of the vehicle, surely a most posteronous condition.

The possibilities it opens up are numberless. For example, a vehicle might break loose and cause damage to the companies' property; the consignor could be held liable. It might cause injury to an employee of the company during loading; the consignor could be held liable.

Of course, it is conceivable that the railway companies mean this letter of indemnity only to apply to losses resulting from omission to discharge petrol, etc., from a vehicle; but, if so, it should be clearly stated, and I think the words "in case it shall be found that the said motor is so charged" should be inserted after the words "I agree," in which case the complete clause would read as follows:—

"And in consideration of the.....Railway Company accepting the said motor for conveyance, I agree, in case it shall be found that the said motor is so charged, to relieve the company from all risk and responsibility in respect of the same and to indemnify the company against all damage, loss or expense which may arise out of, or incurred in consequence of, such conveyance."

It is quite evident, however, that, to rectify the present state of affair, concerted action is imperative, and I venture to hope that, not only will the various automobile clubs and trade societies take immediate steps, but that automobilists all over the country will protest in no uncertain manner against such unjust conditions of conveyance. —Yours faithfully,

E. M. C. INSTONE.

THE 5-H.P. HUMBERETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to the enquiry by "Tilehurst," in the *Journal* for the 12th inst., I take this opportunity of giving my experience of a Humberette

car. The writer left Coventry in a new Humberette for Scotland on October 20th. The weather was exceedingly wet and the roads consequently heavy. The first day we went as far as Nottingham. The next morning there was no improvement in the weather, but we decided to push our way north. Leaving Nottingham at 9.30 a.m., we drove on through wind and rain, the car meanwhile giving the utmost satisfaction. Durham was reached at a late hour the same evening. The next morning, although the weather had slightly improved, the roads were as heavy as ever, but we started for Newcastle at 10.30 a.m. This was the worst piece of road on all our journey north. In some places the mud was the depth of three inches. The engine worked beautifully all the way, and gave us absolutely no trouble. Edinburgh was reached at 9 o'clock the same evening. We have up till now travelled no less than 1,400 miles, and, with the exception of four punctures and a slight defect with a sparking plug, have had absolutely no trouble whatever.

As for learning how to drive, the only lesson the writer received was while sitting beside the driver on the way north, after which he was quite master of the levers. As regards the working of the car, I always see that my accumulator is fully charged, also that all grease boxes are well packed, and every part properly lubricated. In my opinion those little details, if attended to, save a great deal of trouble while on the road. I can safely recommend this car to any one who wishes a safe, pleasant little hobby. —Yours truly,

DANIEL LAWSON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to "Tilehurst's" query, in your issue of the 12th inst., asking for the experiences of a private user of the 5-h.p. Humberette, perhaps mine may be of interest to him and to others of "moderate means." I got the car about the middle of last August, and have covered about 700 miles on it. I have had but three stoppages on the road, for none of which I can blame the car. The first was due to a piece of leather blocking up the petrol supply pipe to the carburettor, the second a punctured tyre, and the third was due to a nut coming loose. Since then I have gone through every nut on the car, so this last should not happen again. The machine is very simple to drive, and is economical in petrol and lubricating oil. An average speed can be maintained of twenty miles an hour on give and take roads in the country, and as the car is a very good hill climber, it is rarely necessary to get on the low gear. I have yet to experience my first side-slip, my immunity from this being no doubt due to the relatively long wheel base. The seats are comfortable, as there is plenty of room for the feet. Enough luggage for a short tour may be carried under the seat, and there is ample room for tools, spare parts, &c. It is a smart-looking car and well finished, and I can confidently recommend it to anyone on the look-out for a cheap car. Needless to say, I have no interest in the manufacture of the machine.—Yours truly,

W. D. HEYWOOD.

LOSS OF POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can you or any reader tell me how to put an 8-h.p. engine right which shows a loss of power? I have fitted a new piston and rings, ground in the valves, and have a perfect compression. The magneto ignition gives a good spark so far as I can see, and the carburettor seems all right. Is the loss of power connected with the carburettor or the magneto?—Yours truly,

LOSS OF POWER.

["Loss of Power's" trouble is probably due to the ignition being timed too late. If this were so, the engine would appear to be running all right whilst stationary, but would slow down immediately the load was put on. Failing this, the exhaust valve might be carefully examined to see that it is timed to lift at the proper time. This, if not correct, would also cause loss of power.]

SCREENS AND CANOPIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be glad of some information as to tops and screens for motor-cars. There seem to be varied opinions upon these and the desirability of using them. To what extent do they slow the car, and do they create so much draught to outweigh the advantages? I am about having a body built, and if I have any kind of protection, want something that is easily carried and can be used or not without much trouble. I incline to a screen which can be let down or hinged to form protection for the lower parts of occupants only when not up, and a hood that will fold back on tonneau; but these hoods, etc., appear to catch the wind very much. The question is whether the above is better than a canopy, etc., which, to be sure of having when required, must always be carried.—Yours truly,

F.

[We think "F." could not do better than use the ordinary glass screen and canopy for his car in preference to the hood. The latter is a great drawback to speed unless on a very powerful car, and even then does not add to the comfort of the occupants. There are many firms now making a speciality of bodies with canopies and screens, and "F." could not do better than apply to these for designs.]

QUERIES RE DE DION MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR.—Would you, or any of your readers, mind informing me if it is possible to put a 4½-h.p. De Dion cylinder head and piston and rings to a 3½-h.p. base chamber and connecting rod? Would the four studs, water fittings, and induction pipe come right?—Yours truly,

J. B.

[It is quite possible to fit a 4½-h.p. De Dion cylinder to a 3½-h.p. crank case, but a new connecting rod, new piston, and rings will be needed. The holes in cylinder will require slightly easing over to fit the studs. The present water fittings and induction pipe can be used, with slight alterations.]

A MILITARY MATTER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR.—Many months ago the Secretary for War offered three prizes, of the value of £1,000, £750, and £500 respectively, for tractors which should be suitable for military purposes. It was announced that the trials would be conducted in the spring of last year, and, in order that the tractors should be thoroughly tested, they were promised to extend over a considerable time. Entries had to be sent to the War Office not later than January 1st, 1903. After a long delay it was announced that the date of entry had been postponed to considerably later in the year, and at last we are able to learn, from an announcement a week or two ago, that the first prize has been awarded. The second and third awards were not given, because of the lack of competitors. One hardly knows whether to praise or blame the War Office in this matter. True, they have of late shown considerable awakening to the value of motor-vehicles for military purposes, but the way in which this competition was conducted does not seem to have been successful in attracting a sufficient number of entries to give the results a comparative value. I would suggest that, should the War Office seriously contemplate taking up the matter, they should make their competitions known throughout the country, not only by circulars addressed directly to all the known firms likely to enter, but also by announcements in the public press which are likely to come under the notice of the many inventors now quietly at work on the subject. Furthermore, civilians being unacquainted with military methods, would, perhaps, prefer that the committee responsible for the arrangements should consist of a proportion of non-military persons. In fact, seeing the success that has attended the trials of pleasure vehicles organised by the Automobile Club, and the way in which the van trials of next year are being anticipated, would it not be well for the War Office to take the A.C.C.B.I. into association in any future experiments which may be made? With such men as Colonel Crompton, Major Lloyd, Major Holden, and others at the head of affairs, there should be no difficulty in arranging a competition which should attract general attention both at the time it was held and at the announcement of the result, instead of the whole matter being dismissed by the newspapers in a stray paragraph or two.—Yours truly,

AN INCONSPICUOUS INVENTOR.

LARGER DRIVING WHEELS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR.—I am interested in N.W.P.'s letter re the use of larger wheels with solid tyres on cars, as I have always thought myself that this would make a very good combination. I am afraid, however, there are difficulties in the way.

In the first place, the car, unless hung low down on dropped axles, would not be very safe at corners, and, if it were hung low down, it would not leave any extra air space underneath, and the wheels might be in the way of passengers mounting the car. These difficulties might, however, be overcome. It is certainly a great pleasure to drive a car without having to think about the tyres.

The old Daimler and Benz cars, it must be remembered, were hardly speed monsters, and when a speed of twenty miles per hour was attained the noise and jolting was generally rather excessive on all but very good roads. The idea is, I think, well worth the attention of manufacturers.—Yours truly,

A. C. E. W.

IRIS MOTOR-BICYCLE.—Replying to Mr. Thos. West, the agents for this are the Iris Motor Company, Holland Street, North Brixton, S.W.

MALTA.—Letters to "Subaltern," who wrote re an opening in Malta, have been forwarded to our correspondent.

SPARKING PLUGS.—"Toronto" asks:—"Is there any one who rectifies sparking plugs? I have several used on my motor-car which do not appear to be worn out. I should like them examined and repaired, if they could be."

SPEED INDICATORS.—Mr. W. Ritchie Smith, who enquires for makers of speed indicating instruments, is referred to Messrs. Thorpe and Salter, 225, High Holborn, W.C., and Messrs. A. Dunhill, Ltd., 145-7, Euston Road, N.

FAFNIR MOTOR-CYCLE ENGINES.—Replying to Mr. T. Baker, full particulars of these motors can be obtained from Messrs. G. Straus and Co., 211, Upper Thames Street, London, E.C.

ANTI-FREEZING MIXTURES FOR CYLINDER COOLING WATER.

WHEN cold weather came on last autumn I became interested in the subject of non-freezing liquids for cooling petrol motors, and began to inquire among builders, agents, and users as to what was a satisfactory and non-injurious solution. I had occasionally noticed in journals the mention of calcium chloride solutions and diluted glycerine for this purpose, but nothing of a definite or positive nature. The articles noted were usually nothing more than remarks that this or that substance, in indefinite and varying form, was suitable.

My inquiries proved that there was no definite information to be had from the sources tried. Among the objections to calcium chloride were the following:—"Engine got too hot," "Stuff would freeze when it was only moderately cold," "It costs too much," and, most alarming, "We have tried it at the factory and it ate holes in the tanks, pipes, and even the cylinders."

Glycerine was said to work well in some cases, but was very expensive, as it became fouled in a short time and had to be frequently renewed. Where rubber hose was used in connecting various parts these were attacked and caused failure. Inasmuch as CaCl₂ was supposed to be a neutral and inert substance, and was really cheap if not purchased in homeopathic doses, it being practically a by-product worth in large quantities ½d. per pound and purchasable in the quantities now under consideration at from 2½d. to 5d. per pound (although one wholesale chemist asked me 2s. 8d. per pound for the commercial article), I then decided that I would avail

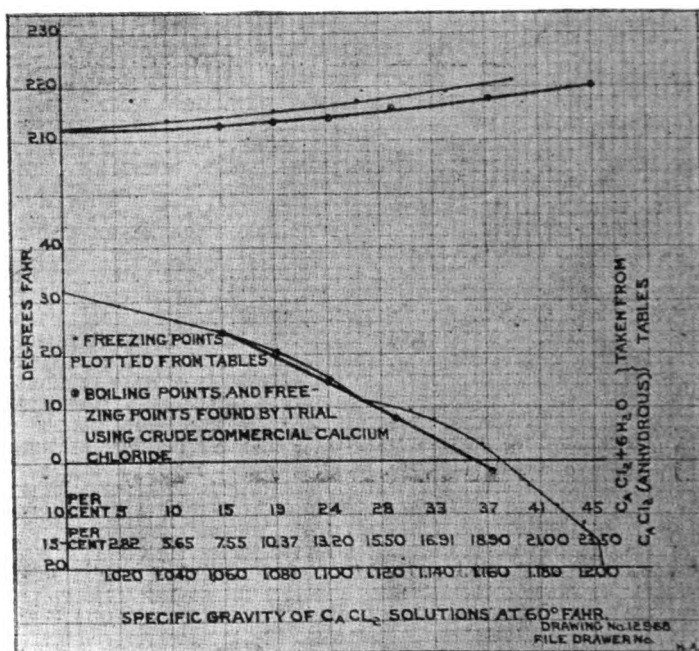


Diagram 1.

myself of facilities in the way of assistants and apparatus ready to hand, and have a few simple and easily-made determinations carried out, so that the information to be gained might be available for the free use and information of fellow users of petrol-cars, and that the doubts now surrounding the subject might be, to at least some extent, removed from their minds.

Diagram No. 1 shows freezing points of CaCl₂ solutions, plotted from a table given in Siebel's "Compend of Mechanical Refrigeration," which will be seen to produce a slightly erratic curve. The diagram also shows freezing points of such solutions determined for me by Mr. L. H. Flanders in one of the laboratories of the Westinghouse Machine Company, the lowest point being 2° below 0° Fahr., this being where the brine tank in which test solutions were chilled froze solid. The boiling points of the same solutions were also determined, as shown in the upper part of the diagram.

I have added a curve of boiling points as given in "Dictionary of Solubilities," by A. M. Comely, which are slightly higher than those determined by Mr. Flanders, possibly due to errors of observation, as there was no effort to make extremely accurate determinations, it being unnecessary for the case in hand. It will be noted that a solution of CaCl₂ of about 1.20 specific gravity will not freeze until it has reached a temperature of about 15° below 0° Fahr., and that it boils at about 220° Fahr. This solution should, therefore, be satisfactory in any reasonable climate. As to the question of injurious action of this solution on the metals with which it must come in contact, at the temperature mentioned, I would say I now feel satisfied that there is no cause for apprehension, except, possibly, in the case of galvanised iron or of zinc.

Careful experiments to determine this question were made for me by Mr. H. C. Babbitt, chemist at the laboratories of the East Pittsburg Gas

Works, whose report in condensed form is to the effect that tests were made to find the action of commercial calcium chloride upon soft steel, cast iron, sheet copper, sheet brass, galvanised iron and zinc. From 10 to 15 grammes of clippings of each metal were carefully weighed and kept at a temperature of practically 212° Fahr. in a 50 per cent. solution for periods of from three

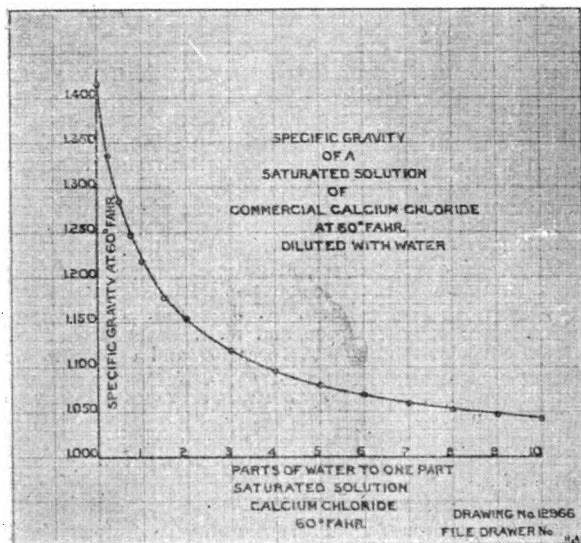


Diagram II

or nine days, the solution being allowed to boil during part of the time. The results were as follows:

	Per cent.
Steel lost in weight	0.07
Iron lost in weight	0.09
Copper lost in weight	0.07
Brass lost in weight	0.001
Galvanised iron lost in weight	0.16
Zinc lost in weight	0.47

These figures are extremely small, and probably, at least partly, due to the removal of a small amount of oxide or scale, and, possibly, even dirt, excepting in the cases of galvanised iron and zinc, the latter of which is evidently attacked, and therefore this metal and galvanised iron, on which

had made a similar test about a year ago with iron and copper, and that he had found, after ten hours' boiling in a strong solution, a very slight loss in the case of the iron, which is ascribed to the removal of a small amount of scale; but the losses on both metals were practically nil and negligible. No tests on galvanised iron were made, but they are now being carried out. Mr. Haynes further states that he had this solution in a car for several months last winter, and was unable to find any indications of injury. In my own vehicle, in which no galvanised iron is used, I have had this solution for a month or more, and have had careful analyses made of small samples of the solution drawn each week, with no indications of the presence of any one of the metals included in the system.

In the case where serious injury was reported from the use of calcium chloride I believe that this substance was in some way substituted by some other, and that in all probability chloride of lime, whose chemical formula is CaOCl_2 , was used. As the average automobilist has no facilities for determining specific gravities, and as making a percentage solution by weight of a deliquescent substance such as CaCl_2 is a very unreliable procedure, I append a curve (No. 2) showing parts of water to be added to one part of a saturated solution of CaCl_2 to produce approximately solutions of various specific gravities. To be fairly accurate, the saturated solution must have a temperature of 60° Fahr., and it can best be made by dissolving as much of the salt in water as the water (thoroughly stirred) will take up, with some crystals left undissolved when the solution is at 60°. Roughly, to make one gallon of saturated solution will require about one-half gallon of water and eight pounds of the commercial calcium chloride, having, usually, the chemical form of $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$. It happens that approximately the best solution for our purpose in this latitude (Pittsburg, Penn.) can be made by using one part saturated solution and one part water. All that is needed, therefore, is a measure of some kind and a fairly reliable thermometer. The solution will contain some insoluble impurities and should be carefully strained or filtered.

Some samples of calcium chloride contain more or less "hydrated water" than is given in the above formula, and therefore the quantity of crystals per gallon of saturated solution may vary somewhat. In other latitudes a solution of higher or lower specific gravity may be advisable, and it is well to use as weak a solution as will be safe against freezing at the lowest temperatures to which the vehicle will be exposed. It is important that when a solution of high specific gravity, such as proposed for this latitude, for instance, is used it be not allowed to concentrate materially by evaporation, but that water be frequently added to the tank so as to keep the solution fairly normal; otherwise crystals may form in the pipes and cause trouble. A good plan is to purchase a suitable hydrometer and occasionally measure the specific gravity; but this is not really necessary.

For the use of anyone who may prefer glycerine I append a diagram (No. 3) showing curves of freezing and boiling points of various volumetric percentage solutions. Any losses from leakage should be made up by the addition of fresh solution in either case, while losses from evaporation are to be made up by adding water as above mentioned.

E. E. KELLER.

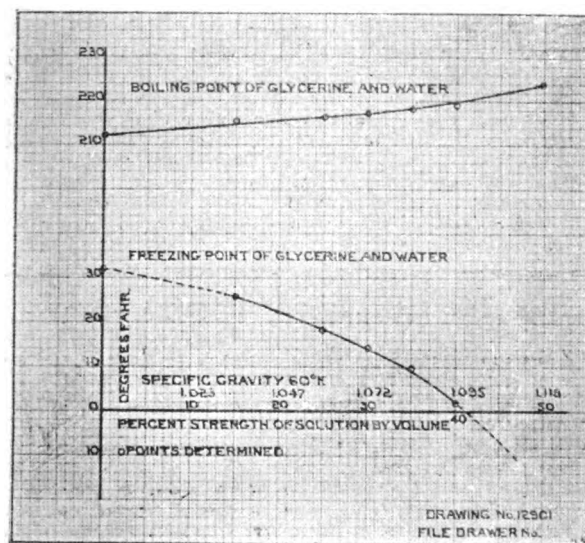


Diagram III.

A QUESTION OF WARRANTY.

In the Glasgow Court of Session judgment has been given by Lord Kyllachy in the action by James Cowell, and Ernest Cowell and John Cowell, his sons, residing with him, against the Glasgow Motor-Car Company, for payment of £230 and £50. In March last pursuers purchased from defenders, as agents for the builder, a 6½-h.p. Peugeot car, complete, for £230, receiving with it a warranty that "this car is guaranteed for three months against any defective workmanship and material." Pursuers averred that numerous defects manifested themselves in the mechanism, and finally, on the evening of June 11th, the back axle broke near the hub, with the result that the hind wheel came off. By the occurrence of these repeated breakdowns pursuers became convinced that the car was radically defective in workmanship and material, that it thus failed to comply with the warranty, and that they were therefore entitled to reject it.

Defenders not only declined to take back the car and return the price, together with the second sum sued for as expenses incurred, but also rendered pursuers an account for various minor repairs. Defenders denied that the breakdowns were due to defective material and workmanship, and averred that they were due to recklessness, carelessness, and want of knowledge in handling the car and its mechanism. They also explained that they kept to their guarantee, viz., to replace any defective part or parts which might break by flaw or fault of workmanship.

Lord Kyllachy absolved defenders, but found neither party entitled to expense of proof, and defenders entitled to expense to date of closing of the record. It appeared certain, his Lordship said, that the various breakdowns must be attributed either to defects of material or workmanship or to gross mismanagement of the car by pursuer's sons. Mismanagement was always possible, but there was no evidence of anything of the kind, and nothing was proved. The final catastrophe was due, his Lordship thought, to faulty steel around the recess of the ball-bearings. If pursuers had confined their claim to have the proper repairs executed he should have been disposed to decide the case in their favour. His Lordship thought, however, that pursuers were not entitled to reject the car and require the price back, and repair, not rejection, was the remedy stipulated in the warranty.

the zinc would also be attacked, are not so well fitted for use in the circulating system of a motor-car. The figures would indicate that the solution had no action whatever on brass and only a very slight and negligible action on other metals than zinc. They look larger in percentage than by actual weight. In each case the weight actually lost was in fractions of a milligramme, and would be considered within the limits of error.

Since writing the foregoing I have received an interesting letter from Mr. Elwood Haynes, of Kokomo, Ind., stating that he

NO LIGHT.

JOHN GOODWIN, of 6, Beira Gardens, South Kensington, was summoned at Bow Street (London) Police Court, for driving a motor-car in the Strand at night without having a red light clearly visible from behind. The defendant had a lamp with a red glass, but owing to the splash-board it could not be clearly seen by anyone standing immediately behind the car. Mr. Marsham, after inspecting the vehicle, came to the conclusion that the regulations had not been complied with, and imposed a fine of 10s. and 2s. costs.

CLAIMS FOR DAMAGES.

AN action was brought by Thomas Milward, Meriden, in the Birmingham County Court, against the Rex Motor Manufacturing Company, Limited, Coventry, for the recovery of damages for injuries sustained by himself, his trap, and harness, arising from the negligence of defendant's servant when he was driving a motor-car in the Coventry road on May 13th last. After a lengthened hearing the jury returned a verdict for plaintiff for £75.

AT the Birmingham Assizes, Charles Willetts, Cradley, brought an action against Squire Brooks, Lye, near Stourbridge, to recover damages for personal injuries received through the alleged negligent driving by the defendant of a motor-car. According to the case for the plaintiff, on August 5th, the plaintiff, with his wife and family and a driver, drove out in a gig in the Cradley district. Near the crossing of the Pedmore and Stourbridge road the defendant in his motor-car collided with them. They contended that the motor-car was going too fast to safely negotiate the corner on its proper side, and that it came out on the wrong side of the road. No horn was sounded, and before plaintiff could get out of the way the car dashed into the gig, tilting it up, and throwing out all the occupants, with the exception of the driver. The plaintiff was seriously injured, was confined to bed for a week, and it was eight weeks before he could resume work. A large number of witnesses were called on either side as to the facts. The jury found for the plaintiff, and assessed the damages at £50.

POLICE TRAP.

At Stokenchurch, on the Oxford road, a police trap, a quarter of a mile in length, has resulted in the capture of a few motorists of late.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Marylebone...	Dr. Attlee, Grosvenor Square, W.	25	£5, etc.
"	H. Stone, Great Marylebone Street, W.	22½	£5, etc.
"	A. Bunn, Notting Hill	22½	£7, etc.
Marlboro' St. (London)	F. Frentzel, Addison Road North, S.W.	—	£2, etc.
"	Dr. E. Lahwess, 66, Holland Park Avenue, W.	—	£2, etc.
"	P. Beale, Holland Park	—	£2, etc.
Chertsey	E. Gainez, Virginia Water	22	£3, etc.
"	Captain Nicholls, Camberley	—	£2, etc.
"	C. Henry, Flaxsted	20	£2, etc.
"	W. Seamer, St. John's Wood	26	£5, etc.
"	H. St. Leger, Sloane Square, W.	22	£3, etc.
"	J. T. Studley	—	£2, etc.
Wimbledon...	P. Harris, Wimbledon	—	Dismissed.
Wolverhampton.	J. Price, Wightwick	—	40s., etc.
Bourne.....	T. Woodward, Peterborough	—	£2, etc.

MOTOR-CAR ACCIDENTS.

ERNEST JAHINEAU, 26, of Old Compton Street, Soho, W., was charged at Bow Street on Saturday with driving a motor-car to the common danger. Edward Pickin said he saw three ladies crossing High Holborn, and one of them was knocked down by defendant's car, which was travelling about 14 miles an hour. She was dragged along about ten or twelve yards, and was run over. The defendant refused to stop. A constable said defendant took no notice of his signal to stop, but he had to draw up at a barricade in Little Queen Street, and was then arrested. He was remanded.

At Highgate Police Court, William Blackwell, of Coventry, appeared in answer to an adjourned summons, charging him with wantonly driving a motor-car and causing bodily harm to Robert Fletcher. The prosecutor

was crossing the Great North road near Fallow Corner, Finchley, on the evening of September 1st, when he was knocked down by a motor-car driven by the defendant and owned by a Spaniard, who was stated to be a man of wealth. Both legs and several ribs were injured, and he had to remain in the hospital for six weeks. Mr. Searle, solicitor, on behalf of the prosecutor, now asked that the summons might be dismissed as the owner of the car had made an offer of compensation. This course was allowed.

CLUBS AND ASSOCIATIONS.

SHEFFIELD.

ON New Year's Day the Sheffield Automobile Club will hold a circular run, to commemorate the coming into force of the Act which allows a speed of 20 miles an hour in the open. The meet will be at the Sheffield Town Hall, at 11 a.m., and the route via Baslow and Edensor to Rowley and Bakewell, Rutland Arms, and back to Sheffield.

Mr. S. E. Fedden will give the first Club lecture on Thursday, the 16th prox., at the head-quarters, his subject being "Electric Ignition as applied to Motor Vehicles." The non-stop certificates, which were won by Messrs. G. Lee, A. T. Dewhurst, W. James, J. T. Thompson, P. H. Dodds, W. B. Davy, J. Thompson, and W. S. Gilder in the 40 Miles' Non-Stop Trial will be presented on this occasion, and a presentation will also be made to the late hon. secretary, Mr. J. R. Wade.

With the advent of the New Year, it is proposed to have a special section for the motor-cycles, with weekly fixtures, and until the necessary arrangements can be made the motor-cycle section will meet at Leopold Street on Thursdays, and Hunters' Bar, Saturdays, at 3 p.m., for impromptu runs.

LINCOLNSHIRE.

At the annual meeting of the Lincolnshire Automobile Club, over which Sir Hickman Bacon, Bart., presided, the report of the committee was read, in which it was hoped that trials of agricultural motors would be carried out during the coming year. The rules of the club had been altered at a special general meeting, defining "the trade," and excluding those in "the trade" from participation in the management of the club affairs. It was a question whether the rule was not too stringent, and whether some change was not desirable. In regard to another rule, it was also very desirable that this should be altered, with a view to enabling the best terms possible to be obtained in negotiations with any automobile authorities. The club membership had now reached 118, which included almost the whole of the automobilists in Lincolnshire. It was suggested, in view of the heavy work done by the committee, of which the members knew nothing, except indirectly, that the secretary should once a month send to all members who desire it a short resume of these proceedings at a small annual charge to cover postage. The finances of the club were shown by the balance sheet to be in a very satisfactory condition. Sir Hickman Bacon was re-elected president.

COUNTY COURT CASE.

AN amusing story of the adventures of a motor-car has just been related at the Lambeth County Court. H. G. Elliott, trading as H. G. Elliott and Company, motor-car makers, Peckham Rye, was sued by Henry Burgess, a commercial traveller, for breach of warranty in respect to a motor-car. In September, 1902, Burgess agreed with the defendant that the latter should build him a car, but it was not until well on in the present year that the first trial trip was made. They were to go to Sevenoaks, but had a breakdown at Bromley. Subsequently there were fully fifty trials, but on no occasion did they travel two miles without stopping. Judge Emden gave judgment for plaintiff for £30 and costs.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editors' hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

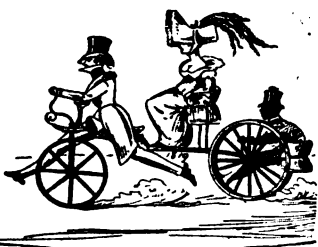
VOL. V.]

LONDON, SATURDAY, JANUARY 2, 1904.

[No. 252.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE present year will be an anxious one for motorists who take the matter seriously. In this country the effects of the new legislation will have to be carefully watched, and Continental observers will follow the course of events in the United Kingdom with more than ordinary interest. Exhibitions in all the leading centres throughout the world will follow that at the Agricultural Hall, London, in March, and the season of speed trials will be inaugurated by the Algerian Club's kilometre contest on the 24th inst., and that on the Ormonde-Daytona Beach, U.S.A., on the next day. It has been decided that the race for the Gordon Bennett cup will take place over the Taunus course on Friday, June 17th—a fortnight earlier than last year—and on another page our Continental correspondent gives the latest information available with regard to that event. Altogether it will be a busy year, towards the end of which the delivery van tests of the A.C.G.B.I. will contribute an important series of events.

The Hutton Racers.

SOME brief particulars of the racing cars which have been entered for the British eliminating trials for the Gordon Bennett team by Messrs. J. E. Hutton, Ltd., have been made known. They will be on entirely new lines. The engines, which have six vertical cylinders, are nominally of 90-h.p., but will develop 150-h.p. at a speed of 1,200 revolutions per minute. The variable-speed gear is said to contain no gear wheels, and is actuated by a small lever on the steering wheel, which controls by hydraulic pressure a variable eccentric; any desired speed between zero and the maximum can be attained. One brake, brought into action by a button on the steering-wheel, is hydraulic, the other mechanical. Other new features will be found in the clutch, which is designed to run in oil, in the radiator, and in the road wheels and axles.

A Deeside Revolt.

THE advocates of the walking pace for motor vehicles in populous places are not meeting with success in every district. At the last meeting of the Deeside District Committee a recommendation of the County Road Board to the effect that the speed of automobiles passing through villages should be restricted to six miles an hour was rejected, Lieut.-Col. F. N. Innes, the chairman, pointing out that many an ordinary horse and carriage travelled at a higher rate of speed. Mr. Nicol thought it was a mistake to suggest a limit. He hated motor-cars probably as much as any man in that room, but recognised that the imposition of any limit under the speed of twenty miles an hour would simply assist motorists to get out of difficulties. By the Act as it stood, whether a motorist were

driving at twenty miles an hour or not, if he drove recklessly and negligently, or in a manner dangerous to the public, he committed an offence, and was liable to be penalised. If they imposed a limit of ten miles an hour in certain places they would have to take upon their shoulders the onus of proving that the motorist was driving faster than ten miles an hour. The motorist might say he was not driving faster than the ten-mile limit, and the result of the imposition of the limit would be to tend to reduce very much the responsibility of the driver.

More Motor 'Buses.

THE coming summer will see many changes in favourite tourist resorts throughout the United Kingdom, and motor-vehicles will ply for public hire on some of the popular routes in the Scottish Highlands. The Great North of Scotland Railway have just placed an order for several 20-h.p. Stirling's motor-omnibuses of special design, for delivery in March, to run, it is understood, between Ballater and Braemar. The interior of the vehicles will be handsomely furnished and fitted with movable windows. It is hoped the example of the Great North Railway will be followed by others interested in the success of numerous Highland coach routes. From Ireland comes the news that a company is being formed at Swords, co. Dublin, for the purpose of establishing a motor-bus service between that place and the city of Dublin. It has been decided to run a car capable of conveying twenty passengers three times each way daily between Dublin and Swords, and also to supply motor-cars for goods traffic.

Railways and Cars.

WITH reference to the subject of the conveyance of motor-cars by rail, raised by Mr. Instone in our columns last week, some dealers in automobiles have found it more economical to send vehicles by rail at owner's risk, and insure them at Lloyd's. It is a point upon which some information might usefully be given by firms who have had experience in this direction, and it might be well if the Automobile Club would arrange for a discussion on the subject at an early meeting, this being one of the topics of current interest to all motorists.

A Club for York.

LAST week we chronicled the formation of an automobile club for Berkshire; now comes news of a similar organisation, being formed in the ancient city of York. Between thirty and forty gentlemen met at the Black Swan Hotel, York, to consider the advisability of forming such a club for York and district. Dr. Noel Hood presided, and the meeting was evidence of the interest taken in motoring in and around the city. The club will have its social side, but the main object is to look after the interests of those who enjoy the popular mode of locomotion. Dr. Angove and Mr. Hopkins were elected secretaries, Dr. Noel Hood treasurer, and a committee of eleven members was appointed. The club starts with a membership of forty, and will meet every fortnight at the Black Swan Hotel.

The Sheffield Club.

THOUGH the weather was far from promising, and the prospect of favourable roads equally discouraging, members of the Sheffield and District Automobile Club participated on Saturday in a successful non-stop run from the city to Newark, and back to Ollerton, a distance of fifty-four miles. Seven cars participated in the event, the start from Surrey Street shortly after ten o'clock being witnessed by an interested crowd. Four of the vehicles entered completed the run without a stop in the following order:—Mr. Benjamin Hind, 9-h.p. Clement; Mr. Evans, 12-h.p. Darracq; Mr. B. Shaw, 6-h.p. De Dion; and Mr. Pickford, 10-h.p. Wolseley. The roads throughout the route were in wretched condition owing to the recent rains, water and mud being plentiful enough to put the cars to a severe test.

**A
Lincolnshire
Motorist.**

CAPTAIN H. E. NEWSUM, who is shown in the accompanying illustration on his Richardson car, is a member of one of the oldest and best known Lincolnshire families. He is a partner in the firm of Newsum and Sons, timber merchants, of Gainsborough and Lincoln, and is the son of one

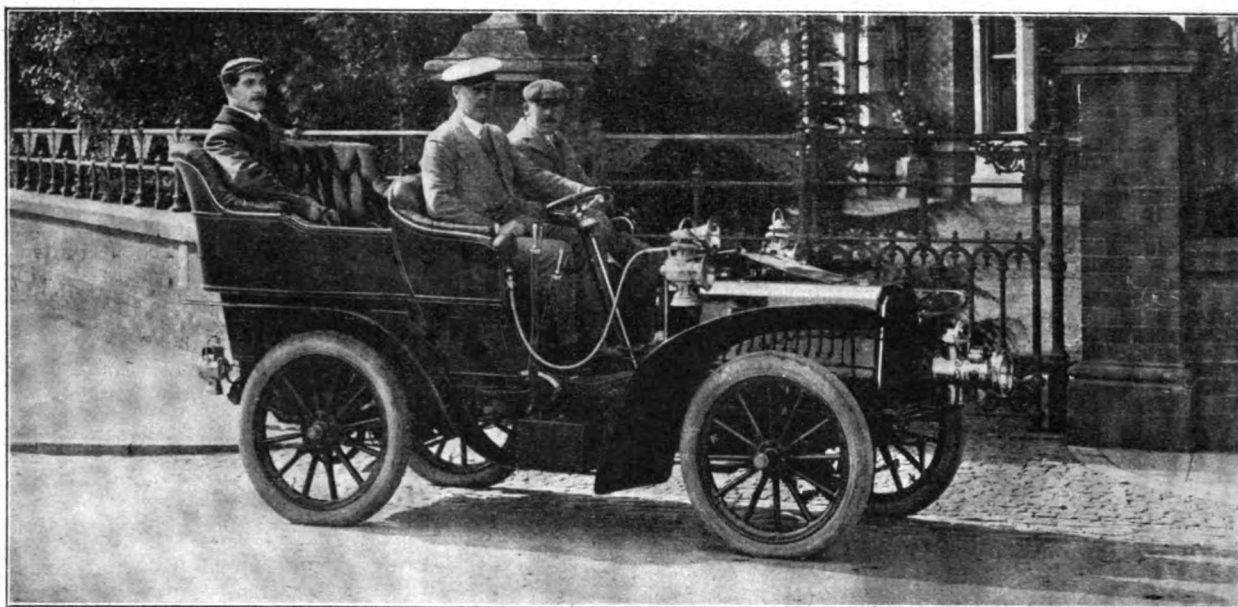
hazard labelling which has been ordered by the Local Government Board. We have to take the Act as we find it and to accept it as the wisdom of the community.

**A Fair Trial
Wanted.**

It is to be hoped that, from the outset, motorists will comply with the regulations in a fair and honest way. Already sufficient harm has been done to the progress of automobilism by the inconsiderate and reckless conduct of a small minority of drivers; the motorist who has raced through villages and scorned the warning police signal has brought hardship and annoyance upon the whole race of motorists. It is to be hoped he will curb his fancy and let his car run at a proper speed, regarding the lives and comfort of pedestrians with something like human concern.

Register at Once.

THERE should be no delay in registration and licensing, so that the police may recognise the desire of motorists to fall in with the new order of things. After all, the Act is only to be enforced for three years, and, should the con-



Capt. H. E. Newsum on his "Richardson" Car.

of the directors of the well-known firm of Marshall, Sons and Company, Limited, of Gainsborough. Captain Newsum has been for many years an enthusiastic volunteer, and when, a few years ago a call was made for volunteers for active service, he went out to South Africa in charge of the first volunteer company from Lincolnshire. Having rendered service with distinction for about twenty months, upon his return he was presented with the freedom of the city by the Lincoln Corporation.

**The Act in
Operation.**

THE anticipations of motorists have been realised and the Motor Car Act is now in operation. Automobiles will appear in the streets with all the glory of numbers and letters, mystic symbols *caviare* to the ordinary public, but indicating a train of thought between motorist and policeman which may cause these two features of modern life to appear in the same police court—but at opposite corners thereof. It is too late to revive the suggestion that the process of identification would have been facilitated had the first two letters in the name of the counties been accepted as the index letters instead of the hap-

version of public men to motoring pursuits continue to proceed as rapidly as it has done during the past three years, there should be no fear of the future. There is no doubt that when revision does take place some of the hardship of the present position will be reduced, if not cleared away altogether.

First Registrations.

News of the first registrations in various counties continue to reach us. In the county of Waterford, the Marquis of Waterford's car was the first registered; Mr. E. C. James, of Knockdrum Castle, Mullingar, was No. 1 in the county of Westmeath; in Haddingtonshire, Dr. J. B. Ronaldson, of Ennerdale, Haddington, is L.S.1. In Newcastle-on-Tyne the first car to be registered was that of Mr. W. Dunn, of College Road, Newcastle, whose number is B.B.1. Away in Wales, Mr. Gwilym Evans, of Llanelly, was the first to register a motor-car in Carmarthenshire, while Mr. D. E. Stephens, of Trawsmanor, Carmarthenshire, was the first motor-cyclist. Mr. G. A. Alderson's registration, noted last week, was for the borough of Northampton, not the county.

An Addendum.

FOLLOWING the order of the Local Government Board under the Motor-car Act, 1903, already published in our columns, an Addendum has now been issued to the Councils of Counties and County Boroughs, emphasizing some of the provisions of the Act, and the regulations made in connection therewith. The schedule of Index Marks, it is pointed out, has been prepared in concert with the Secretary for Scotland and the Local Government Board for Ireland, and it has been arranged that no use shall be made by English and Welsh registering authorities of the letters G, I, S, V, or Z, the letters G, S, and V being intended to be distinctive of Scottish, and the letters I and Z of Irish registering "societies."

Notice Boards.

WITH regard to the restriction of speed, the Board advise local authorities to be modest in their applications for such powers, as their execution will involve both trouble and expense. The characteristics and number of any such notices are left by the Act to the discretion of the Councils. It is clear, however, that it is desirable that there should be some degree of uniformity in the kind of notice which may have to be exhibited for the above purpose, and it would be well if the authorities concerned, through the medium of central associations or otherwise, were to endeavour to arrive at some agreement on the subject. It is suggested that in the case of any villages to which the ten miles an hour limit of speed is made applicable, it might be sufficient, as a rule, if the notice board were of a distinctive colour and bore upon it in conspicuous letters on the side visible to motorists approaching the area within which the speed limit is imposed a statement to the effect that the rate of speed is to be reduced to ten miles an hour within the limits or place briefly described on the notice board. The other side of the board might be indicative to drivers coming in the opposite direction of the conclusion of the restriction.

More Regulations to be Issued.

ON Wednesday we received an intimation from the Local Government Board that "a draft of the new regulations relating to the use of and construction of cars had been sent to a limited number of motor associations and persons for their observations, but has not been issued for publication." It is generally understood, however, a motor-car will be defined as a vehicle propelled by mechanical power which is under three tons in weight unladen, and is not used for the purpose of drawing more than one vehicle (such vehicle with its locomotive not exceeding in weight, unladen, four tons), and is so constructed that no smoke or visible vapour is emitted therefrom except from any temporary or accidental cause. If the car exceeds in weight, unladen, five cwt., it will have to be capable of being so worked that it may travel either forwards or backwards.

Lamps.

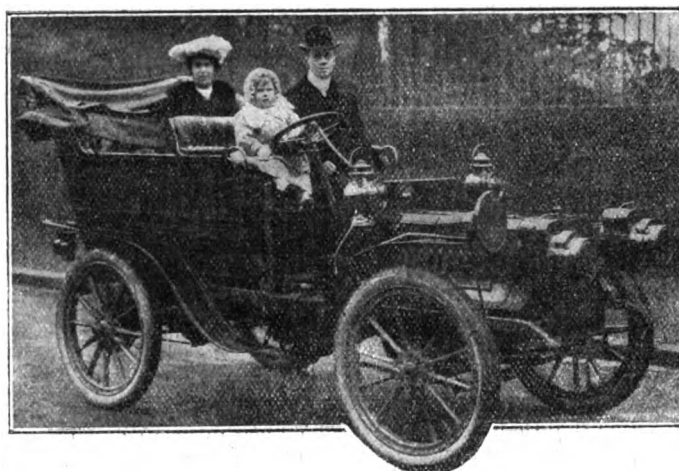
THE regulations as to lamps will provide that if the lamp carried by the motor-car, when the vehicle is in use on a highway at any time during the period between one hour after sunset and one hour before sunrise is so constructed fed, and used as to exhibit a light of an intensity or brilliancy likely, by reason of its dazzling effect, to cause danger, annoyance, or impediment to any person whom the motor-car may meet or pass on the highway, the motor-car shall also carry such means and appliances as are suitable and readily available for the prevention of any such danger, annoyance, or impediment as aforesaid. The driver shall, at all times when occasion requires, use promptly and effectively the said means and appliances, and shall otherwise take all such steps, and observe all such precautions as may be necessary for the prevention of danger, annoyance, or impediment in the circumstances and from the causes above referred to.

Tyres.

A CONCESSION to motorists with regard to the width of automobiles may also be expected. Hitherto this has been limited to six and a half feet. This will probably be increased to seven feet two inches. Where the car is less than a ton in weight unladen the width of the tyre shall not be less than two and a half inches; where the weight is between one and two tons the width of the tyre must be not less than three inches, and where the weight is between two and three tons, the width is to be not less than four inches. Of course these conditions will not be applicable where pneumatic or other tyres of a soft or elastic material are used.

A Directory of Numbers.

IN a few days the new regulations will be placed on sale, and motorists will then have to study the details for themselves. Meanwhile we shall be glad to have early advice of any summonses issued under the new Act, so that the proceedings may be fully reported, and no point upon which any decisions may be given shall be missed. In this connection, too, we propose to compile a Directory of Numbers, which will prove useful as some index to the actual number of automobiles in use in this country. So that this may be compiled with accuracy and fulness, we invite readers who have registered cars to send us names, addresses, and numbers without delay, and where such intimations are accompanied with the opinion of the writer as to the new Act, they will be all the more welcome.



Mr. A. E. Major on his 20-h.p. Talbot Car. His little daughter, a future Chauffeuse, at the wheel.

Dangerous Southwark.

REPLYING to the London County Council, which asked where sign-posts denoting corners dangerous to motor-cars should be erected, the Southwark Borough Council state that, in their opinion, "the whole of the borough is dangerous for motor-car traffic." Under such circumstances the Council should at once consider the matter with a view to bringing the borough into a safe condition for a class of traffic that is being recognised as the most suitable method of locomotion in the future. This particular London borough is not the residence of the wealthy, and we do not give prominence to the subject in the interests of those to whom automobilism is merely a pastime. It must be remembered that the district is an industrial one and that the work of its manufacturers and shopkeepers would be facilitated by the adoption of speedy motor traffic. Hence the removal of the reproach that Southwark, being "dangerous" to motorists, should be advocated in the interests of all concerned in the welfare of an important as well as an historic part of the metropolis.

"An Asinine Act."

APPARENTLY the Town Clerk of Southwark has strong opinions on the subject—if the strength of his adjectives is any indication of his inner thoughts. For he says that the new Motor Car Act "is a most asinine Act so far as the densely populated London boroughs are concerned, and how can we, or say Westminster, make up a list of dangerous places? Just imagine what the Act would mean in practice. Why, the 'Elephant' would have to be painted red; every spot there is dangerous. All our streets are important and busy thoroughfares, and quite unfit and unsafe to allow motors to go racing through them at twelve or twenty miles an hour." We agree that the streets of South London are unfit for racing purposes, but would emphasize our opinion that they should be made safe for motor-car traffic.

**Protest
Wanted
at Ealing.**

WE understand that the Borough Council of Ealing has applied to the Local Government Board for a regulation limiting the speed of motor-cars passing through that suburban district to ten miles an hour. Seeing the importance of some roads through Ealing, we trust that the Board will exercise its discretion in considering this request. Fortunately motorists themselves have an opportunity to influence the powers that be, and notice of objections to this regulation should be sent in writing to the Local Government Board at Whitehall on or before the 12th inst. The same should also be sent simultaneously to the Town Clerk of Ealing. Owners of motor-cars have thus an early opportunity of putting the friendship of the central authorities to the test, and, at the same time, conferring a boon on their fellow motorists by protesting against the limitation of speed in a place which cannot be called "dangerous," in the sense that Southwark regards itself.

**Motor-cars at
Waterworks.**

BOROUGH surveyors, tramway plant inspectors, and others engaged in the details of local government are beginning to regard the motor-car as an essential part of their equipment. In rural districts its value is being daily demonstrated, and in urban localities there is no reason why it should not prove economical as well as efficient in use. Mr. Batley, the waterworks engineer of Oldham, is also desirous of putting its powers to a practical test, and, at the last meeting of his committee, reported that the horse which he had hitherto employed for business purposes would soon be unfit for work so far as hill-climbing was concerned. Consequently, he asked the committee to consider whether it would not be better to substitute an automobile for his horse and dogcart. The suggestion came somewhat as a surprise to the members of the committee. Immediately they began to give experiences, mostly, however, second-hand, and therefore, of little utility to the main purpose of the discussion. One councillor had seen men in charge of a motor-car stopped for four and five hours at a time repairing it, while the Mayor had been informed that such a vehicle would cost £5 per week for maintenance. After much discussion it was decided that the waterworks engineer should make enquiries as to the cost of a motor vehicle and report to a future meeting of his committee.

**Technical
Instruction
for Drivers.**

WE have previously drawn attention to the new venture on the part of the Battersea Polytechnic in conducting special classes for the training of motor-car drivers and attendants. The course has been very successful, over thirty students having entered. Each student has attended two classes a week for a term of thirteen weeks, the instruction given including lectures and drawing and practical work in the work-

shops, where motors have been examined, taken to pieces and assembled and put in running order; tyres taken off and replaced; gear boxes taken to pieces and put together and various small repairs made, the students working individually. Different examples of cars have been examined and handled by the students, the course ending with an examination, written and practical, of a thoroughly searching character, certificates being awarded to successful candidates. Owing to the kindness of Sir George Newnes, Bart., in lending a car, the students have been afforded the opportunity of taking driving lessons on a 20-h.p. four-cylinder Darracq car, a certificate being awarded after a proper test. Mr. Mark Mayhew, Mr. Windham, Messrs. Friwell, and the Vauxhall Ironworks have shown their interest in the classes by lending cars for demonstrations and other ways. In admitting students, preference is given to those desiring to become professional drivers. It is the hope of the Polytechnic to be able to assist persons holding its certificates to obtain posts as drivers, and, as will be seen from our advertisement columns, they are prepared to send a list of their certificated students upon application. The governors are about to purchase a car for use in demonstrations and for lessons in driving, and the next course for new students will commence on Monday next.

**The Motor-Car on
the Stage.**

AGAIN at this season of the year we are reminded that the novelty of the motor-car has not entirely worn down. It appears in some of the leading pantomimes, amuses the audience at the London Hippodrome, and has its place on the theatrical posters which adorn the hoardings. Those responsible for the prominence of the automobile on the stage seem to recognise more than they did that the motor vehicle has got beyond the playful stage, and that its stubbornness is no longer a fit subject for ridicule. As a matter of fact the leading mimes are motorists in everyday life and appreciate its utility too well to make it the topic of idle jest. The process of education is making headway on the "boards" as well as in the Commons.

WE learn that up to mid-day on the 31st ult. between 1,600 and 1,800 automobiles had been registered by the L.C.C.

MR. MARCONI, of wireless telegraphy fame, has been using his new 12-h.p. Napier in the New Forest almost continuously during the holidays.

AMONG the vehicles seen running about with numbers on during the closing days of the old year were A 21, B F 18, B Y 71, A 971, an electrical vehicle, A 1271, etc.

THE Highways Committee of the Surrey County Council has decided not to schedule any ten-mile an hour speed roads, a decision which does not, however, bind the borough councils within the area.

LAST week a 40-h.p. Mercedes and another car were travelling in opposite directions over the Hog's Back when by some means they collided, both cars being overturned and wrecked. Fortunately the occupants, among whom were some ladies, escaped injury.

THE Earl of Sefton had an unpleasant experience on Monday while motoring near Nantwich. His driver took the wrong turning, the car mounted a bank, and was overturned. His lordship was bruised and cut about the face and eye, and, as the car was badly damaged, he had to proceed home in another conveyance.

AT the Newington Sessions, before Mr. M'Connell, K.C., the grand jury has quashed the indictments against Mr. Frank Colliard, of 49, Westminster Mansions, Great Smith Street, Westminster, for wantonly and furiously driving a motor-car and causing bodily harm to William Headhouse, at Balham High Road. The accused was accordingly discharged.

The Paris Motor-Car Exhibition.



[CONCLUDING NOTICE.]

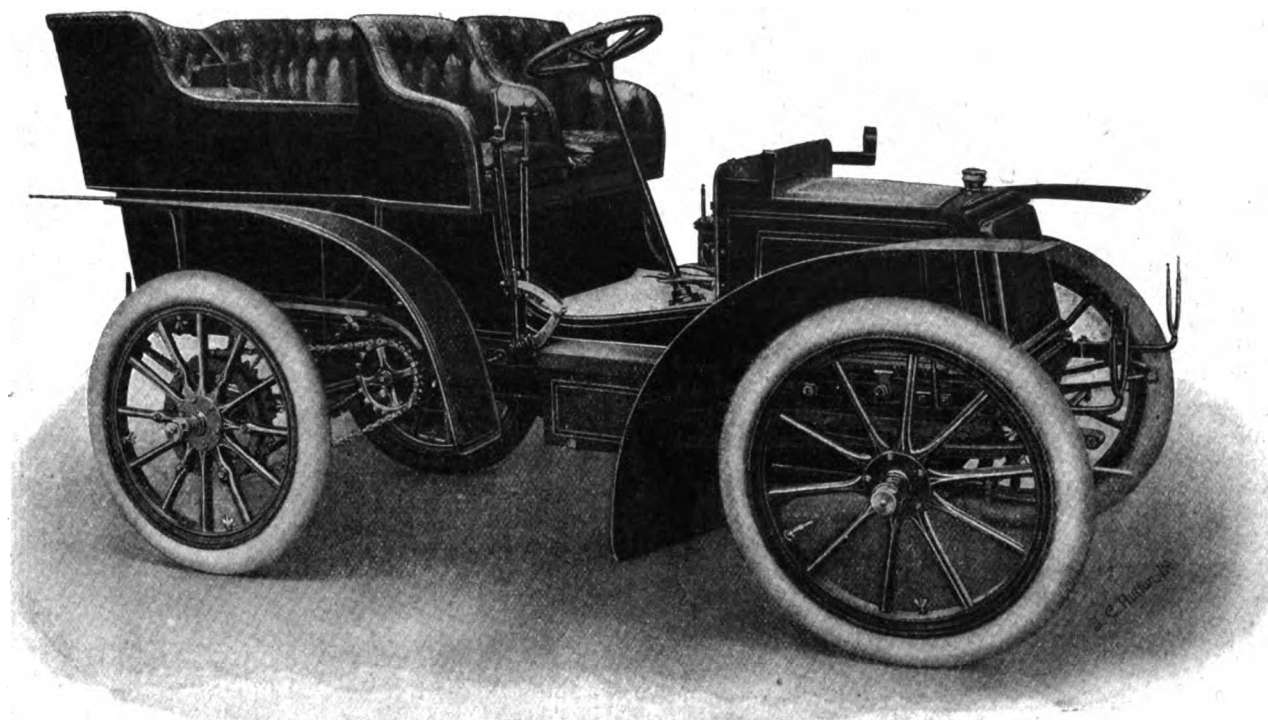


Fig. 43.—The Panhard 8-h.p. three-cylinder Car. (See page 804, issue December 19th, 1903.)

THE sixth annual International Salon in Paris finally closed its doors to the public at 11.15 p.m. on Christmas night amidst a display of fireworks and Bengal lights. Early next morning the work of destruction began and by Monday evening last there remained but few signs in the Grand Palais of the magnificent display of motor-cars, boats, and accessories it sheltered for three weeks. On Saturday night the A.C.F. at its club-house in the Place de la Concorde gave a banquet to the exhibitors in commemoration of the successful termination of the show. About 250 sat down to dinner and a very enjoyable evening was spent.

Probably the most popular Serpollet steamer during the 1904 season will be the 15-h.p. car, which has been put through its paces in recent competitions. The engine comprises four cylinders set opposite to one another in pairs, the valve seats being located in the heads of the cylinders. The number of elements in the boiler has been increased with the view of rendering the steaming capacity equal to the requirements of the most hilly road. The frame is of the pressed steel variety. Quite a new type for the Gardner-Serpollet Company is the 9-h.p. "Simplex" steam car, which has a water capacity sufficient for a run of 200 kilometres. The frame is of channel steel, the boiler at the rear being placed lower than usual. The engine is a four-cylinder one. Automatic pumps have been discarded, the water pump being actuated by an eccentric and rod from the rear axle. One lever controls a combined water and fuel distributor. The weight of the 9-h.p. chassis is between 12 and 13 cwt. Other exhibits included a steam delivery van, a hotel 'bus, and a 15-h.p. double phaeton, the latter being intended for the Shah of Persia.

A new popular priced two-seated car was shown by M. A. Christophe. At first I took it to be a French car, but closer inspection proved it to be the production of the Albany Manufacturing Company, of Willesden Junction, which has thus to

be added to the list of English exhibitors. The car is fitted with a single cylinder slow-running horizontal engine of 10-h.p., placed in the fore part of the channel steel frame. Two speeds forward and reverse are provided. The car comprises a number of special features, to which reference may be made in a subsequent issue.

Another car which comprises a number of interesting features was the 18-h.p. four-cylinder Chenard-Walcker, the British agency for which is held by the Weston Motor Syndicate, Limited. The engine is provided with mechanically-operated inlet valves located on the opposite side to the exhaust valves; a characteristic point of the motor is the peculiarly-shaped cam, by means of which not the lift, but the duration of the time the inlet valves are kept fully open, can be varied, and the speed of the engine consequently controlled. A novel form of automatic carburettor which furnishes a quality of mixture to correspond to the engine speed is used; this comprises a compound valve, part of which regulates the supply of air and the other portion the supply of petrol. As in the Georges Richard cars, the water-circulation pump has been discarded in the 1904 Chenard-Walcker, the thermo-syphon system in conjunction with a honeycomb radiator being relied upon. The latter comprises no less than 2,025 tubes, which, instead of being of the usual shape, are squared at both ends for about three-eighths of an inch, when the sections become narrowed in diameter and fluted, this being achieved by passing them through a corrugating machine. The water is thus split up into a series of minute columns, the cooling surface representing an area of 90 square feet. Magneto or high-tension ignition, with a chain-driven commutator on the dashboard, can be fitted. The special combined clutch and brake is still retained, as is also the Chenard-Walcker transmission, in which, it may be remembered, the power is transmitted through a cardan shaft to a differential shaft below and parallel with the rear axle. On the ends of the differential shaft are pinions

meshing with internally-toothed rings attached to the rear road wheels. The governor can be set to act at any desired speed from the steering wheel, a pedal accelerator cutting out the governor, no matter at what point this is set to act. The Chenard-Walker has a record for economy in fuel consumption, while the special control results in an exceedingly silent-running and flexible engine, it being claimed to be possible to run the car at any pace from $2\frac{1}{2}$ miles per hour up to the maximum on the top speed of the car.

Michelin's showed a new tyre, the feature of which is the non-slipping tread. Steel blocks flush with the rubber are moulded into the tread to prevent the edges of the latter wearing away. It is not claimed that they prevent side-slipping in themselves, Michelin's idea being that the width of the tyres prevents slipping, owing to the increased road friction. Of course, this can only be maintained by the flatness of the tread being kept up, which is the mission of the steel blocks. A tyre with a band fitted with steel rivets to prevent side-slip was also shown, as well as a tyre lever to enable the fixing bolts to be readily placed in position.

M. G. Fouillaron, of Levallois-Perret, again exhibited cars fitted with his special system of transmission by means of an articulated belt working on expanding and contracting pulleys. The system has already been described in the *Journal*, so that

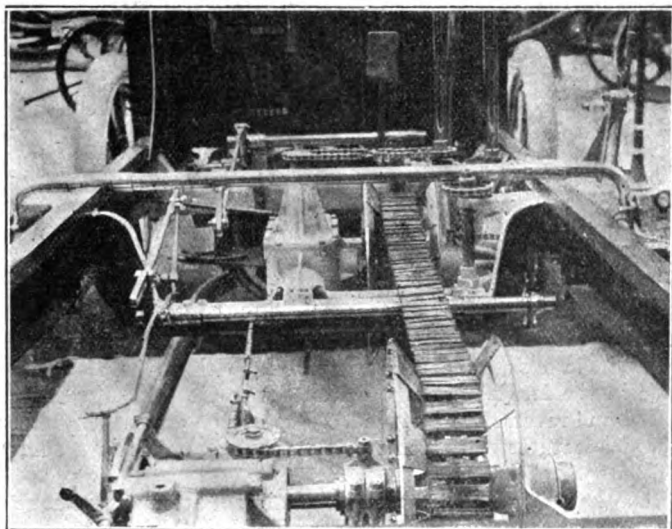


Fig. 44.—The Chassis of the Fouillaron Car, showing Expanding Pulleys.

it is unnecessary to refer to it here, beyond mentioning that a good idea of it will be obtained from the illustration (Fig. 44). It is being applied to cars of from 6-h.p. to 35-h.p., a chassis of the latter power being exhibited. This has all modern features, such as stamped steel frame, four cylinder motor, with mechanically-operated inlet valves, honeycomb radiator, etc.

The Compagnie Belge de Construction d'Automobiles, of Brussels, which is represented in England by the London Motor Garage Company, Limited, exhibited four Pipe cars, a 12-h.p. brougham of special design, a 20-h.p. car and chassis, and a 30-h.p. double phaeton. The engine comprises four cylinders with mechanically-operated inlet valves. Except as regards the clutch the Pipe cars follow the general lines of chain transmission vehicles. The clutch is of the Jenatzky magneto type, in which the engine is connected with the gear box by means of discs, which become magnetised and attracted one to the other when a current of electricity is sent through them. The current is furnished by a small battery kept charged by a dynamo driven off the engine, or it can be supplied directly from the dynamo. There is no possibility of slip with this clutch, which, with but a light pressure on the pedal, makes practically a solid connection between the motor and the gear shaft. The Pipe cars have already an excellent reputation both in Belgium and

England, and the fact that cars of this type are to represent the A.C.B. in the 1904 Gordon Bennett race will bring them into further prominence.

A name well known in the early days of the industry is revived by the exhibit of Messrs. F. Rossel and Company, of

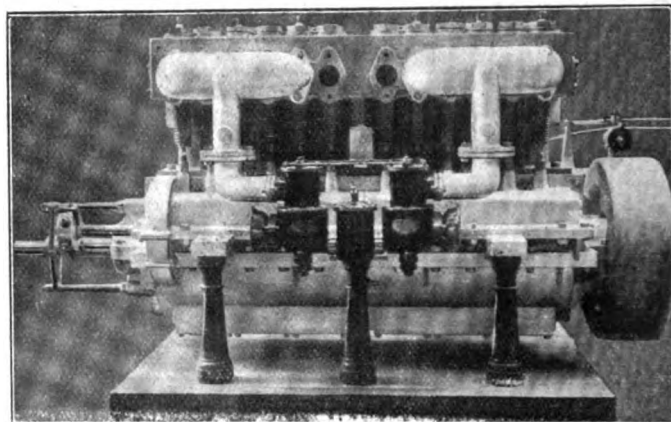


Fig. 45.—The Louet Six-Cylinder Engine. (See page 828 last issue.)

Sochaux (Doubs), who displayed a 22-h.p. four-cylinder car on modern lines. The water circulation on the Rossel car comprises a number of interesting features, not the least interesting of which is the provision in the water jacket of each pair of cylinders of an opening closed by a flexible fibre plate. In frosty weather any abnormal pressure due to the water freezing would, it is stated, cause these plates to break instead of cracking the cylinders.

At the stand of La Société des Moteurs and Automobiles Herald, of Levallois-Perret, I met M. Dubois, whose agility with a small Decauville car in the first 1,000-Miles Trials will long be remembered. The *piece de resistance* at the Herald stand was a 24-h.p. chassis, the frame of which is of stamped steel. A view of the four cylinder motor is given in Fig. 46, from which it will be seen that the cylinders are cast in two pairs, and that the inlet valves are actuated mechanically off the same shaft as the exhaust valves. The carburettor is provided with a device

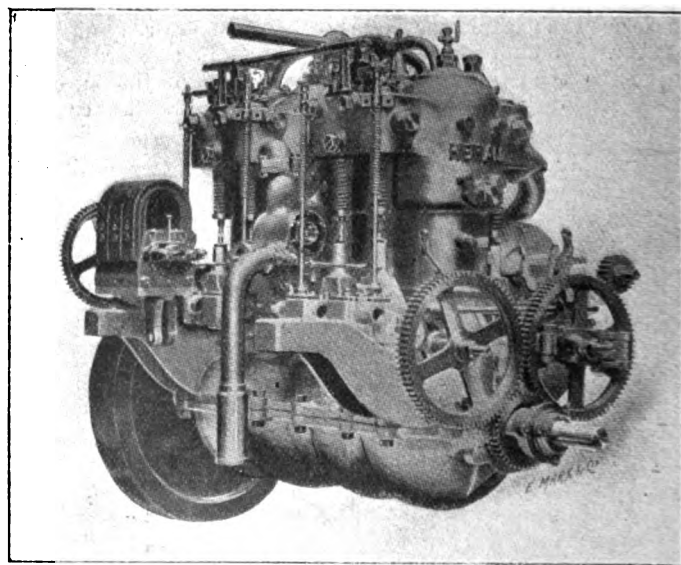


Fig. 46.—The Herald 24-h.p. Four-Cylinder Motor.

by means of which the supply of air is automatically regulated. The ignition is by magneto, while another feature to which attention may be drawn is the provision made for varying the lift of the inlet valves, and thereby regulating the speed of the engine.

Among the German cars exhibited were the Benz Parsifal cars of Messrs. Benz and Co., of Mannheim, the engines of which have mechanical valves, and the Adler cars of the Adler Fahrradwerke (Kleyer), of Frankfort-am-Main. The latter are made in 8 and 12-h.p. two cylinder, and 16 and 24-h.p. four cylinder types, all having honeycomb radiators and cardan shaft transmission.

The Ader Company had a very interesting display of cars, ranging from 9-h.p. to 24-h.p., some fitted with the Ader motor.

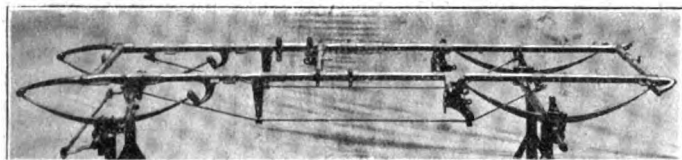


Fig. 47.—The frame of the Ader 9-h.p. Car.

with the cylinders set in the form of a V, and some with vertical engines. The frames, too, are either of tubular construction or of stamped steel. While being exceedingly strong, the tubular frames are very light, the rods seen in Fig. 47 adding greatly to the rigidity. The 9-h.p. two cylinder V-motor is illustrated in Fig. 49. The bore is 92 mm., the stroke 94 mm., and the normal speed 1,400 revolutions per minute. The cylinders, which are at right angles to each other, have mechanically-operated inlet valves, and the connecting rods work on to the same crank. The governor is mounted on the cam shaft, and is enclosed in the semi-circular case above the crank-shaft. The water-circulating pump forms part of the motor. It can be seen in the illustration below the crank-shaft, off which it is gear driven. The 18-h.p. engine is on similar lines, but comprises four cylinders. The vertical engine, which has been introduced to meet the demand for this type, is being made in two sizes, 12-h.p. double cylinder and 24-h.p. four cylinder, the bore being 100 mm. and the stroke 110 mm. The inlet valves are actuated off the same cam-shaft as the exhaust. An automatic air-regulating carburettor is provided. The transmission is by means of side chains, a direct drive being obtained on the third or top speed. The details are all of high-class design and construction, and the 1904 models should maintain the reputation for reliability earned by the Ader cars in Paris-Madrid. Some excellent examples of carriage building were to be seen on the

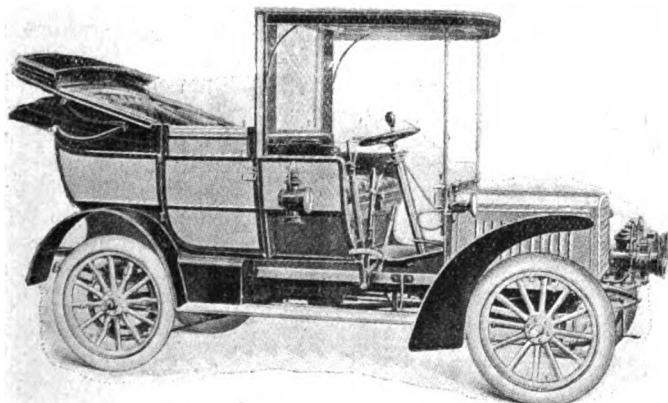


Fig. 48.—The Ader 15-h.p. Four-Cylinder Landaulet.

stand, one of which, a 15-h.p. four-cylinder landaulet, with side entrance, is illustrated in Fig. 48.

One of the most imposing displays was that of M. A. Clement, the maker of the Bayard cars, the new models of which have the credit of having been exhibited in England before being shown to the French public. It is hardly necessary to add that the Bayard cars are in this country to be known as the "Talbot," their sale being in the hands of the British Automobile Commercial Syndicate, Limited. A full description of the new

vehicles was given only a few weeks ago in connection with the report of the National Show at the Crystal Palace. I may, however, refer to the new 7-h.p. two-cylinder car. This has, like the other types of Bayard cars, mechanically-operated valves, cardan shaft transmission, three speeds and reverse; it appears to be well designed and constructed, and should, in view of its moderate price, quickly become a popular vehicle.

La Société des Automobiles Belgica have two new models of 12-h.p. and 16-h.p., both having four-cylinder engines with mechanically-operated valves all on one side. The frame is of stamped steel, while among the features of interest are the special adjustable connecting rod bearings and the lubrication of the motor, a constant level of oil being maintained in the crank chamber. Bolted to the side of the latter is a reservoir containing a float, which controls a needle valve in the top. The oil passes into this reservoir through a pipe, which is taken once round the exhaust pipe of the motor, so that the oil is warmed and thinned sufficiently to make it flow easily. The

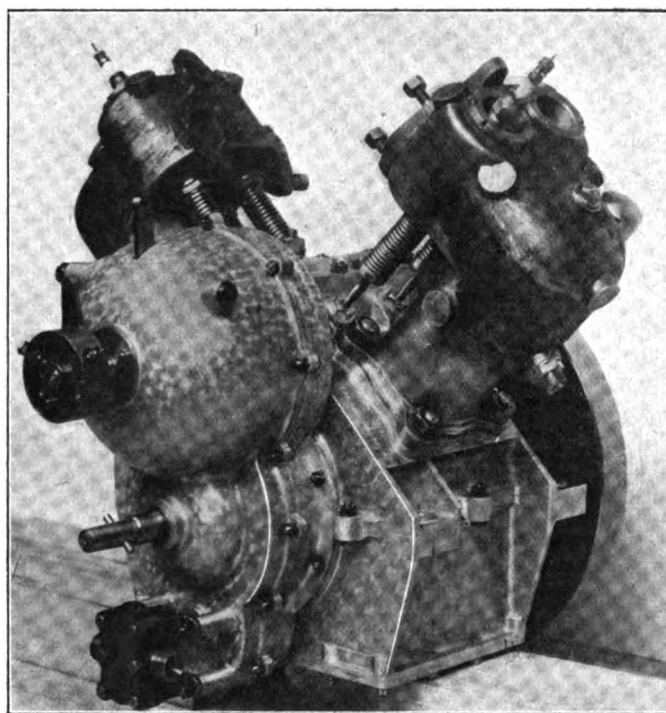


Fig. 49.—The Ader 9-h.p. Motor.

needle valve is set so that when the oil has attained its proper level the orifice in the top of the reservoir is closed. A short pipe connects the crank chamber and reservoir, and serves to maintain an equal air pressure in both. Bolted on the opposite side of the crank chamber is an ordinary gauge glass, in which the level of the oil in the crank chamber can be seen at a glance. The cars exhibited included a 12-h.p. limousine and a 16-h.p. landaulet, the engine in the case of the latter being located under the driver's seat.

Messrs. Henriod's exhibit attracted attention by reason of the novel arrangement of the change gear. Last year this was located at the rear end of the cardan shaft, the gear box and rear axle forming as it were a set by itself. The change gear, which gives three speeds forward and a reverse, is still at the rear, but is now mounted on the rear axle itself. The arrangement is certainly compact, but it remains to be seen how it will answer in practice, the general opinion being against increasing the weight to be carried by the rear live axle. Messrs. Henriod are making cars with engines of one, two, or four cylinders; the larger sizes, which range up to 24-h.p., having mechanically-operated inlet valves.

The Gobron-Brillié Company made an excellent display of 12, 18, 20, and 25-h.p. cars, the body-work of which was of the highest class. Quite a new idea in body-suspension was to be seen on a double phaeton, which by the builders, Messrs. Belvallette, is termed a *berceau*, the rear part, access to which was by side doors, being suspended on C springs. As for the cars themselves, the well-known Gobron motor, with its two pistons to

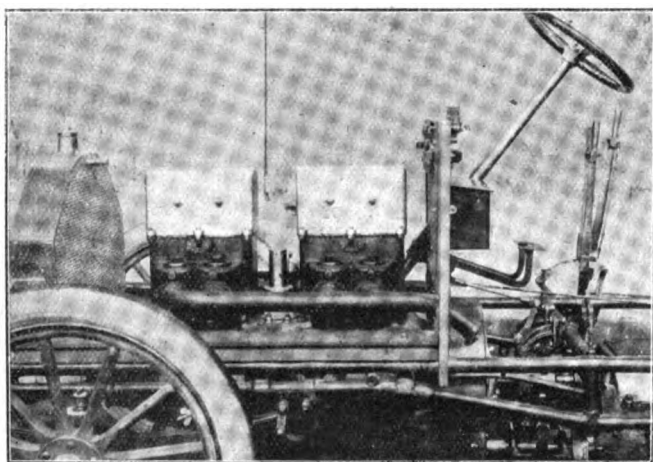


Fig. 50.—The Gobron-Brillié Motor.

each cylinder, is retained. For the majority of the cars the tubular frame construction is retained, but the 25-h.p. car has a frame of pressed steel. The four-cylinder engine, which has eight pistons, is now fitted with a jet carburettor, provided with automatic air-regulating device. The clutch is of new design, being practically in duplicate. The smaller one, which is metal-to-metal, engages first, followed by the engagement of the large one, the cone of which is leather-faced. Both clutches are controlled by the same pedal; the advantage of the arrangement is that the engine is put into gear without shock, while, to further reduce any strain on the gear-box, a universal joint is introduced between the latter and the clutch.

La Société des Automobiles Bardon confined their exhibit to a three-ton motor lorry, a class of vehicle to which they are

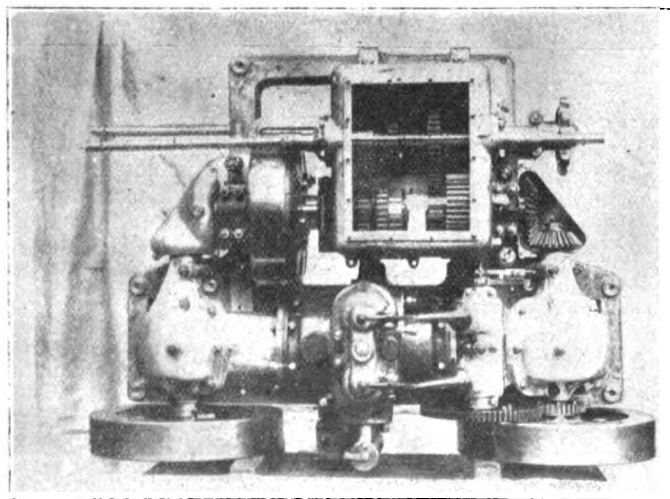


Fig. 51.—The Engine and Change Gear of the Bardon Motor Lorry.

now devoting much attention. Except that the engine is connected with the countershaft by a single centrally-located chain instead of through a cardan shaft and bevel gearing, the general arrangement follows the well-known Bardon lines. The motive power is supplied by a 8-h.p. horizontal engine, the explosion taking place in the centre of a long cylinder, forcing out two pistons in

opposite directions. The two crank shafts drive through bevel gear on to a shaft parallel with the cylinders: on this shaft is mounted the clutch and the change speed gear, forming, as will be seen from Fig. 51, a very compact set. Three speeds and a reverse are provided, the maximum being eight miles per hour.

An ingenious form of clutch is used on the cars of the Société l'Automotrice, who are making two sizes, 12 and 20-h.p., both with four cylinders, mechanical inlet valves and magneto ignition. The flywheel is made with arms which act as a fan to draw a current of air through the radiator. The coil clutch is somewhat on the lines of the Mercedes, but is actuated in a novel way, the coil on the clutch shaft being tightened by means of a pedal-actuated leather cone, which can be brought into engagement with the flywheel. It is only when the leather cone is rotated by the flywheel that the coil is tightened on the shaft, and the power of the engine transmitted to the gear box. A special form of internally-expanding band brake on drums connected with the hubs of the rear wheels forms another feature worthy of notice in the Automotrice cars.

Starting some years ago with a car on lines of its own Messrs. Brouhot and Company, of Vierzon (Cher), have steadily progressed towards the standard arrangement. Notwithstanding this the Brouhot cars on examination were found to comprise a number of special features. Taking the 20-h.p., of which the frame is being made sufficiently large to accommodate a body having side entrances, this is fitted with an engine, the four cylinders of which are cast in two pairs. All the valves, both inlet

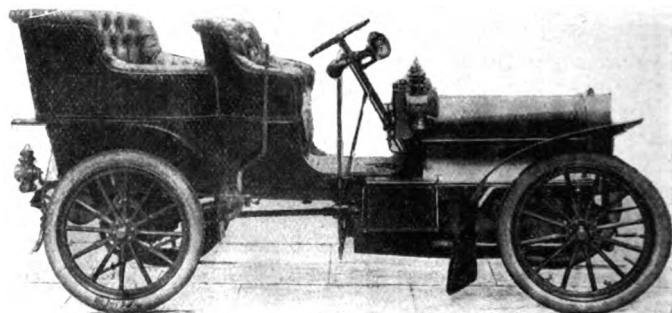


Fig. 52.—The 16-20-h.p. "Argyll" Car shown at the Paris Salon.

and exhaust, are mechanically actuated off one cam shaft, and are consequently on one side of the engine. The carburettor is Messrs. Brouhot's own design and provides for the automatic regulation of the air in order to give the correct mixture at any or all speeds. Pump circulation is adopted in conjunction with a honeycomb cooler and tank, through which a current of air is drawn by a belt-driven fan. The transmission is by side chains, the drive on the top speed being direct. An ingenious form of friction clutch is employed to connect the engine with the gear box. The Brouhot four-cylinder cars, which are being made in sizes ranging from 12 to 40-h.p., are not yet known in England, but I understand that arrangements are in hand for their introduction.

For the 1904 season Les Cycles Clement are making four types of cars—9-h.p. two cylinder and 9, 12, and 16-h.p. four cylinder—the largest size having a chain drive. In the others the cardan shaft system of transmission is adopted. The engines have mechanical inlet valves and a special carburettor, in which the automatic regulation of the air is obtained in an exceedingly simple manner, no springs or diaphragm being employed. The exhaust pipes lead first to a kind of collecting chamber, where they expand ere passing to the silencer. A ribbed pipe radiator set in a frame is this year being used in place of the honeycomb type. Special attention has been paid to the brakes, a simple and useful spring device being provided to keep the band off the drum when the brake is not in use. The cars are being made with frames sufficiently long to take bodies with entrance to the rear seats at the sides.

Messrs. Montauban and Marchandier, of St. Quentin, France, whose name is well known in connection with the manufacture of change-speed gears and other automobile components, have now taken up the construction of two and four cylinder engines, to which they have given the name "Vautour." The motors illustrated in Figs. 53 and 54 have inlet valves mechanically actuated off the same cam shaft as the exhaust valves. The

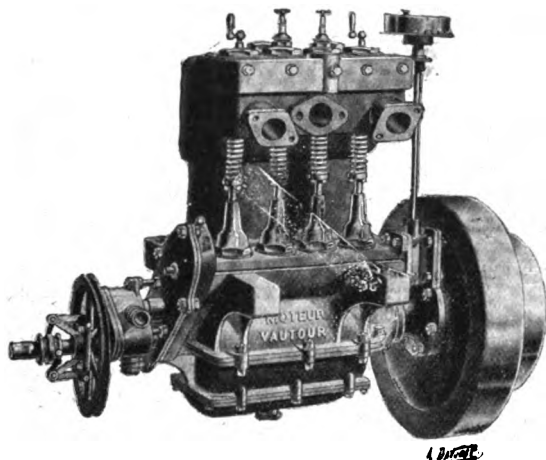


Fig. 53.—The Vautour Two-cylinder Motor.

bearings are all furnished with phosphor bronze bushes, while the contact maker is located at the top of the engine, being driven through bevel gearing. The engines are provided with gear driven pump, centrifugal governor acting on the inlet, and double silencers.

The Société des Camions Automobiles Hagen showed a 12-h.p. Hagen lorry. On inspecting this I find that it has been considerably improved since described in the *Journal*; while the special system of transmission is retained. A two-cylinder vertical petrol engine is now employed. The lorry is intended to carry a load of four tons on level roads, or three tons in hilly districts, the speed ranging up to eight miles per hour. The lorry weighs, ready for the road, three tons, and is 18 ft. long.

For 1904 Messrs. Boyer and Company are making ten different cars, ranging in power from 6-h.p. to 24-30-h.p. The latter is fitted with an engine having four separate steel cylinders, with copper water jackets and mechanically-operated inlet valves. While the *Salon* was not very prolific in the way of

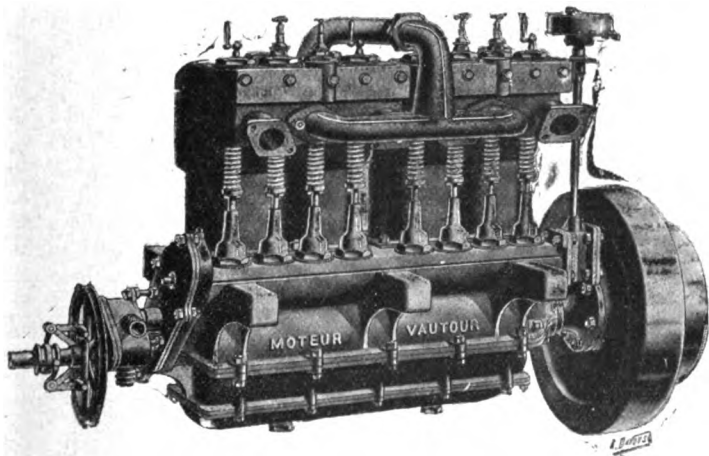


Fig. 54.—The Vautour Four-cylinder Motor.

small popular-priced cars, there were one or two excellent examples, amongst them being that of Messrs. Gregoire and Company, of Poissy. It has a pressed steel frame, 5-h.p. motor with mechanical inlet valve, two speeds forward and a reverse, and transmission by side chains.

Although since the death of M. Buchet not so much had been heard of the engine that bears his name, arrangements

have now been made for the carrying on of the works. The motors are being made with one, two, and four cylinders, and in sizes from 2 to 70-h.p., some excellent specimens being shown. A good display of Aster engines was made by Les Ateliers de Constructions Mécaniques Aster. The new models comprise a two cylinder and a four-cylinder engine with mechanical inlet valves. The cylinders are cast in pairs. The valves are all identical, and a new governor has been adopted, operated

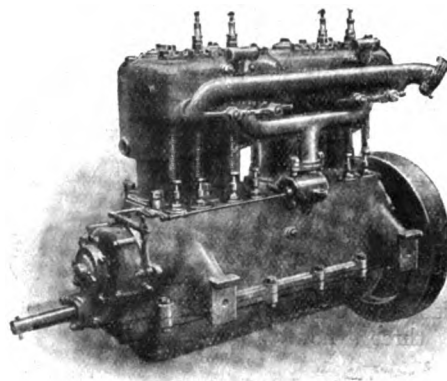
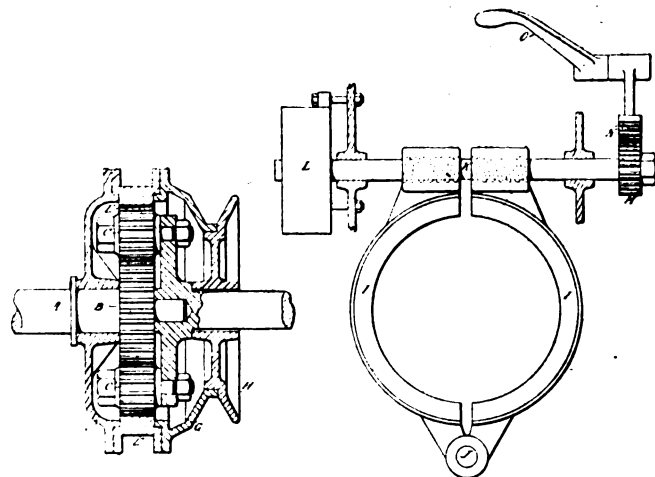


Fig. 55.—The Aster 16-20-h.p. Four-cylinder Engine.

from the end of the valve shaft and controlling a sliding throttle on the inlet pipe from the carburettor. A new arrangement by means of which all the inlet and exhaust pipes can be detached from the cylinder, by the unscrewing of only four nuts, make the operation of repairs or replacement to these parts a very simple matter.

The cars of the Société des Etablissements Hautier are interesting from the many departures from standard practice they comprise. Two types—10-h.p. two cylinder and 20-h.p. four-cylinder—were shown. The valves were placed on opposite sides of the cylinders, and are all mechanically operated. The flywheel is located in front, and is adapted to serve as a fan to draw a current of cold air through the radiator. One of the striking characteristics of the vehicle is the clutch, which is essentially a planetary gear, transmitting the power from the motor to the change-speed gear box, and at the same time reducing the speed. Referring to Figs. 56 and 57, which give two views of the clutch, on the motor shaft A is keyed a spur wheel B



Figs. 56 and 57.—Sectional and End View of Hautier Clutch.

in mesh with the pinions C C' loosely mounted on studs fastened to projecting arms on the shaft D. The pinions are also in mesh with the internally-toothed ring E. The pieces E, F, G, H are bolted together to form a case for the gears, the parts F and H being loosely carried on the shafts A and D respectively. G forms with H a V-shaped groove, in which a band-brake can be applied.

When the gear E is locked in position the pinions C C' are caused to roll on the internal gear E, and thereby produce a reduced motion of the shaft D, in the ratio of one in five to the speed of the motor. The clutch brake consists of two V-shaped blocks I pivoted at J; their upper parts are traversed by a rod K, which has a right and left handed thread. At one end of the rod K is fastened a strong spiral spring contained in an adjustable box L, while upon the other end of the rod is keyed a pinion M in mesh with a toothed section N. The spiral spring maintains the blocks applied, and the motor is then in gear with the transmission. When the driver depresses the pedal O the rod K turns, spreads the blocks, and thus releases the clutch, and so disconnects the motor from the transmission. The advantages claimed for this device are that with it the speed change-gear wheels may be of small diameter, and the two bevel gears which convey the power to the rear live axle of equal size.

The Gladiator Company had three new models on view—9-h.p. double-cylinder and 14-h.p. and 18-h.p. four-cylinder. The honeycomb radiator has been abandoned in favour of one of the ribbed-pipe variety set in a neat frame. The transmission is by side chains, and among the several noteworthy features may be mentioned the carburettor, in which the quality of the mixture is automatically made to correspond with the requirements of the engine at all speeds, and this without the use of any springs or diaphragm; a branch from the admission pipe is brought to the top of a weighted valve, which is lifted to a height corresponding to the suction of the motor, and more or less air correspondingly admitted. The pump is friction driven, the leather-faced wheel being enclosed and protected from mud, except at the point of contact with the flywheel. The pump itself is mounted on a pivot and held to its work by a spring. The rear brakes are provided with a simple device which holds the bands off the drums when not in use.

La Société Mors are making no less than eight different types of four cylinder cars, viz., 8, 12, 14, 15, 19, 24, 30, and 40 h.p. The 24-h.p. is a new model, with a stamped steel frame. The motive power is supplied by a four cylinder engine having the mechanically-operated inlet valves on the opposite side to the exhaust valves. The carburettor is provided with both hand and automatically-regulated air inlets. No governor is now used, but to prevent "racing" the throttle valve is so connected up to the clutch pedal that as the clutch is withdrawn the throttle is partially closed. A lever on the steering wheel also acts on the throttle. The water-circulating pump is driven by bevel gearing off the cam-shaft. A framed ribbed-pipe radiator is used, ai-

being drawn through the same by the arms of the flywheel, which are made to act as a fan. The magneto ignition has been improved in so far as the speed at which the magneto works has been reduced to that of the motor itself, enabling the number of parts to be diminished and securing quietness in operation. A special form of clutch is employed, while the shafts in the gear box and the differential run on ball bearings. The cars exhibited comprised some excellent specimens of side-entrance vehicles, a coupé with special suspension being particularly noteworthy.

An interesting display was made by M. Prosper Lambert, of Nanterre, who, in addition to his 8-h.p. and 12-h.p. cars, has brought out a new 9-h.p. single-cylinder vehicle. In all, the cardan shaft system of transmission is adopted. Among the

features of these vehicles is a governor acting on the inlet valve in such a way that as the speed becomes excessive an additional supply of air is drawn in. Another interesting detail is the contact maker, which can not only be quickly detached but readily adjusted. The trembler blade is held in a groove in a stud which is free to revolve slightly. The blade extends beyond the stud, its upper end coming between two milled-edged screws which bear against it. These screws can be turned one way or the other until the adjustment is perfect.

The two well-known lamp firms, Bleriot and Ducellier, occupied prominent positions at the two central opposite points of the main gallery, and, by a kind of *entente*, lighted up one another's stand, notwithstanding the distance which separated them, by powerful head lights. Messrs. Bleriot had on view a new acetylene lamp, in which cartridges of acetyloid are used, while a novelty was a combination lamp and horn. Messrs. Ducellier had an improved generator and a new acetylene head light, in which, by an ingenious arrangement of reflectors, full advantage is taken of

all the rays of light. Electric and paraffin lamps are also made.

M. Rousseau, of Neuilly, showed a device which will be appreciated by those who motor in winter as well as in summer. By opening a valve the hot gases from the exhaust can be carried through a series of tubes which line the driver's footboard and the inside of the body of the car. One of the interesting exhibits to engineering visitors were the aluminium engine cylinders with cast iron liners shown by La Société des Moteurs Légers (Baltzinger and Company) of Valdore-Belfort. The Collier Tyre Company, Limited, displayed a large number of the well-known Collier tyres, which, we understand, are now being taken up by several French makers of motor-cars. The Dunlop Co. had also a range of tyres on view.

PHANOMEN.

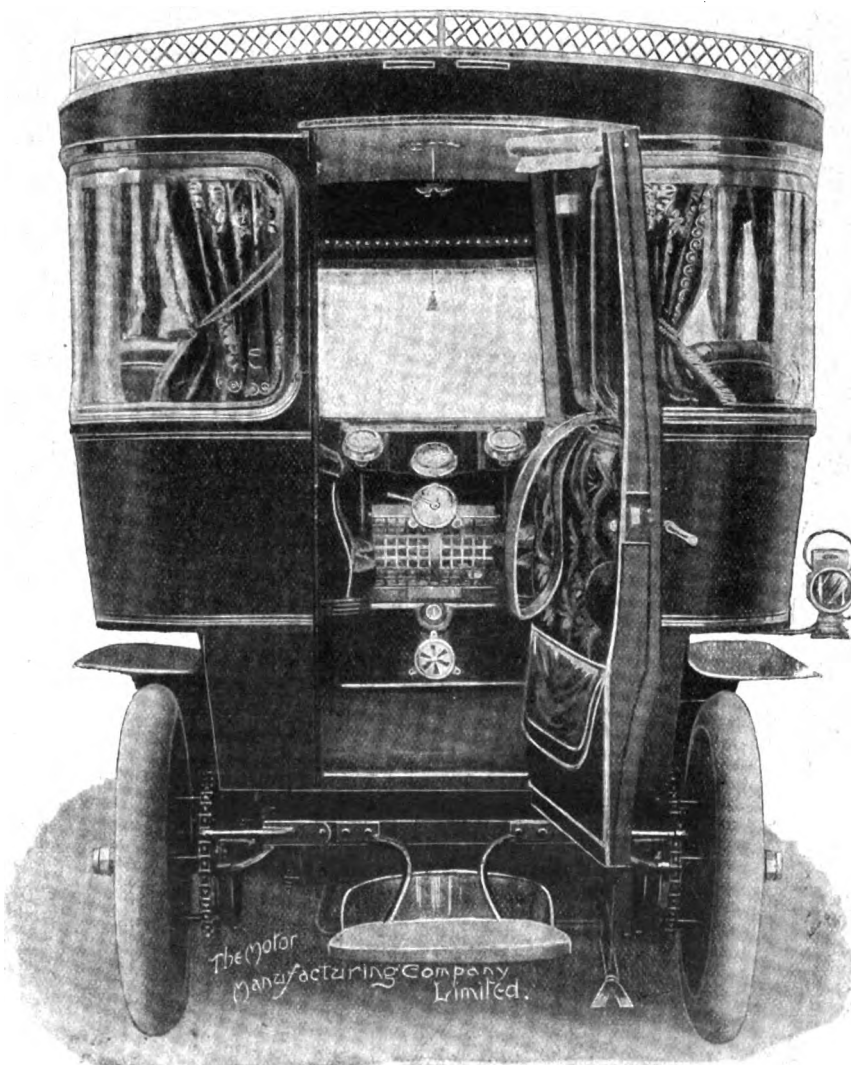


Fig. 58.—The M. M. C. 25-h. p. Saloon. (See page 825 last issue).

CONTINENTAL NOTES.

AFTER consultation with the various authorities the German Club has fixed Friday, June 17, as the date of the Cup race. Challenges have been received from Great Britain, France, Belgium, Austria, Italy, the United States, and Switzerland, so that the race will undoubtedly be of a more exciting character than any of its predecessors.

THE Swiss Automobile Club is the latest to send in a challenge to the German Club in respect of the Cup race. It was thought that the car would be a Martini, but it transpires that it will be a new one designed by Messrs. Dufaux Freres and at present in course of construction at the works of Messrs. Piccard, Pictet and Co. in Geneva. It is said that the engine will be of 80-h.p. and comprise eight cylinders. Among the minor points settled at the meeting of the International Commission in Paris were in regard to the rule which makes it necessary for every part to be constructed in the country of origin of each respective car. On the proposition of M. Rene de Knyff it was agreed to make exceptions in the two following cases: (a) the steel of which the magnetos are constructed, and (b) the fabric employed in the pneumatic tyres.

same stand at the March Show at the Agricultural Hall, Islington. Messrs. Darracq and Company secured the gold medal offered by the Paris Municipal Council, while the gold medal of the Automobile Club of France was secured by M. Prosper Lambert. As regards the competition for carburettors to work with either petrol, alcohol, or ordinary petroleum, also held during the course of the *Salon*, the gold medal in this case was secured by Messrs. Goutreau Freres, of Dourdan.

ARRANGEMENTS are well in hand for the trial of motor-cycles which the "Gazetta della Sport," of Milan, is organising for the end of the present month. The programme is as follows:—First day, Milan to Genoa, 154 kilometres; second day, Genoa to San Remo, 149 kilometres; third day, San Remo to Nice, 57 kilometres; fourth day, rest at Nice; fifth day, Nice to Turin, 210 kilometres; sixth day, rest at Turin; and the seventh day, Turin to Milan, 143 kilometres. The trial is open for touring machines up to 3½-h.p., and the maximum and minimum speeds are fixed at 35 and 20 kilometres per hour respectively. Already twenty-six entries have been received.

THE formation of a Motor Volunteer Corps was definitely decided upon at a meeting held at the club-house in Vienna of the Austrian Automobile Club a few days ago. The corps will



A Fete Day at Chateau Thilery, France.

[Motor, New York.

I LEARN officially from the A.C.B. that, in view of the fact that only the Pipe Company responded to the invitation to enter for the Gordon Bennett race, consequently no eliminating contest will be necessary for the Belgian team. The three Pipe cars will, however, be required to fulfil the conditions laid down by the Club authorities. The names of Rene de Knyff, Maurice Farman, and Henri Farman are being mentioned as the probable drivers of the three Panhard cars in the French eliminating tests. M. de la Touloubre, who will drive one of the Bayard cars in the French eliminating trials, is credited with the statement that the motor of his racer will develop 110-h.p.

IN connection with the *Salon* there was a competition for the most tastefully decorated stand, the result of which has now been made known. The President of France's prize, a Sevres vase, was awarded to M. Clement, the builder of the Bayard cars. The stand was in the form of a triple arch and was made in wrought iron, each part of it being individually hammered out. The design represented a floral decoration, and the top was surmounted by work representing wild flowers; it was touched up with the file to give it a proper effect, and altogether was of beautiful appearance. It was lighted on the inside at night, which gave a wonderful effect. I hear that it is more than probable that Clement-Talbot, Ltd., will use the

comprise two sections, one for motorists and one for motor-cyclists.

FOLLOWING the example of Nice, the Automobile Club of Cannes now proposes to organise an automobile week next spring, in connection with which a motor-car touring competition, a gymkhana, a flower fete, and motor-boat races will be held.

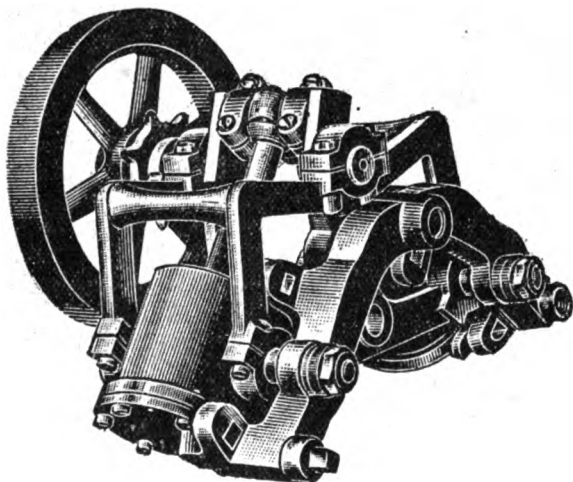
THE Club Automobile de Seine-et-Oise, whose headquarters are at Versailles, is organising an anti-skidding competition. It is to be held from the 23rd to the 28th February next, during which time a distance of 1,000 kilometres will have to be covered. The competition is only open to four-wheel vehicles weighing at least 10 cwt.

A 20-H.P. Mercedes, ordered through Messrs. Spitz and Company, of Vienna, has, reports the "Allgemeine Automobile Zeitung," just been despatched from Cannstatt to London for King Edward. The body takes the form of a comfortable tonneau, painted Cannstatt red, with canopy.

THE Automobile Club of Antwerp, which held its final run of the season on Sunday last, is organising a consumption trial and a series of 500-metre races for the 9th inst.

THE HILL AUTOMATIC STARTER FOR PETROL MOTORS.

MANY inventors are at work endeavouring to devise a method of automatically starting the engines of petrol motor-cars, and so obviate the necessity of a starting handle and the back-kicks, so dangerous to the operator's hands, which frequently accompany their use. Among the concerns who have been quietly working on such devices is the Steel Ball Company, of Chicago, which has recently introduced the automatic engine starting device shown in the accompanying illustration. It is comprised of two principal elements—a pressure tank with gauge, and a small pneumatic motor. The pressure tank is, of course, of usual construction, but instead of receiving its pressure feed from a pump, obtains this directly from the combustion chamber of the motor in connection with which it is used. The combustion chamber is pierced by a pipe-tapped hole, and a direct pipe connection is made between it and the tank. This passage is controlled by an adjusted check valve which does not open except under a pressure greater than that of the compression pressure of the motor. Hence, upon the compression stroke of the motor none of the charge is forced through the pipe, but when the impulse occurs a small portion of the charge is forced past the valve and into the tank. In this way the running of the motor provides an automatically-regulated pressure in the tank. When the



pressure in the latter equals the explosion pressure in the combustion chamber the action ceases until the pressure in the tank has been reduced by starting the motor, when it recommences.

The other element, the pneumatic starting motor, is a small two-cylinder oscillating engine. There is little of novelty in its construction, except that the ports into each cylinder have been placed on the extreme outer ends or heads to lengthen the bearing, while the cross thrust bearing which maintains the substantially air-tight bearing of the cylinder against its port block face is ball bearing, to prevent excessive wear and loosening of the joint.

Between the pressure tank and the pneumatic motor is an ordinary lever-actuated valve. Pressing upon this lever opens the valve and allows the charge to pass to the pneumatic engine, which is instantly set in motion, and being connected by chain gearing and the ratchet clutch to the crank shaft of the petrol engine, the necessary initial compression is given to the latter. The valve can be quickly closed, or if the motor is in good condition only a few turns of the crank shaft are necessary to start it, and continued operation of the starting engine only serves to lower the pressure in the tank unduly. It is obvious that the necessary lowering of the pressure is made up soon after the motor has been started. A correspondent who has seen the experimental device in operation at the company's factory states that it works splendidly. The pneumatic motor occupies but a very small space, it being contained in the space of a cube of

10 inches. We may add that the weight of the entire apparatus is under 45 lbs. The makers point out that by means of the automatic starter, every time the car is stopped the motor may be stopped, since it requires no more exertion to start it again than it would to start an electric motor.

THE RELIABILITY TRIALS.

THE fortnight which has passed since the publication of the results of the Trials has been none too long a period for the digestion and assimilation of the mass of figures which compose the judges' report thereon, and which form a most valuable addition to our stock of data regarding the modern automobile. As is only to be expected, the system by which the awards were made is open to criticism, which, it must be remembered, would have been to a great extent pointless unless that system had been given a fair trial, though few will deny that the prizes have fallen to thoroughly deserving cars. The fact is that, setting aside the inevitable element of luck, the differences in merit between many of the best makes of modern cars are small, and a slight want of foresight in determining the method by which marks shall be apportioned produces no very glaring error. It has already been pointed out by other critics that while the intention of those responsible for the system was to give the factor of reliability more weight than all the minor considerations put together, this end was not attained by making the marks for this high while making the penalties for lack of it no higher; the order of an examination is not altered by giving each candidate an extra thousand marks for one subject; and, in fact, only one of the three of the cars that did complete non-stop runs throughout obtained an award. All the cars that went through obtained over 70 per cent. of the actual maximum, 9,485 marks, while 56 out of 72 obtained over 84 per cent. The fact that the awards might have been slightly altered by a wiser system of marking and examination shows that the alteration could not have been great. It does not, however, detract from the value of the report, the detailed nature of which discounts to some extent any excessive advantage that the medalist may have over his less successful, though not very much less meritorious, competitors. We could have wished, however, that more particulars as to the "condition after trial" had been available: a thousand miles is not sufficient distance to bring out in an obvious manner slight differences in quality of material that are painfully evident in, say six months' running, and the publication of the results of expert examination would have gone far to atone for this.

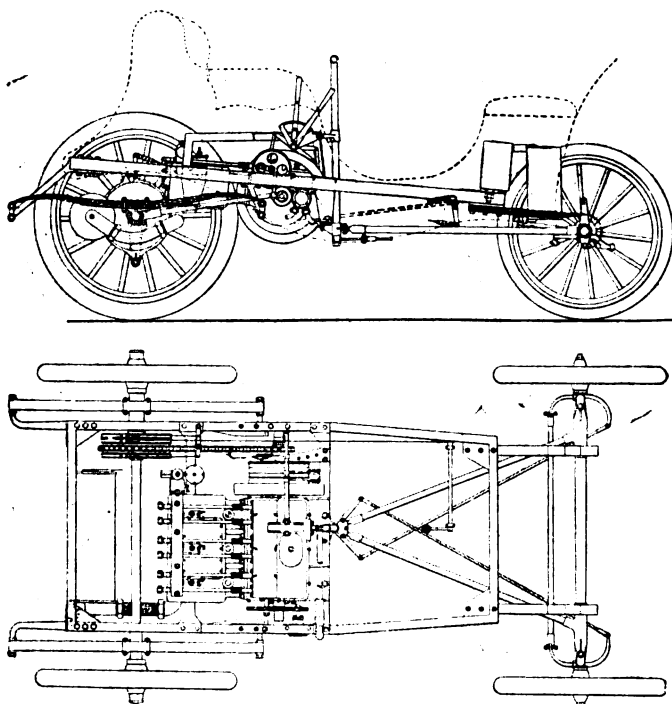
Comparing the 1903 trials with those of 1902, an evident and at the first blush rather disquieting fact is the large number—32 out of 104—that failed to get through. It must be remembered, however, that the conditions were far more severe, and that several of the cases were due to an incomprehensible disregard of rules and regulations. Taking those caused by serious breakdowns in the mechanism, five were due to failures in gear or differential, four to broken piston-rods, three to failures in the half-speed gear, two to broken propeller shafts, and one to broken crankshaft, while three have overheating alleged as the cause—eighteen in all, or rather less than eighteen per cent. In the 1902 Trials eighteen per cent. covered the whole of the breakdowns, of which four out of eleven were gear failures. Allowing for the severe conditions, there seems no reason for dissatisfaction with the progress shown, though improvements will no doubt be suggested as to the methods of recording and testing it in future trials. At least it may be hoped that the purely or chiefly æsthetic points—noise, vibration, vapour, dust, and finish—will be given a less overwhelming influence, and it might be suggested that awards for them might be given entirely independently of those for performance, as—*si licet parva componere magnis*—is done with poultry. The trials have their analogue more in the racecourse (or, considering the usual weather, one might rather say the ploughing match) than in the horse show, and in future performance, plus condition at finish, ought to be given the preponderance in the award of merit.

HERE AND THERE.

MR. T. C. CLARKSON has promised to read a paper on steam motors before the Society of Arts.

IN connection with the Christmas postal service between Newcastle and Sunderland motor-cars were run by Messrs. Turvey and Co.

WE are now able to give two illustrations showing an elevation and plan respectively of the new British-built 12-h.p. Duryea, of which a description was given in our issue of the 5th ult. The diagram shows clearly the canted channel steel frame; the position of the water tank and the radiators beneath



the tool box in front; the lines of the dashboard; the curved underhung front springs; the steering post and connections; the control levers; the engine; the long springs; the differential gear box and brake gear; the universally-jointed triangular forecarriage; and the direct drive by single chain to the live axle.

PROBABLY one of the longest journeys by road to visit the recent *Salon* in Paris was that of Messrs. Stoewer Bros., of Stettin, Germany, who covered the distance of 1,362 kilometres which separates the two cities in six days, on a 20-h.p. Stoewer car.

UNDER the auspices of the International Sporting Club of Monte Carlo a meeting of motor-boats has been arranged for the Easter holidays in the bay of Monaco, with £4,000 in cash for the winning competitors. The regatta will be preceded by an exhibition of motor-boats, to commence on the 10th March next.

THE first entries for the Harmsworth International Motor Boat Race are two Napier boats. The vessels are the 40 ft. boat of 100-h.p. belonging to Mr. S. F. Edge, and a 35 ft. boat of 60-h.p. It is to be hoped that English constructors will enter in large numbers for this trophy, as it is expected that a large number of foreign entries will be sent in.

THE Quadrant Cycle Co., Limited, inform us that they are prepared to supply a fixing complete with the number plate enamelled and painted in accordance with the regulations of the Local Government Board, either to fix on any lamp a motor-cyclist or motor-car owner may possess, or they can supply the lamp and number complete. The plates are made in two forms, one to be fixed rigidly to the front portion of the lamp, the other detachable.

A GARAGE for fifty cars has been established by Mr. H. E. Richardson at North Finchley.

MESSRS. W. B. FORDHAM AND SONS, LIMITED, are placing upon the market an E.G. solution for coating the silencers, tanks, pulley wheels, etc., of automobiles.

THE December issue of the Bulletin, issued by the White Steam Car Co., of Cleveland, O., is devoted to the performance of the White steam cars in the recent Reliability Trial in the United States.

MESSRS. HOOPER AND SON, carriage-builders, Liverpool, report that in spite of the advent of motor-cars they have found no falling off in the demand for horse-drawn carriages during the past year.

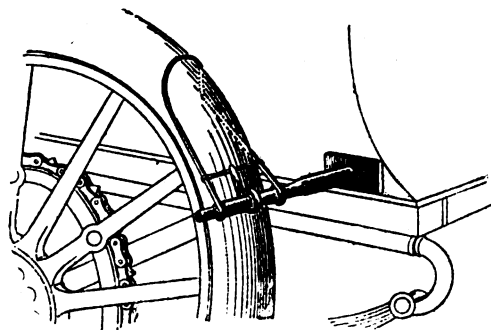
AT a meeting of the executive committee of the American Power Boat Association, a few days ago, it was decided to issue an invitation to the thirty yacht clubs forming its membership to contribute to a fund for the purchase of a valuable silver trophy to be awarded to the winner of an international motor-boat race to be held in June or July next, and annually afterwards.

AT the next meeting of the board of governors of the Automobile Club of America the question of nominating a motor-boat committee will be discussed and a committee probably appointed. The members of the club fully realize the importance of this new branch of automobile sport, and feel that the time has come to recognize it, as a number of prominent European clubs have already done.

THE 80-h.p. Peerless racer used by Mr. L. P. Mooers in the Gordon Bennett race last summer has been practically rebuilt for the coming season. The car has been fitted with a sheet metal hood of torpedo shape somewhat on the lines of that of Gabriel's Mors racer. The peculiar radiating arrangement is the most noticeable improvement; it consists of two batteries of $\frac{1}{4}$ -inch copper tubes held together by vertical flanges extending entirely around the side of the body.

THE Pittsburg Automobile Club is arranging for a series of lectures on automobile topics, to be given some time in February next. Several of the lectures will be strictly technical, designed especially for the instruction of automobilists. Most of them, however, will be on topics of general interest to the automobile public and will be illustrated by lantern views. The aim of the club is to start an educational campaign leading to the alleviation of the abuses of highway privileges and excessive speed.

A SIMPLE thorn and nail extractor for use in connection with the pneumatic tyres of motor-cars was shown at the Paris *Salon* by M. E. Nouzillet. It consists of a single-arm bracket



attached at such a point on the car body that the wire will bear lightly on the tyre. A spring holds the extractor to its work; it can readily be fitted to any make of vehicle.

WRITTEN by Mr. B. C. Windle and illustrated by Mr. E. H. New comes an excellent volume on Chester, a place rich in records and full of historic interest. It is one of the useful series of guide books published by Messrs. Methuen and Company, and presents as clear a view of the importance of the city in the olden days and its interest in the present as we have read anywhere.

THE Herkomer Trophy for touring cars will, we understand, be offered for exhibition at next year's Royal Academy.

THE King of Italy, himself an ardent motorist, has expressed his willingness to become the patron of the Italian Automobile Club.

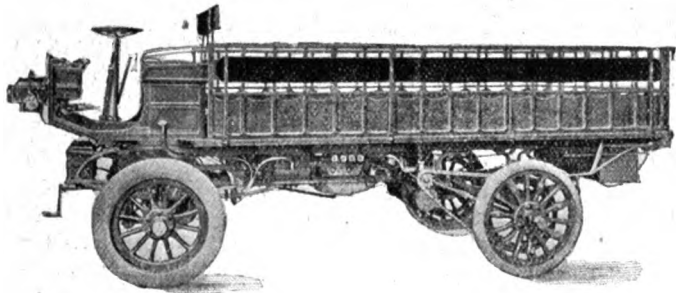
THE South Hams Motor Carriers, Limited, has been registered with a capital of £5,000 in £1 shares. The first directors are Messrs. H. Brooking, W. S. Langworthy, C. G. Eve, J. H. Androw, and A. C. Pode.

MESSRS. G. T. RICHES AND COMPANY are now in a position to promptly supply oblong or square number plates in enamelled iron in sizes suitable for either motor-cars or cycles. They have also got in a stock of lamps arranged to illuminate the rear number.

THE Paddington Motor Company, Limited, has been registered with a capital of £1,000 to carry on the business of manufacturers of motor-cars, etc. The first directors are Messrs. J. Neave, W. S. Cutler, and S. G. Neave, and the registered office is at Banister Road, Kensal Rise, N.W.

THE A.C. of California is said to be in a quandary as to what use it is best to put the profits from the recent race meeting. A garage or a club house is said to be among the possibilities; but the president of the club is quoted as saying that it is more likely that they will be applied to some good roads movement, so that both automobilists and the public may participate in the benefit. The profits were between £800 and £1,000.

THE accompanying illustration depicts a 12-h.p. Gladiator lorry which is being introduced into this country by Messrs. S.



F. Edge, Limited; it is designed for loads of 2 tons, and is capable of running at any speed up to 15 miles per hour.

A COMPANY has just been formed in St. Petersburg with a capital of two million roubles to build motor-cars.

FROM New York it is reported that Mr. Alden Sampson, of Pittsfield, Mass., is likely to drive a Moyea car in the eliminating trials for the American Gordon Bennett team. Mr. W. Owen, brother of Mr. Percy Owen, will also probably be in the tests, and both a Peerless car and a Packard car are mentioned as likely to take part.

GENERAL GALLIENI, Governor of Madagascar, has written to the president of the Touring Club de France a long letter on the subject of the use of motor-cars in that island. After some early experiences with 6-h.p. and 12-h.p. cars, General Gallieni organised a postal service with 15-h.p. Panhard cars, which has been running since June of last year between Antananarivo and Mahatsara. Since that time the cars have travelled about 19,000 miles, and have been of great service for the transport of travellers as well as the mails.

THE probable production of automobiles in the United States in 1904 is estimated by the "Horseless Age" at over 35,000. "The Oldsmobile Company's output will undoubtedly be the largest, but we are unable to give a close estimate of its volume; between 6,000 and 7,000 is probably a conservative figure. The Cadillac Company's projected output comes next, with 4,000 vehicles; then follow Ford, 3,000; Jeffery, 3,000; Winton, 2,000; Knox, 1,500; Autocar, 1,500; Stanley, 1,200; Crest, 1,000; White, 1,000; Pope, 1,000; Peerless, 500; Packard, 500; Pierce, 500; and Haynes-Apperson, 500."

THE Automobile Union of Harburg and district has just been formed at Harburg, Germany.

THE Deritend Stamping Company, Limited, Birmingham, are making a speciality of high-class motor work.

"LE MONDE SPORTIF" now proposes to hold its postponed trials of electrical vehicles from the 27th to the 30th March next.

THE Hozier Engineering Company, Limited, have appointed M. Porteous Butler, 22-24, Passage de l'Opera, Paris, agent for the Argyll cars in France.

AMONG new members of the Scottish Automobile Club are Sir R. J. Griffith, Bart., Lt.-Col. W. H. Ferguson, Lt.-Col. A. C. Baillie, and Dr. Robert Bell.

A COMPANY has been formed to run a service of motor omnibuses between the Island of Reichenau and the town of Constance, on Lake Constance.

THE Road Carrying Company have acquired Messrs. Bennett and Carlisle's Liverpool business, and are taking over their premises in Renshaw Street as from January 1st.

MESSRS. VINTON AND COMPANY, LIMITED, issue their "Agricultural Diary for 1904," and also the "Live Stock Journal Almanac," each appealing to a wide section of the community.

THE University of Pennsylvania Automobile Club has been formed in Philadelphia, U.S.A. It was proposed to communicate with other university automobile clubs to suggest to them the formation of an intercollegiate club.

MR. ESTCOURT has, we hear, perfected an improved system of acetelyne gas lighting suitable for motor-cars. The ordinary carbide is used, and the gas, always ready, can be turned up or down just in the same way as coal gas, and gives less trouble to light up than a paraffin lamp.

CERTAIN engine-drivers in America have discovered that they do not like red lights on automobiles. They say that such lights on a motor-car standing at a level crossing are perplexing, as they are frequently mistaken for danger signals, and urge that he use of these lamps on such vehicles be discontinued.

AT the general meeting of the Society of Engineers recently, the president announced that the following premiums had been awarded for papers read during the past session. The president's gold medal to Mr. Douglas Mackenzie for his paper on "Motor Transport for Goods"; and the Bessemer premium of books to Mr. Robert J. Thomas for his paper on "Road Maintenance and Administration."

THE directors of the Civil Service Motor and Cycle Agency, Limited, report that the trading for the twelve months ending September 30th, 1903, has shown a gross profit of £3,839 10s. 1½d. and a net profit of £977 9s. 1d. This will be devoted to the payment of the balance of the 6 per cent. dividend on the preference shares, to pay 5 per cent. on the ordinary shares, to carry £250 to reserve (increasing that account to £1,000), and to carry forward £50 12s. 7d. It is proposed to devote more attention to the motor business, and during the past year additional premises were taken in Featherstone Buildings, which are conveniently near to 292, High Holborn, W.C.

THE Mobile Motor and Engineering Company, Limited, of Birmingham, have lately introduced two new popular-priced cars. One of these is a 6-h.p. vehicle fitted with De Dion engine, Mercedes pattern bonnet and radiator. The transmission is by a cardan shaft, three forward speeds and one reverse, controlled by one lever, being provided. On the top speed the motor drives direct on to the back axle, all intermediate gears being at rest. The other is a 12-h.p. car fitted with a double cylinder slow-running Aster engine; it is provided with a large and effective silencer, three forward speeds and one reverse on single lever, direct drive on top speed, and cardan shaft transmission. A 9-h.p. Mobile car fitted with De Dion engine, and embodying all the features of the 6-h.p. vehicles, is also being introduced by this company.

MOTOR-CYCLING NEWS.

MOTOR-CYCLISTS must remember that, in common with the owners of cars, they will have to conform to regulations. It may be noted that the term motor-car, save where the contrary intention appears, includes a motor-cycle. A licence to drive a motor-car will therefore include authority to drive a motor-cycle, but a licence to drive a motor-cycle will not, on the other hand, include authority to drive a motor-car. Hence in applying for licences owners of motor-cycles may be expected to ask for the motor-car licence in preference to one limited to motor-cycles. In the case of motor-bicycles or tricycles the illumination of the back plate may present some difficulties, and the regulations of the Local Government Board will be complied with if either the back plate or the front plate be illuminated. Amongst other suggestions that have been made, and to which the Board are giving publicity, is one for the affixing of a thin upright plate lettered on both sides, and projecting forwards from across the centre of the lens of the head lamp of a cycle.

THE Electrical Cycle and Motor Company, of Swadlincote, Burton-on-Trent, have sent us a sample of a new belt-fastener they have lately introduced for the driving belts of motor-cycles. The special feature about the fastener is its ease of detachment. It consists of two U-pieces attached to the ends of the belt by screws. The arched ends of the pieces are slotted to admit of the insertion of an I-shaped piece. To detach the fastener it is only necessary to turn the I-shaped piece parallel with the slot, when it comes apart. The fastener, which is designed for V-section belts, has, the makers state, been well tested before being put on the market.

IN the Chancery Division of the High Court, Mr. Justice Byrne has delivered his considered judgment in an action by Werner Motors, Limited, against Messrs. Gamage, Limited, claiming an injunction to restrain defendants from infringing plaintiffs' registered design for motor-cycles. Defendants denied the infringement, and contended that plaintiffs' design was invalid on several grounds. Mr. Justice Byrne, in giving judgment for the plaintiffs, held that the design was original, and that it had been infringed by the defendants. His Lordship granted plaintiffs an injunction, with costs. The damages were agreed at £5. Defendants intimated their intention of appealing.

At the last meeting of the Auto-cycle Club de France it was decided that a few minutes shall be devoted at all future meetings to a technical demonstration of motor-cycle specialities.

THE Auto-cycle Club have decided to promote a side-slip competition in order to test the various devices on the market. The competition will probably take place in March or

April, and intending competitors are requested to communicate with the secretary, Auto-cycle Club, 119, Piccadilly, W.

EVERY user of a motor-cycle is eligible for membership of the Rex Motor-Cycle Club of Coventry, the subscription to which is half-a-crown. The latest additions to the list of members are Le Comte Avvo Alfred Peracca, Le Comte di Montonaro, Signor Andrea Montu and Signor Guiseppe Corte.

THE clause in the old regulations with regard to the speed of light locomotives with trailers being restricted to six miles an hour is being dropped in the new Orders of the Local Government Board.

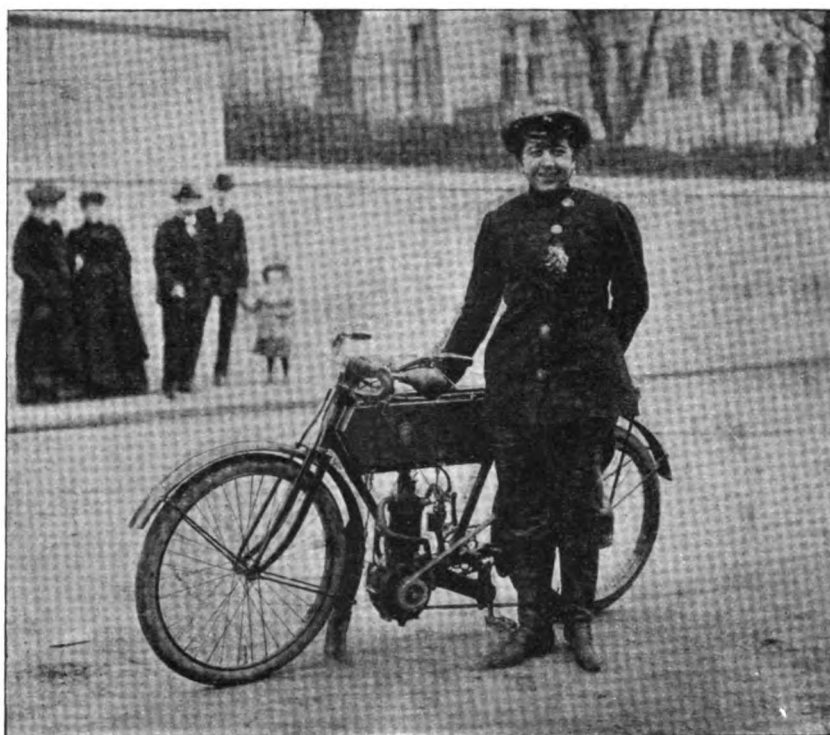
IN order to provide an easy means of observing the amount of petrol in the tank, Messrs. Bluemel Brothers have brought out an ingenious little gauge, consisting of a transparent celluloid tube open at both ends. On being dipped into the tank, and the finger then held over the top end, the petrol will be retained in the tube when withdrawn exactly the same height as in the tank. By filling the tank by a quart at a time, then dipping in the tube and marking it off, the exact measure can always be ascertained when desired.

THE first annual smoking concert of the Edinburgh Motor Cycling Club was held on Tuesday, last week, when Mr. William Flint, president of the club, presided over a large gathering. Mr. Trevor proposed the toast of "Success to the Club," to which Mr. Flint replied in an interesting speech.

SOME useful hints for motor-cyclists are given in the new handbook issued by the Minerva Motor Company, from which we take the following:—Failures of ignition are more commonly from the following causes:—

Running down of accumulator, damaged or dirty sparking plugs. Trembler broken or out of adjustment, wires becoming loose or disconnected, and lubricating oil on the platinum tips of the trembler and screw. The first two general causes are now entirely obviated by the fitting of twin accumulators and a plug with central wire. Examine first of all the terminals, see that the wires are well fixed, then examine the trembler. Try if all connections are in order, by again connecting to thick wire and resting the steel case of plug against the frame of the engine, then take off belt and (with the handle-switch on) rotate the engine several times. If a spark is produced every other revolution of the engine, all is in order, provided either of the accumulators give 4 volts, when tested by a voltmeter. The motor might even work with the accumulator as low as 3.8 volts, but it is then time to have the battery re-charged. After the examination see that everything is put back in its proper place.

MR. U. Stratton, late of Compton Grange, near Wolverhampton, and of Marina Court, Bexhill-on-Sea, has been appointed London manager of the Daimler Motor Co., Limited.



Mlle. J. Herven, the Lady Motor Cyclist, who took part in the Recent Trials in France.
(La France Automobile)

CORRESPONDENCE.

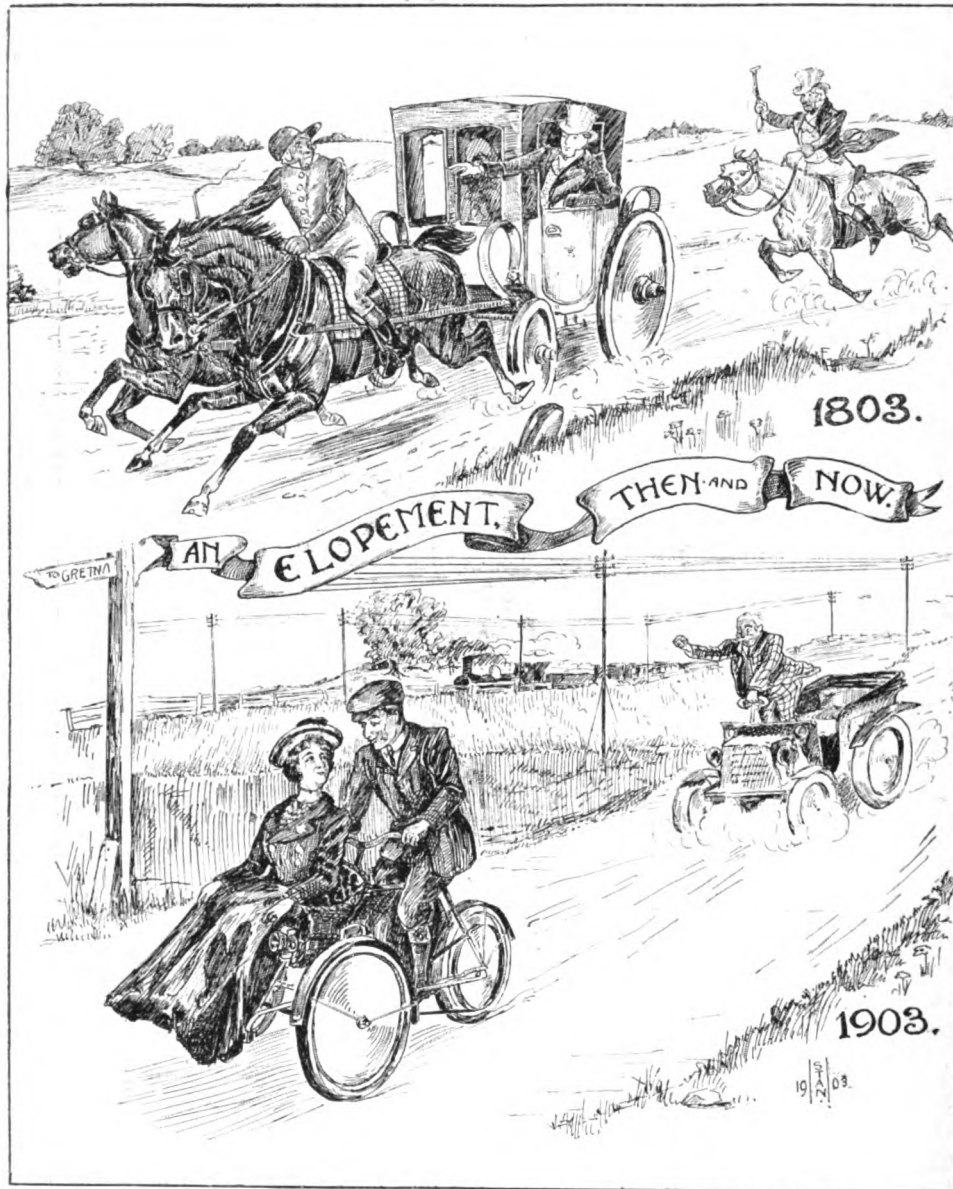
COMMERCIAL MOTOR-VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—For some considerable time past I have been convinced that the mainstay of the motor industry in the future will consist in the manufacture of the commercial motor-vehicle. Whilst the industry in this country is labouring under the absurd road regulations that it is, it will be a considerable time before we are able to catch up our foreign competitors, so far as the pleasure type of vehicle is concerned; but we can, and will, beat them on the ground of good strong, substantial design and workmanship, such as is required in the commercial type of vehicle. It only requires a few of our prominent manufacturers to devote their skill

enterprising commercial firms that have endeavoured to take up this type of vehicle, what treatment have they met with at the hands of the manufacturers or dealers to whom they have applied? These gentlemen, with a view to obtaining immediate profits only, have supplied these firms with an ordinary pleasure chassis with a lorry or van body fitted. Now, how can a vehicle, designed in the first instance to carry some four or five passengers only, be expected to satisfactorily perform the task of conveying from one to two tons of goods about? The engine, the gearing, the diameters of the journals were all totally inadequate for this purpose, and constantly required renewals and repairs, with the result that, after trying to run the vehicle for about six months, these firms came to the conclusion that the cost of upkeep was about twenty times that of the horse, and gave it up in disgust, calling motors generally a total failure.

Of course, we have the heavy steamer with us (which has been primarily designed for business purposes), and in its way I am bound to admit that



to designing a satisfactory vehicle of this type to start a branch of business that has no limit.

Up to the present time all vehicles offered to the commercial community have not been primarily designed for that purpose (I here except the heavy five-ton steamer), and of late I have observed various illustrations of vehicles for commercial purposes. It would not be fair or right to stigmatise all these vehicles as being useless for the purpose they are suggested, but I have no hesitation in saying that many of them will prove to be absolute white elephants to those firms who are unfortunate enough to purchase, as they are evidently merely the usual pleasure type of chassis fitted with a lorry or van body.

One reason why so few commercial vehicles are to be seen in use at the present time is that nearly all attempts that have been made to provide such a vehicle—at any rate of the petrol type—have been made in such a manner that disaster was bound to follow. Taking, for instance, those

it is a very excellent vehicle, and with a few further improvements will answer very well, and prove profitable to those that are bound to move loads of five tons at least at one time; but my conviction is that where one vehicle of this type will be purchased by the commercial community generally, thirty, aye fifty, of the lighter and smaller vehicles, capable of carrying from, say, one to two and a half tons, will be purchased, and it is for this section of the trade that manufacturers ought to lay themselves out, and design a vehicle that will have, to say the least, a small chance of proving itself to be useful and serviceable. Until the day arrives for electricity, the internal combustion engine will be found, for all-round purposes and for loads up to two and a half tons, to be far and away the best.

For many years I have had cars running in public service work, and, like many others, I had at first to use what I could get hold of. What was the result? Exactly what everyone else found, that the cost of

upkeep was enormous. After putting up with this for some time, I set to work to design something capable of standing all the hard work of service use, and to do this I found that most of the wearing parts had to be practically doubled as to their surfaces. That is the essential point in any car or anything—the part to be used must be designed for the purpose for which it is intended, and unless this is the case, disaster is bound to follow.

There is now coming a great demand for the commercial motor-vehicle, and I hope that our manufacturers will not offer for sale to the commercial community vehicles which, from their very design and inadequate bearing surfaces, cannot stand the severe work of business requirements. Experience has proved that, given sufficient strength of parts and sufficient bearing surfaces for the work it will have to do, there is no reason why the commercial motor-vehicle will not do its work as well as any other reasonably-constructed piece of machinery. But unless manufacturers will carefully consider the great strains that commercial vehicles have to undergo, and do all that is necessary to construct their cars on reasonable lines for this class of work, I am afraid it will be a long time before this type of vehicle is seen in our streets in any quantity. On the other hand, if manufacturers from the very first will only supply the right vehicle, I am certain that the amount of business to be done with this class of automobile is practically without limit.—Yours truly,

FRANK MORRIS.

BENZ v. LIGHT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent, "Amateur," most kindly offers the benefit of his experience *re* Benz cars, of which I would gladly avail myself if he would kindly send his letter to your office to be forwarded. What I particularly want to know from a disinterested amateur is whether the great weight and extreme difficulty of reaching the vital parts of a Benz, compared to the lightness and easily-reached working parts of a light voiturette, are compensated for by the working and quantity of petrol required to move it.—Yours truly,

D. BEAUMONT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a Benz car owner I should like to know what are the small improvements "Amateur" has made to improve the running of his car. As regards the mechanical inlet valve, I found this quite useless—in fact, I think it slowed the car; but I use a very light spring on inlet valve. I should also like more information from a user of the Star carburettor.—Yours truly,

JOHN HENRY KNIGHT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was very much interested in "Amateur's" reply in the last issue to Mr. Beaumont's letter of the 12th ult., *re* shortness of power in 3½-h.p. Benz cars to climb hills or even slightly rising ground on top speed. I have now been using a Benz car for over three years, and should be pleased to hear "Amateur's" explanation as to how he has improved the power, as I, too, am troubled in the same way as Mr. Beaumont and a great many others, who I know would be pleased to hear of any means of improving the hill-climbing powers of their cars, as it takes away much of the pleasure of motoring to have to merely crawl up the slightest hill or rising ground.—Yours truly,

AN OLD SUBSCRIBER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I for one of your readers would be glad to hear what improvements "Amateur" has been able to make in his 3½-h.p. Benz. My car will not take a slight hill without altering speed.—Yours truly,

A. F. FURNISS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with much interest "Amateur's" letter, "Benz v. Light Car," in the MOTOR-CAR JOURNAL of the 26th ult. I also have a 3½-h.p. Benz car, and have experienced the same difficulty in going up slight inclines, having to invariably drop to the second speed or crypto. I should esteem it a great favour if your correspondent would kindly let me know what are the small improvements he has made.—Yours truly,

A. SIDNEY RANSOME.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If "Amateur" would kindly extend to me the obliging offer which he has made to Mr. Beaumont, to correspond with him about some improvements he has made in his 3½-h.p. Benz, I should be very glad to reciprocate. May I ask, *inter alia*, has "Amateur" contemplated the risk of illuminating his back plate, judged by its proximity to the carburettor and the heaviness of petrol vapour.—Yours truly,

C. A. PALMER.

LIGHT CAR EXPERIENCES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of the readers of your valuable journal give me their experiences of the following light cars—Speedwell, Vauxhall, Baby

Rochet, and Gordon Miniature? I am wanting to get a light car at a moderate price, say from £125 to £135, and would be much obliged if any of your readers would help me in the matter.—Yours truly,

ENQUIRER.

WATER CIRCULATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be greatly obliged if you would inform me whether, as regards the water circulation in my car, the water should flow from the bottom of the tank to the pump, from the pump to the top of the radiator, then from the bottom of the radiator to the lower portion of the cylinder water-jacket, and from the top of the latter back to the top of the tank. Is this right, or should the water flow from the pump to the lower part of the cylinder water-jacket, then from the top of the cylinder water-jacket to the top of the radiator and from the latter to the top of the water-tank?—Yours truly,

F. J. R.

["F. J. R." will probably obtain much better results with his circulation if he adopts his last-mentioned plan of connection, viz., from the tank to pump, thence to the bottom of cylinder water-jacket, from top of cylinder to top of radiator, and from the bottom of radiator to top of tank. By this method "F. J. R." would be constantly getting a supply of cold water into his engine, provided he had efficient radiators. If connected up in the first-named manner a constant supply of hot water would be contained in bulk, and his water-tank practically giving the radiator no chance of doing its work.]

INLET VALVES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be obliged if you would explain why in some makes of petrol engines inlet valves with flat seats are employed, while in others inlet valves with bevel seats are used? I should also like to know which is the easier type to grind in, etc.—Yours truly,

MARBEUF.

[The reason that some makers of petrol engines make flat seats to their inlet valves is simply a matter of opinion, but the majority are now using the bevel seat. The great trouble is that any small piece of deposit either from the cylinder or from the incoming mixture is likely to remain on a flat seat and cause a loss of compression, whereas with the bevel seat it has every chance of being taken into the cylinder. The grinding of both forms of valve is practically the same.]

THE MOTOR-CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—You recently gave particulars of the Motor Car Act. I should like to know, in case of selling a car and buying a new one, how the registration is effected. Would a fresh number have to be obtained, or can the number be transferred to the new car?—Yours truly,

L. R. A.

[Should the ownership of a registered car be changed the new or the old owner must give notice to the Council with which the car is registered, and an application be made either to cancel the registration or to continue it under the new ownership. The new owner may continue the registration on payment of a fee of 5s. for cars, and 1s. for motor-cycles.]

BORES AND STROKES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have just noticed a letter by F. L. Ferguson in your issue of the 19th ult., and have to point out that an error occurred in reporting what I said with regard to the relation between bore and stroke. It reads in the report ¼ in. I meant that the stroke should be one-fourth greater than the bore, and the reasons for this opinion are clearly stated in my paper.—Yours truly,

ALEC GOVAN.

SCREENS AND CANOPIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to "F.'s" letter in your last issue, the question of canopies and hoods for cars depends very much on the power of the car. With a small car, a hood, if used at all, would only be employed in very bad weather, and when speed was quite a secondary question. With a 10 or 12-h.p. it might be expected to cut down the average quite two or three miles per hour or more, if against a head wind in level country; while with a high-powered car the loss in pace would be a small consideration, at any rate over English roads. A hood folding back over the tonneau is most useful when down as a dust screen, and, if reasonably light, is what I should recommend for a moderate-powered car; it shelters all the occupants remarkably from cold winds, even without a front screen; moreover, it can be entirely removed, if not required, more easily than a canopy. The latter is heavier, and while better suited to stand continuous bad weather, is more agreeable in hot weather as a protection from the sun; but it is more applicable to cars of higher power. The front screen is rather difficult to see through at times in bad weather. The form due to Mr. Estcourt, with curved or sloped side glasses, has the merit of giving

a better chance of a clear view. A hood, if this form is preferred, should have removable back and side curtains, so that these may be dispensed with when not needed.—Yours truly,

R. W. B.

LIGHT CAR TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some considerable amount of discussion has taken place recently as to the need for further trials for light cars. An excellent opportunity will be offered to manufacturers who really desire such trials to obtain an Automobile Club certificate for 100 miles non-stop run, together with a record of fuel consumed and speed on hill climbs, by entering for the next quarterly trials, which will be held on February 12th, starting from the Automobile Club Garage at 9 o'clock. The last day on which an entry can be received will be February 6th. The entry fee is ten guineas, of which six is returnable if the vehicle actually starts, and this fee includes the registration of driver and vehicle.—Yours truly,

BASIL H. JOY,

Technical Secretary, A.C.G.B.I.

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to "Puncture Tired," my 8-h.p. car, when bought, had solid tyres. The thumping when running is far from a pleasant experience, and in my case, with a mileage of about 300, resulted in a broken back axle in the country, miles from any station. My next mishap happened in town, where, owing to shocks received over rough paving, one front wheel came off; broken axle again. These, together with minor troubles, determined me in having pneumatics fitted, since when I have had no further trouble. I should hesitate before changing to solids, as, with all the inconveniences of punctures, they are not so bad as broken axles, or as costly.—Yours truly,

SOLIDS TRIED.

LOSS OF POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have a 12-h.p. double-cylinder Aster engine in my car which has a loss of compression. I have fixed new inlet valve springs and washers and ground inlet valves, but with very little gain. I have run about 2,000 miles without any trouble (less punctures), till a few weeks since. Will the piston rings have become worn with wear, or has the cold weather any contracting effect on the rings to cause this loss? How long should the piston rings last?—Yours truly,

B. E. BOLTON.

UNATTENDED HORSES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your *Journal* of December 26th a case is reported in which Judge Lumley Smith dismissed the action for damages committed by an unattended horse in a cart, thereby admitting the right of people to let their carts be unattended while calling for orders or delivering parcels. This decision seems opposed to all common sense. If it is necessary to leave carts unattended, surely the owners of those carts should lock the wheels to prevent accidents not only to motor-cars, but to the general public.—Yours truly,

J. M.

STARTING HANDLE FOUND.—Mr. Dennison, 3, Horbury Mews, Notting Hill Gate, W., writes, that he picked up a starting handle at Notting Hill on Christmas Eve, and will be pleased to hand it to the owner on application.

INTERNATIONAL AUTOMOBILE CONGRESS.—The American Motor Car and Vehicle Company, of Perth, Western Australia, which enquires for a report of the proceedings of the above, is referred to the Automobile Club de France, 6, Place de la Concorde, Paris.

IMPORT DUTIES ON MOTOR VEHICLES.

IN the last issue of the "Board of Trade Journal," the following particulars relating to the import duties levied on motor-vehicles in certain foreign countries are given:—

SWEDEN.—Automobiles are assessed for import duty in Sweden under the heading for "vehicles of all kinds not specially mentioned," the rate of duty on which is 15 per cent. *ad valorem*.

PERU.—Automobiles are free of import duty.

ARGENTINE REPUBLIC.—Automobiles are subject to a duty of 62 per cent. on their value, as assessed by the Customs Authorities.

BRITISH POSSESSIONS.

INDIA.—Motor-cars pay 5 per cent. *ad valorem*.

CEYLON.—Motor-cars not used for traction are liable to duty at the rate of 5½ per cent. *ad valorem*. Motor-cars used for traction are free of duty.

MAURITIUS.—Automobiles pay duty at the rate of 10·4 per cent. *ad valorem*.

FALKLAND ISLANDS.—Motor-cars are free of import duty.

SOUTH AFRICAN CUSTOMS UNION (Cape Colony, Natal, Orange River Colony, Transvaal, Southern Rhodesia).—Motor-vehicles pay duty at the rate of 5 per cent. *ad valorem*, but a rebate of one-fourth of the duty leviable is allowed if the goods are of British manufacture, and accompanied by a certificate to that effect in due form.

CANADA.—Automobiles are not specifically named in the Canadian Tariff, but carriages and vehicles not specified pay 35 per cent. *ad valorem*, with a reduction of one-third of the duty leviable if they are accompanied by a certificate proving them to be of British manufacture. The duty on automobiles, not new, in use by tourists going temporarily to Canada is refunded on re-exportation within a period fixed by the Collector of Customs, not exceeding six months.

NEWFOUNDLAND.—Motor-carriages are dutiable at the rate of 30 per cent. *ad valorem*.

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED. M. P. H.	RESULT.
Guildford.....	S. A. Young, Twickenham	—	£3, etc.
"	H. Strakosch, London	—	£3, etc.
Bristol	C. H. Wilson (driver to Mr. G. White)	25	£1, etc.
Edinburgh ...	W. Rutherford, Portobello	—	£5.
Shoreham ...	J. Chapon	29	£3 6s.

COUNTY COURT CASES.

ARTHUR SOUTH, electrical engineer and bicycle and motor-car repairer, 132, Manchester Road, Nelson, sued Dr. Moore, Colne Road, Burnley, for £13 9s. 6d., in respect of repairs done to a steam motor-car and a petrol car. There was a counter claim of £10, in which Dr. Moore sued South for alleged damages sustained through the repairs being done. After considerable evidence had been heard, his Honour, in giving judgment, said he thought the plaintiff had made reasonable charges. With regard to the petrol car, he would deduct 15s. from that account, and give judgment for the plaintiff for £12 14s. 6d., with costs. The counter-claim would be dismissed.

At the Newent County Court the case of E. Pitt, Son, and Company, of Gloucester, v. Alfred Parker, of Newent, has been heard. This action, which had been transferred from the Gloucester Court, was brought to recover £11 3s., balance of the price agreed to be paid for a motor tractor. The defendant counter-claimed for £41 10s. expenses, etc., he had been put to owing to the motor being defective. Ultimately the judge gave judgment for the plaintiff for the amount claimed and dismissed the counter-claim.

"ACCIDENTAL" SMOKE.

MR. GEORGE MONRO, Jun., of the Motor Carriage Works Exeter Street, Strand, was summoned at Lambeth Police Court on Tuesday under the Locomotives on Highways Act, 1878, for using a locomotive which did not consume as far as possible its own smoke. Mr. Helman-Pidsley supported the summons, and said he anticipated the defence would be that this being a light locomotive the Act of 1878 did not apply, and that the offence, if any, came under the Light Locomotives Act of 1896. If Mr. Monroe could satisfy the court that the emission of smoke was temporary or accidental, according to the wording of the Act of 1896, then the summons would fail. The evidence was that the locomotive was stopped on November 11th on the top of Brixton-hill to take in water. Smoke accumulated in the smoke-box, and as the engine went down the hill by its own weight there was no blast of steam. Smoke was emitted for three minutes. The light locomotive was constructed to consume its own smoke. The magistrate regarded this as "temporary or accidental" smoke and dismissed the summons.

TO CORRESPONDENTS.

All communications intended for insertion in this *Journal* or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, JANUARY 9, 1904.

[No 253.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

OUR DIRECTORY OF NUMBERS.

In an early issue we propose to commence the publication of our Directory of Motor Car Numbers. We have received a large number of Names, Addresses, and Numbers, and shall be glad to have additions to the list as early as possible, so that it may be full and comprehensive.

COMMENTS.

The Motor-Car Act.

ELSEWHERE we give the first of a series of notes on the working of the Motor-Car Act, in which we hope to chronicle any important decisions which may be made during the early operation of the new legislation. It will be noticed that the Bradford Corporation intends to follow the example of London, Manchester, Liverpool, West Bromwich, and Birmingham, in not adopting any regulation restricting the speed at a lower rate than is provided in the Act, recognising that Section I. adequately protects the public. On the other hand, several smaller places intend to limit the delights of motorists in a way that should warn all drivers to exercise caution, taking care to do nothing to warrant the re-imposition of the measure in three years' time. On page 864 we give the number of automobiles registered up to the time of going to press.

The South Lincolnshire Club.

IN the historic town of Boston, in Lincolnshire, a motor club has just been formed, and at the inaugural meeting, reported on another page, Dr. Miller said there were sufficient motorists in and about the town to warrant the formation of such a society. A low subscription has been suggested, so that motor-cyclists may be encouraged to join. In the development of these small provincial associations there is much hope that a healthy opinion may be created among motorists in favour of showing full consideration to other users of the road.

The Supply of Drivers.

AN experienced driver, who is also capable of doing all kinds of motor-car repairs, writes to deprecate the views of those who speak of the difficulty of obtaining efficient drivers of automobiles. He declares it to be quite a mistake. There are many good men who cannot obtain situations, and he suggests a warning should be given to young men who contemplate leaving other callings to become motor-car drivers. They may spend money—they will certainly spend time—in learning to drive, and then discover their talents are unwanted. This is a state of things that must almost inevitably occur. We would, however, point out that we have not expressed strong views as to a dearth of experienced drivers; our complaint has been with regard to the manners and methods of many who have been employed. The motor-mechanic should remember that he is the driver, and not the owner, of the car upon which he sits.

Potatoes and Petrol.

A NATIONAL Potato Society is the latest organisation which has been formed in this country, and with Mr. Walter P. Knight, the horticultural superintendent to the Kent Education Committee, as hon. secretary, a good beginning has been made. But is not Mr. Wright too sanguine as to the possibilities of the tuber with which the enterprise of Sir Walter Raleigh will always be associated in the popular imagination? He has told a credulous newspaper correspondent that "there is a possibility of manufacturing petrol out of potatoes. An eminent professor has declared that this could be done out of potatoes which, under ordinary conditions, possessed little or no market value." Seeing that petrol is a mineral product, this is a wonder of science that was hardly expected even in an age of the marvellous. But perhaps the secretary of the National Potato Society has alcohol in his mind—figuratively, of course. And the day of the alcohol motor is not yet—at least in this country. But there is no reason why the potatoes should not be grown ready for its development.

The Public Use of Private Cars.

THE decision of the executive committee of the A.C.G.B.I. to prosecute in a case where the car of a member was let out on hire while in the keeping of the proprietor of a garage, will be welcomed by private gentlemen who have to trust their vehicles to the care of such concerns. This is not an isolated case—both in London and the provinces instances have occurred where automobiles, placed in the keeping of firms having convenience for the storage of cars, have been allowed out by unauthorised persons as well as by the employees of the garage. Such unwarrantable liberties with expensive carriages should not be allowed, and it is to be hoped that the publicity given to the evil will tend to check its growth.

The Motor-Van and Wagon Users' Association.

THE first fifty members of the Motor Van and Wagon Users' Association comprise a representative selection of the leading commercial houses of the country. Several branches of industry are comprised in the membership, including Bass, Ratcliffe and Gretton, the Schultz Gunpowder Co., Lever Bros., Debenham and Co., Pickfords, Ltd., Pullar and Sons, Cadbury Bros., Harrod's Stores, and other equally well-known firms. For the new association there is a wide and growing sphere of utility, and not only can it do much to protect the interests of those already employing motor-wagons, but it can help to educate those who do not to a knowledge of the increasing efficiency of the motor-vehicle.

North of the Tweed.

THE Lord Provost of Edinburgh will preside at the annual dinner of the Eastern Section of the Scottish Automobile Club on the 21st inst., when the guest of the evening will be the Right Hon. A. Graham Murray, M.P., the Secretary for Scotland. In thus securing the support of Mr.

Murray Scottish motorists are to be congratulated, for he is a practical motorist—S.J.1 is his identification mark—and is not likely to sanction many of the rash suggestions that have been made by prejudiced local authorities in Scotland. In many respects the Scottish Club is in a very enviable position, and the way it has been supported by all the leading public men in Scotland has been a great contributory factor in its success.

New York's Riverside Drive.

No city in America possesses such a magnificent stretch of boulevard as skirts the beautiful Hudson river in New York. The famous riverside drive was not constructed in a day, and the improving of it is yet far from complete. Starting at Seventy-second street, the drive will continue, when finished, for a distance of four and one-half miles and offer a panorama to the New York automobilist and pedestrian such as they cannot find elsewhere. Hills are interspersed along the drive, such grand monuments as the Soldiers' and Sailors' Memorial and Grant's Tomb adorn it, and across the river the cliffs of the Palisades add to the beauty of the scene. On any pleasant morning, especially Sundays, the Drive is, states the "Motor," of New York, crowded with vehicles of all kinds, while processions of

In South Africa.

THE first prosecution for the alleged furious driving of a motor-car in South Africa took place at Cape Town early last month, Mr. E. A. Curtis being the defendant. From the evidence, it appeared that the motorist exceeded the speed limit of eight miles an hour, and rounded a corner at a greater speed than three miles an hour. There was a third charge against the defendant for having no light attached to the vehicle. The magistrate found the defendant guilty on all charges, and fined him on the first charge £1, and for the second and third he was fined £5, making £6 in all. Evidently the South African magistrate is not unlike his Surrey brother in some respects.

Post Offices and Names.

OFTEN have motorists been worried at the absence of the names of the villages above some of the smaller post offices in the country districts. These public institutions should have the name of the locality in which they are situated clearly painted in a conspicuous position, and it is the practice of the postal authorities to require the exhibition of the names. We shall be glad to hear from readers as to villages and ham-



A Snapshot on New York's Riverside Drive.

pedestrians line both sides of the thoroughfare. The Hudson river is covered with pleasure craft—there being several yacht and boat clubs located on its banks—and the entire scene shows the energetic American in the keenness of his enjoyment.

Motor-Cars and Electrical Tramway Work.

IN the course of an article by Mr. L. E. Harvey on Tower wagons for use in connection with the maintenance of the overhead conductors of electrical tramways, in a recent issue of the "Electrical Review," the author points out that "Automobile emergency wagons are now coming to the fore, and there is no doubt that they are very suitable for this class of work, as they are very speedy, their under-carriage is heavy and low down, and they can be shifted back or forward very steadily, to say nothing of their running costs being much less than those of two horses, and of their taking less stable room and being quicker started out. Leeds, Bradford and Aberdeen have now got these wagons. Bradford was the first in the field, and they found it so handy and economical that they recently purchased a second. This is a four-cylinder Milnes-Daimler chassis, the superstructure being designed and made at the tramway depot. Leeds got a precisely similar truck and fitted a superstructure on the same lines as the Bradford one, and the writer has been assured that they are far better than horse-drawn wagons in every way."

lets where this duty has been neglected. The matter is a minor one, but upon such a multitude of minor matters the pleasures of touring greatly depend.

The Marine Motor.

IN its excellent Winter and Mediterranean issue the "Yachting World" has an article on the future of the motor-boat. Although Daimler fitted his V-shaped twin-cylinder engine to a launch before trying it on a car, the marine motor owes its chief features of design to the Pygmy motor of M. Leon Lefebvre, with its large accessible crank-case, its equally accessible valve-chest, and its general simplicity of construction all round, to say nothing of its compactness and low-carried centre of gravity. The writer discusses the technical details of the subject with ample knowledge, and on the much-discussed subject as to whether the high tension and jump-spark, or low-tension with make-and-break, will be the system of ignition used on the marine engine of the future has opinions which coincide with the practice of several leading British, French, and American makers. The low-tension plan, he points out, is far less liable to short-circuit than the high-tension, while it gives an increased size of spark, and ensures the non-fouling quality of the electrodes. It is said that half a dozen different motor engineers are now experimenting with the view

of using paraffin, and the writer of the "Yachting World's" article expresses an emphatic opinion in favour of heavy oil as "the fuel of the future."

English Advance.

WE learn that the Wolseley Tool and Motor Car Company, Limited, contemplate putting a "night shift" into operation at their Birmingham works, and that the average output of finished cars during the past year was at the rate of nine per week. This is not taking into account the large amount of work which was carried out for the War Office. The new works which have been acquired at Crayford, Kent, have been installed with a plant of machinery capable of giving an output at the rate of twenty cars per week. They will be devoted to the manufacture of the 6-h.p. light car and other special types. The works and ground attached thereto occupy twenty-five acres, and a track for testing the cars is being prepared.

To Devon and back.

NOT often do motorists keep a log of their travels with the exactitude with which Mr. Beadle filled his book on the trip to Devon he details on another page. His running expenses worked out to less than a halfpenny a mile, and evidently his experiences were pleasurable indeed. Such a record dispels the idea that the automobile is an extravagant sort of beast. Well cared for and well driven it has few vices and can be relied upon to take folks to the end of their journey without loss of temper and at a considerable gain in time.

Motoring and the Eyes.

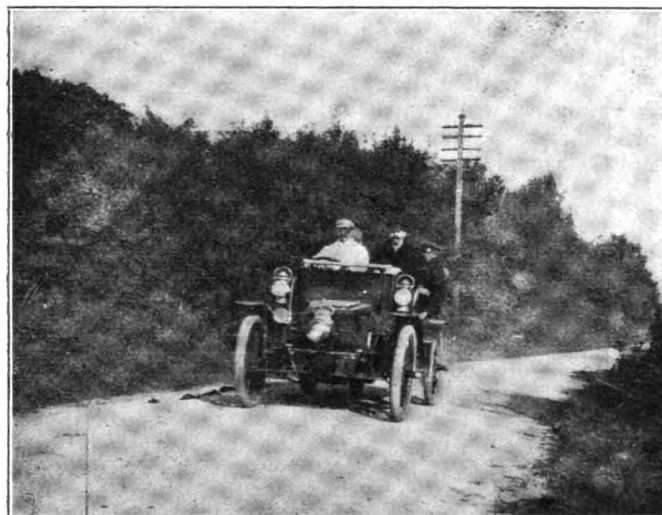
IN a recent number of an American medical journal Dr. A. Edward Davis states that during the past year he has observed several cases of conjunctivitis, acute and chronic, which could be attributed to no other cause than rapid riding in motor-cars with the eyes unprotected. The direct causes of the inflammation are said to be the friction of the wind against the sensitive covering of the eye and chilling of the eyeball. As the wind and the cold are the specific causes of the inflammation, it will be recognised that when out for extended automobile trips, during the late autumn and winter particularly, it is important to protect the eyes with goggles or eye shields. The remedy for this sort of eye inflammation, according to Dr. Davis, consists in the application of cold compresses to the eyes for fifteen minutes at a time, three or four times a day, and the application of mild astringent washes by means of an eye cup twice a day. Latent and chronic inflammation of the deeper eye tissues may be made active again by driving in the cold, and in such cases riding in the open must be discontinued, the active use of the eye for close work discontinued, and an oculist consulted.

Municipal Motor-Cars.

It is clearly evident that all experts who have charge of any large undertakings, whether trams, roads, water, electric light, or anything else of the kind, recognise the facilities that they can obtain from the use of the automobile. The time will shortly come when every municipal authority will possess a motor-car for the use of those officers who require to get quickly from place to place, and we should like to see the question considered from the point of view of convenience of all such departmental officers rather than the immediate necessities of any special branch. Friends of automobilism on Borough Councils can do much to assist the movement by pressing this matter to the notice of their colleagues, and thus preventing the sectional discussions which have not always had the desired effect up to the present. There is no doubt as to the value of the motor-car for inspection work. Its reliability has been fully tested in public trials as well as by private experience, and it only requires tactful advocacy to secure a motor vehicle for the use of every municipality throughout the country, such car to be available for whatever department requires it most.

Co-operative Garage.

A DISTINCTLY novel idea in connection with automobilism has just been adopted in Havana. It appears there are thirty-eight motor-cars owned in that place by some twenty-six persons. Seventeen of the latter have formed the Havana Garage Company, with a capital of 10,000 dollars. This has been started with a view to storing and doing all cleaning, etc., for the vehicles owned by those who constitute the shareholders. In addition, qualified engineers will be engaged for repair work, and it is also hoped, by the adoption of this co-operative plan, to secure supplies of fuel, oils, etc., at comparatively low rates. The development of the idea will be watched with considerable interest, and there are localities in this country where, with efficient organisation and someone willing to take the initiative, something of a similar kind could easily be carried out.



Mr. Mawdsley Brooke Piloting a Brooke Car to London.

A Driving Manual.

ALTHOUGH experience is the best teacher of the art of motor-car driving, some useful hints can be gleaned from manuals when they are written by practical people—a reflection that comes to us after a perusal of a book of nearly two hundred pages just issued by the Lanchester Engine Co., Ltd. This is the second part of a pocket manual they propose to publish, the first section being a description of the car and the third, not yet issued, dealing with the vehicle from the engineer's or repairer's point of view. Thus will be provided a serviceable handbook primarily for owners of Lanchester cars, but of practical utility to motorists generally. The second part contains full instructions for drivers' and attendants' use, and the lucid letterpress is made even more clear by scores of drawings and illustrations of working parts.

Motor-Cars for Military Purposes.

GENERAL GREELY, chief signal officer of the U.S. army, has just made his annual report, in the course of which he refers to the question of motor-cars as follows, "In view of the prospective value of motor-propelled vehicles to telegraph and balloon trains, the chief signal officer of the army has continued experiments with automobiles. The signal corps' experiences have demonstrated the practicability of self-propelled vehicles for such military purposes. While the good points of electric and steam vehicles are thoroughly recognised, yet the internal-combustion type, using kerosene or other oil, seems

preferable for war purposes. This type has especially valuable features from a military standpoint in its small fuel and water consumption, essential qualities to any army in the field.

Dangerous Roads.

IN our correspondence columns a resident of Cambridgeshire calls attention to a dangerous bridge on the main road from Chatteris to Ely. In the Fen district there are many such places of which motorists had better beware. Beyond Boston we know of several drains—relics of the old enthusiasm for draining the fens—which are quite unprotected, and into which motorists, unaccustomed to the peculiarities of that part of the country, might easily fall. There is plenty of work for the newly-formed South Lincolnshire Club, as well as for the Eastern Counties and other automobile organisations in that part of the country, in arousing the interest of local authorities. We are always open to receive intimations from our readers of such dangerous spots as those indicated by our correspondents, because there is no doubt that the publicity thus afforded frequently has a good effect on the local authorities concerned. Too often they allow their energies to become lax, and a little newspaper warning, backed up by keen agitation on the part of local motorists, may do much to urge them to a greater sense of their public duty.



Mr. Winthrop E. Scarritt, President of the Automobile Club of America.

English Entries for the Gordon Bennett Cup.

THE last day for the entries for the Eliminary Trial to select the British team in the Gordon Bennett contest having expired, we are now able to announce that four firms will struggle for the honour of representing this country at Homburg in June. Last week some particulars of the Hutton racers were given. Reference had previously been made to the Napier vehicles, and we are now able to announce that the Wolseley Tool Company have entered three cars. Two of these will be of 96-n.h.p. and the third of 72-n.h.p. In the design the surface exposed to the wind pressure will be reduced to the lowest possible point, while the centre of gravity will be brought extremely low. The horizontal four-cylinder type of motor will be retained, it being claimed by the makers that this enables the car to negotiate corners and bends in the roads at a very high rate of speed. The Darracq Company, which has now an

English factory, has also entered, and, in all probability, fourteen British built vehicles will take part in the eliminating test.

Travelling in the Dark.

A CORRESPONDENT—No. D. 38, to give his official title as recorded in the chronicles of the county of Kent—suggests that drovers should be compelled by law to carry lights when driving cattle on the roads. He nearly ran into some sheep and bullocks a short time ago; fortunately they were on their right side of the road, or the consequences might have been serious. The difficulty, and it is a very real one for those who motor after daylight, might be minimised if the old sheep bells could be revived, and there was something of a reversion to the days of poetic delight in the country. But the rural districts are losing their rusticity, and utilitarianism has laid a heavy hand on country ways and customs. Otherwise the sheep bell would still warn motorists as to the presence of flocks and herds and other terrors of the highway.

The Motor on the Farm.

PROFESSOR JAMES LONG, an agricultural authority of recognised repute, has been advocating the claims of the motor as a friend to agriculturists. In the columns of the "Manchester Guardian" he claims that the adoption of the motor by British farmers would effect an annual saving of six millions sterling—an economy that should bring the smile of prosperity to the decadent agricultural interests. He contends that in the average season there is a stupendous loss in English farming entirely owing to the slowness of the methods employed. By the aid of the motor "we shall not only reduce the cost of cultivation per acre and indeed of harvesting as well, but we shall get through our work with infinitely greater speed and reduce direct losses and risks to a minimum." On the financial side Professor Long's calculations are equally important. The total cost of harvesting and threshing on the present lines is said to be 17s. 2d. an acre, whereas the motor can reap and thresh at a cost of 9s. 4d. an acre. It is also claimed that ten acres can be reaped and threshed in a day by the aid of the motor and eight men. In the ordinary way the same work would require four men and a pair of horses for cutting; seven men and five horses for carting; six men for stacking; three men and two boys for thatching; and for threshing ten men and a pair of horses; or, in all, a single day's work for thirty men and boys and nine horses.

THE International Motor Car Company, Limited, of High Street, Marylebone, is in no way connected with the International Automobile Company, Limited.

MESSRS. S. R. BAILEY AND LAMBERT, LIMITED, have been registered with a capital of £5,000 to adopt an agreement with Messrs. S. R. Bailey and L. Lambert, and to carry on the business of manufacturers of, dealers in, and agents for motor-cars, etc.

THE Electric and General Assurance, Limited, has been registered with a capital of £10,000 to insure against loss or damage arising from tramway, light railway, motor-car, and similar accidents. The first directors are Messrs. P. Carvill, J. H. Albright, J. Devonshire, and G. Cornwallis-West.

THREE entries have been received by the Automobile Club of America for the Gordon Bennett race—one by the Peerless Motor Car Company, of Cleveland; one by Mr. Alden Sampson, of Pittsfield, Mass., and one by Mr. Peter Cooper Hewitt, of New York. Mr. Sampson's car will be built by a firm in Pittsfield, Mass. Mr. Hewitt's machine is being built by the Trenton Iron Company, of Trenton, N.J., and is said to be nearly completed. The racing committee of the A.C.A. has decided to hold the eliminator trials at least six weeks prior to the date of the Cup race, and some time between April 15th and May 15th. The nature of the trials and the course on which they will be held have not yet been decided.

THE MOTOR CAR ACT.

—v—

A DEPUTATION from the Yorkshire Automobile Club, consisting of Messrs. W. Jackson, A. Lingard, and H. A. Jones, has waited upon the Watch Committee of the Bradford Corporation, to urge the committee not to fix any regulations restricting the speed at a lower rate than

dangerous to the public, having regard to the circumstances of the case, including the nature, condition, and use of the highway and the amount of traffic which actually is at the time or which can reasonably be expected to be on the highway, he becomes subject to the penalties under the Act." This has been adopted by the London County Council and the City Councils of Liverpool, Manchester and Birmingham.

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The Prince of Salm-Reifferscheidt, the Honorary President of the Rhenish-Westphalian Automobile Club.
[Allgemeine Automobil Zeitung.]

the Act provides, subject, of course, to the proviso of driving to the public safety. Mr. J. Moorhouse, chairman of the committee, presided; and it was decided to postpone the making of any regulations for six months, and to allow the Act to work out by itself, subject to Section 1, which reads:—"If any person drives a motor-car on a public highway recklessly or negligently, or at a speed or in a manner

The Leeds Corporation Watch Committee at a meeting have received a joint deputation from the Yorkshire Automobile Club and the Leeds and District Motor Cycling Club with reference to the powers sought by the City Council for the restriction of the speeds of automobiles within the boundaries of the city. The Watch Committee propose to limit the speed of all motor-cars

and cycles within a radius of two miles from the centre of the city to ten miles an hour, and within a radius of one mile to seven miles. The deputation contended that the proposed regulations would be more stringent than was justifiable, and pointed out anomalous conditions which would obtain under them. The Committee afterwards discussed the points raised, and eventually decided to abide by the original regulations proposed.

At Huddersfield the Corporation have asked the Local Government Board to fix the speed limit at seven miles per hour for a radius of one mile from the Market Place, and ten miles for a radius of between one and two miles.

Great dissatisfaction is said to prevail among the more narrow-minded section of the people of the chief towns in Buckinghamshire in reference to the decision of the Bucks County Council with regard to the working of the new Act regulating the speed of motor-cars. The Act provides for applications to be made to the county council from urban districts for the speed of cars to be limited to ten miles an hour when passing through urban areas. Applications for this restriction have been made by Slough, Marlow, Beaconsfield, and other urban councils in Bucks. The County Council, however, have decided not to apply to the Local Government Board to prescribe a reduced speed limit under Section 9 of the Act, being of opinion that the stringent clauses and ready means of identification which the Act provides will be found a sufficient protection for the general public.

Superstition as to the ill-luck attaching to the number thirteen has made itself apparent. A Shropshire journal reports in that county this number fell in the ordinary course to a lady motorist. She promptly had it sent back, and said she would prefer a change. The request was acceded to. This, however, was not the end of the difficulty. A driver sent to register his master's car accepted the discarded No. 13, but came back next day with the message that his master's daughter would be better satisfied with another number! "Thirteen" after this was not tried again with cars, and is now cancelled so far as the county of Salop is concerned.

As a general rule cars have been registered in the localities in which their owners reside, but in Scotland this has been departed from in several cases. At Glasgow there have been a number of registrations of motor-cars from Dumbartonshire, Stirlingshire, Renfrewshire, and Edinburgh.

In our next issue we propose to commence the publication of a list of owners of motor-cars whose vehicles have been registered in their respective districts. In order that this may be made comprehensive motorists are invited to favour us, not later than Tuesday next, with their names, addresses, and registered numbers for publication in the list, which will be of interest as the first attempt to obtain an authentic record of British motorists.

Earl Cottenham and other local leaders in the Uttoxeter district have become motorists, and the movement is becoming very popular in that part of Staffordshire. The Stafford County Council are acting very well towards motorists, and, as far as we can learn, are not making any restrictions about closing roads and limiting the speed through towns and villages, leaving it to the good sense of the motorists themselves. The police, too, are very reasonable in their attitude.

Notice of intention to apply to the Local Government Board for a ten-mile-an-hour limit of speed for motor-cars has been given by the authorities of the following places:—St. Helens, Oxford, Winchester, Wallsend, and Barry.

In most cases the drivers' licences issued by the county and borough authorities outnumber the registrations of cars. Brighton

seems to have been an exception, for whereas up to the 31st ult. 107 cars and motor-cycles had been registered only ninety-three drivers' licences had been issued. At Hastings, forty-six cars and cycles were registered and fifty-eight licences issued. In Sussex, where 332 automobiles were registered, licences were issued to 375 drivers.

The Act came into operation on the 1st inst., and within four days one motorist had cancelled the registration of his car. Mr. G. T. Langridge, of Epsom, registered his automobile in two places, receiving in East Sussex the identification mark A.P.26, and in the other district a number he liked better. Thereupon he decided to cancel A.P.26, and thus achieved the distinction of being the first motorist to cancel a registration.

One of the first matters that will occupy the attention of the County Purposes Committee of the City of London Corporation, at its first meeting this year, at the end of the month, will be the question of the speed of motor-cars in the City. Numbering and licensing are dealt with by the London County Council, but "within any limits or place referred to in regulations made by the Local Government Board, with a view to the safety of the public, on the application of the local authority of the area in which the limits or place are situate, a person shall not drive a motor-car at a speed exceeding ten miles an hour." The Committee will therefore have to determine whether, in its opinion, any and what streets within its jurisdiction should be included in such restrictions—a matter of more than general interest in view of the narrow and tortuous City thoroughfares.

The Holland Quarter Sessions were held at Boston on Monday, Mr. W. Garfit, M.P., presiding. The Chairman, in charging the Grand Jury, drew attention to the Motor Act. He said they all knew that there were some scorers who had brought motorists rather into disrepute, but he thought they must all admit that motor-cars generally were driven with care. Like bicycles, automobiles had come to stay, and therefore Parliament had passed an Act for their regulation.

In continuance of the lists previously given of the first motorists to register their vehicles in their respective towns and counties we now publish the following "No. 1's."

ENGLAND AND WALES.

BRIGHTON.—Mr. F. H. Nye, Broadwater, Worthing, C.D.1.

BURTON-ON-TRENT.—Mr. G. F. Reading, L.D.S., Nunneley House, Bridge Street, Burton-on-Trent, F.A.1.

SHROPSHIRE.—Captain Foster, Woodcote Hall, Newport, A.W.1.

HUDDERSFIELD.—Mr. F. W. Mills, Thornleigh, Huddersfield, C.X.1.

LEEDS.—Mr. A. Currer Briggs, Lord Mayor of Leeds, U.I.1; Mr. Rowland Winn was the first to take out a dealers' license in Leeds.

SCOTLAND.

ROXBURGHSHIRE.—Dr. W. Blair, Abbey Green, Jedburgh, K.S.1.

BERWICKSHIRE.—Sir G. Houston Boswall, Bart., of Blackadder, Edrom, S.H.1.

LEITH.—Mr. G. W. Mackie, Trinity Grove, Leith, W.S.1.

RENFREWSHIRE.—Mr. W. Todd, Lithgow, Drums, Langbank, H.S.1.

FORFARSHIRE.—A. M. White, Middleton, Friockheim, S.R.1.

MESSRS. R. MARTIN AND SON have a garage to accommodate twenty cars in the King's Road, Newbury, and recently supplied a car for the use of the local postal authorities. They have every facility for the repair of cars, the charging of accumulators, etc.

MOTOR-CAR REGISTRATIONS.

BELOW we publish the number of cars and motor-cycles registered and drivers' licences issued in various counties and boroughs up to the time of going to press; in our next issue the list will be brought up-to-date.

Owing to the large number of applications for registration and licences under the new Motor Car Act, it has been found impossible for the authorities to immediately cope with them. The consequence is that many cars are still on the road unnumbered, and on Wednesday the Commissioner of Police for the Metropolis issued instructions to the effect that no proceedings were to be taken at present with regard to the cars which were still unnumbered.

A conference was held on Thursday of the Motor-Car Committee of the County Councils Association and a committee representing the Association of Municipal Corporations and County and Non-County Boroughs to consider the question of sign-posts.

It was believed that no difficulty would be experienced in formulating a uniform scheme that would prove acceptable to the Government.

BOROUGHES.

	MOTOR CARS.	MOTOR CYCLES.	TOTAL.	DRIVERS' LICENCES.
Bolton ...	17	22	39	35
Canterbury ...	19	14	33	16
Cardiff ...	27	35	62	80
Devonport ...	4	2	6	7
Croydon ...	75	77	152	175
Bradford ...	—	—	60	—
Brighton ...	62	71	133	107
Aberdeen ...	13	13	26	35
Blackburn ...	11	11	22	23
Birkenhead ...	28	17	45	53
Bath ...	17	21	38	39
Bootle ...	4	7	11	12
Bristol ...	81	115	196	228
Bournemouth ...	81	40	121	141
Burton-on-Trent ...	7	22	29	20
Chester ...	16	5	21	12
Coventry ...	23	39	62	159
Derby ...	31	23	54	64
Exeter ...	12	5	17	21
Edinburgh ...	97	36	133	151
Glasgow ...	89	26	115	118
Gloucester ...	8	12	20	20
Greenock ...	9	5	14	20
Hanley ...	11	6	17	11
Ipswich ...	24	14	38	43
Hull ...	23	48	71	78
Leith ...	10	6	16	38
Liverpool ...	118	107	225	231
Leeds ...	81	37	118	173
Huddersfield ...	31	9	40	46
Hastings ...	28	18	46	—
Manchester ...	227	126	353	363
Middlesborough ...	16	12	28	34
Nottingham ...	45	60	105	127
Newport, Mon. ...	12	18	30	30
Northampton ...	19	27	46	52
Oldham ...	12	20	32	44
Oxford ...	20	36	56	72
Paisley ...	11	11	22	49
Preston ...	9	31	40	52
Salford ...	39	21	60	61
St. Helens ...	13	10	23	25
Swansea ...	24	32	56	48
Walsall ...	13	15	28	32
West Hartlepool ...	9	18	27	33
Warrington ...	24	19	43	35
Worcester ...	18	—	18	18
Reading ...	26	21	47	62
Norwich ...	31	26	57	61
Wolverhampton ...	37	22	59	65

	MOTOR CARS.	MOTOR CYCLES.	TOTAL.	DRIVERS' LICENCES.
West Ham ...	25	47	72	68
Wigan ...	13	11	24	16
Rotherham ...	5	7	12	10
Rochdale ...	13	3	16	22
Dublin ...	32	66	98	122
Belfast ...	56	62	118	121
Londonderry ...	1	6	7	7

COUNTIES.

	MOTOR CARS.	MOTOR CYCLES.	TOTAL.	DRIVERS' LICENCES.
Aberdeen ...	15	17	32	32
Dumfries ...	27	10	37	48
Forfar ...	14	17	31	47
Haddington ...	18	6	24	33
Linlithgow ...	14	1	15	16
Peebles ...	18	8	26	24
Perth ...	29	23	52	68
Selkirk ...	4	3	7	9
Stirling ...	31	18	49	52
Kinross ...	1	3	4	4
Bute ...	1	—	1	1
Ross and Cromarty ...	9	2	11	10
Clackmannan ...	7	3	10	13
Argyll ...	11	4	15	17
Renfrew ...	23	4	27	48
Midlothian ...	20	7	27	34
Kirkcudbright ...	19	8	27	32
Fife ...	38	14	52	63
Dumbarton ...	26	8	34	52
Queen's Co. ...	7	5	12	11
Longford ...	—	2	2	2
Kildare ...	12	18	30	35
Kilkenny ...	15	4	19	23
Westmeath ...	4	4	8	7
Louth (Ireland) ...	4	10	14	14
Essex ...	173	115	288	—
Derby ...	115	72	187	208
Hampshire ...	60	43	103	88
Gloucester ...	98	80	178	201
London ...	—	—	2,742	—
Sussex, East ...	143	82	225	—
„ West ...	60	47	107	—
Yorkshire, East Riding ...	28	18	46	68
„ North Riding ...	48	29	77	85
„ West Riding ...	188	133	321	429
Worcester ...	77	64	141	242
Nottingham ...	96	67	163	201
Rutland ...	8	14	22	19
Cumberland ...	45	64	109	117
Lincoln (Lindsey Division) ...	38	27	65	76
Warwick ...	89	101	190	285
Carnarvon ...	21	12	33	36
Stafford ...	120	94	214	312
Hertford ...	144	129	273	330
Berkshire ...	158	106	264	306
Oxford ...	60	44	104	117
Suffolk, East ...	71	40	111	129
„ West ...	64	25	89	112
Devon ...	87	80	167	150
Salop ...	69	44	113	127
Cheshire ...	98	161	259	358
Hereford ...	27	34	61	65
Bucks ...	75	77	152	176
Cornwall ...	51	34	85	96
Westmorland ...	14	38	52	57
Radnor ...	2	1	3	3
Launceston ...	260	180	440	700
Somerset ...	121	64	185	204

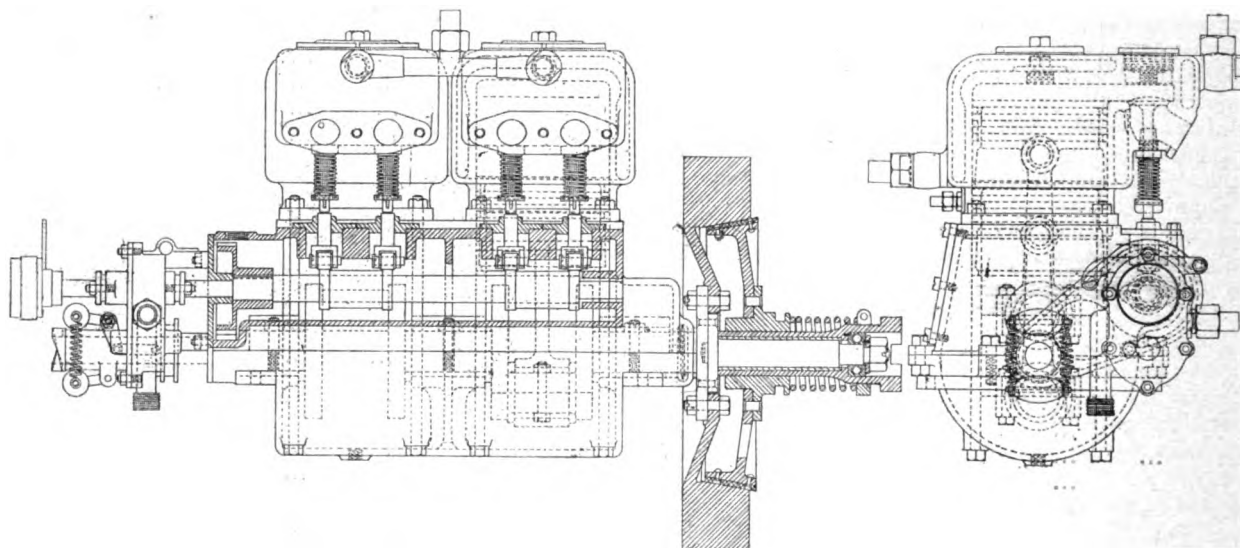
Totals ... 11,418 9,035

THE "STANDARD" 12-15-h.p CAR.

A NEW car, which, while outwardly following the usual lines, comprises a number of interesting features, is that which is now being turned out by the Standard Motor Company, of Coventry, and of which an illustration is given herewith. The object of the builders has been to produce a car which will not travel at a greater speed than twenty-five miles per hour on the level, and yet possesses sufficient power to

adjustments are automatically accomplished by the governor, although a hand-lever, mounted on the steering-wheel, enables the governor to be cut entirely out of action at any desired speed. The water circulation is maintained by a pump and honeycomb radiator, a fan driven from the engine shaft inducing a strong blast of air through the cooling tubes.

Passing now to the transmission, four speeds forward and a reverse are provided. The clutch is of the self-contained type, so designed that no end thrust is put on the crank-shaft bearings



Figs. 1 and 2.—Part Sectional Elevations of "Standard" 12-15-h.p. Motor and Clutch.

climb ordinary gradients at a speed of from sixteen to eighteen miles per hour, so that on a long run a very good average speed can be maintained. The frame of the car is built of I section steel, tapered and bent at the ends and electrically welded by a special process, a strong and rigid frame being thus secured. The motive power is supplied by a two-cylinder engine of 12-15-h.p., a novel feature of which is the short stroke in relation to the bore, the cylinder dimensions being 5 in. diameter by 3 in. stroke. It is claimed that this enables the engine to be run at as low as 250 revolutions per minute without jumping or knocking, and at the same time permits the speed to be accelerated to over 2,000 revolutions without excessive wear, the piston speed at the latter rate, owing to the short stroke, being comparatively low. The normal speed of the engine is 1,200 revolutions per minute. The crank shaft and connecting-rod bearings throughout the engine are of large size, and the big end is readily adjustable through inspection doors in the base chamber. The cam shaft is parallel with the engine shaft, and actuates the tappets of the valves, which are all mechanically-operated, and so arranged that any one of them may be removed without interfering with the others. On an extension of the cam shaft driven by a claw coupling are the pump and contact breaker. The latter is of the wipe self-adjusting type. The governor, which is mounted on an extension of the crank-shaft, actuates a sleeve connected with the extra air supply and throttle-valve of the carburettor. The latter is of an improved design, and is so arranged that all

whilst power is being transmitted from the engine to the gear-box. Between the engine and clutch is arranged an Oldham coupling, which allows of the power being transmitted at constant speed without throwing undue stresses on the shafts should they be slightly out of line. From the gear-box the power is transmitted to a live axle through a universally-jointed shaft and bevel gearing. The change-speed gear is of the sliding type, with a direct drive on the top speed, none of the gear wheels being in mesh. The whole movement, from reverse right through the various speeds, is effected by means of one lever. The bearings of the gear-case are adjustable without interfering with the joint. An inspection cover is fitted, so that the gears may be readily examined. The bevel gear and back axle bearings are of special design. The small bevel pinion shaft is not only

mounted on a double row of large adjustable ball bearings, but a cage is also fitted to the end of the thrust-block; this cage carries a bush which forms a bearing for the outer end of the bevel pinion shaft, so that the pinion is held in absolutely pitch alignment with the larger bevel, it being claimed for the arrangement that not only is a perfect drive secured, but freedom from the humming noise usually given out by bevel gears running at high speeds. The road wheels are of the artillery type, 32 in. diameter. A set of four brakes is provided, the drums being attached to the rear hub flanges by bolts. An internal expanding brake in each drum is applied by a pedal actuated by the right foot of the driver, while for emergency purposes a hand-lever

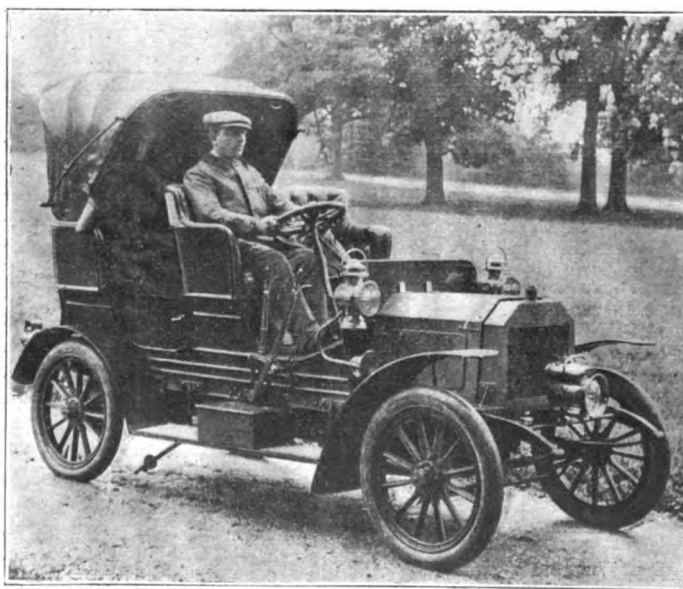


Fig. 3.—General View of "Standard" 12-15-h.p. Car.

controls contracting brakes working on the outer surface of the drums. No brake action is taken through the driving pinions or joints, thus excessive stresses are not suddenly applied to these parts. The body of the car is of the double phaeton type, and is comfortably upholstered and mounted on easy springs.

A few days ago we had a twenty-five miles' run over a hilly course on the car illustrated, and can testify to the "picking up" powers it possesses on the hills. We may also remark that it is very quiet when running, and, owing doubtless to the long-wheel base, is very free from vibration.

SOME USEFUL NOTES.

WE saw a simple but exceedingly useful device on a car recently, by means of which the amount of petrol in the tank can easily be gauged. The plug or cap closing the inlet hole in the tank has attached to it a thin strip of hard red fibre, about an inch wide, the length being such that when the cap is screwed home the strip just reaches to the bottom of the tank. Thus whenever the plug is removed the strip which is withdrawn with it at the same time shows clearly the height of the petrol in the tank. By going to the trouble of emptying the tank and then filling it quart by quart or pint by pint, testing with the fibre strip after each addition and making a sharp notch with a three cornered file to correspond to each pint or quart, a useful and easily applied gauge will be obtained.

IN the course of a circular issued by Messrs. Brandes and Company, they point out that the re-charging of an accumulator needs a great deal of care; only experience and a high voltage dynamo will do it successfully and economically. Re-charging does not mean simply placing on the charging board and turning the current on—care must be taken to see that the acid is of the proper density, all sulphated plates taken out, cleaned and replaced, terminals perfectly clean. Great care is also required to see that the charging itself is done at the proper rate, otherwise there is danger of bent plates, resulting in short circuiting. A plating dynamo will not do the work, because the charge the accumulator is actually receiving cannot be controlled; the result is that charging becomes irregular, inefficient, and sometimes disastrous to both cell and plates.

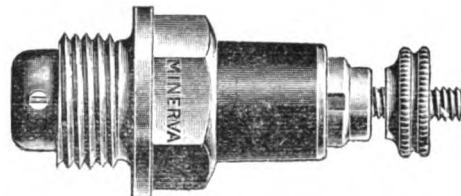
OWNERS are sometimes puzzled by a sudden loss of power apparent in their cars, so a few words concerning this may not be out of place. In the case of atmospheric valves, the inlet valves are very frequently the source of loss of power, and it must be remembered that the temper of the valve springs is not a certain quantity, as it is liable to be affected by the heat. The inlet valves should be looked at first of all.

THE best method of getting at an unknown trouble, *e.g.*, loss of power, is to estimate the different probable sources of trouble one by one, as by this method the cause of the difficulty can always be found. After trying and renewing, if necessary, the inlet valves, do likewise with the exhaust, and whilst with the exhaust examine the timing and make sure that this has not been interfered with. Next pass on to the accumulators and see if they are fully charged, or, at any rate, showing four volts. Many a time have weak accumulators been found at the bottom of an "unknown trouble."

UNLESS the car is missing fire badly the contact may be left alone, as this cannot alter; but, of course, if the car has been in other hands, it is well to see that the firing cam is correctly set. The carburettor is an article which, unless it is either stopped up, or floods, cannot alter itself. A thorough cleansing of a carburettor with petrol is, however, a very good thing. Recently, loss of power has been frequently caused by indifferent petrol. This is more noticeable in the smaller cars (up to about h-h.p. two-cylinder) than in the larger four-cylinder cars,

MOTOR-CYCLING NEWS.

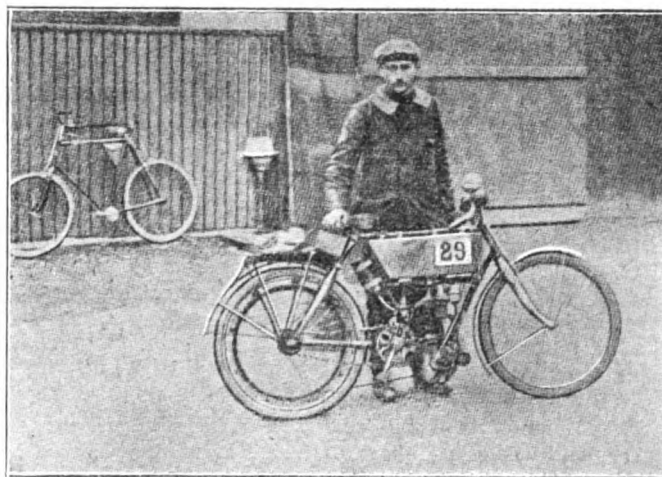
ONE of the new features of the Minerva motor-cycle set is an improved form of sparking plug, of which an illustration is given herewith. The practice adopted in 1903 of placing the plug immediately over the inlet valve, where it is scoured by the inrushing gas and protected by a partition from the burnt products of combustion, having proved most satisfactory, it is being retained. In the new plug, the porcelain and the projecting pieces of bent wire have been eliminated. The insulating portion of the plug is composed of compressed mica so adapted that it can be secured within the metal body of the plug with extreme



firmness. Through the mica body a perfectly straight wire runs, terminating flush with the dome-shaped inner end of the body. The latter has a hole in its centre just large enough to accommodate the extremity of the straight wire and to leave a ring-shaped space of about 1 mm. around it, across which the spark jumps. The force of the explosion being met by the dome, which is of strong metallic construction, there is, it is claimed, no tendency for the mica block to be loosened in the body. With ordinary usage the plug may be regarded as almost everlasting, as there seems to be nothing about it that can be liable to derangement, provision being made for scouring and cleansing the plug to any extent that the user may deem desirable.

THE E. M. Bowden's Patents Syndicate, Ltd., ask us to give publicity to the fact that they are the sole agents in Great Britain and Ireland for the F.N. motor-cycle engines.

THE members of the Motor-Cycling Club spent a very enjoyable evening on Tuesday last at the Frascati Restaurant, the occasion being the annual dinner of the club. The annual general meeting is to be held at the same place on the 28th inst.



Bonnard and the Werner Machine on which he competed in the recent Motor-Cycle Trials in France.

AT Sheffield the police have had the assistance of several motor-cyclists in some experiments with regard to the reading of numbers. A speed of over twenty miles was allowed, and there seemed great variety of view on the part of the constables as to whether the figures could be read when passing at that speed.

CONTINENTAL NOTES.

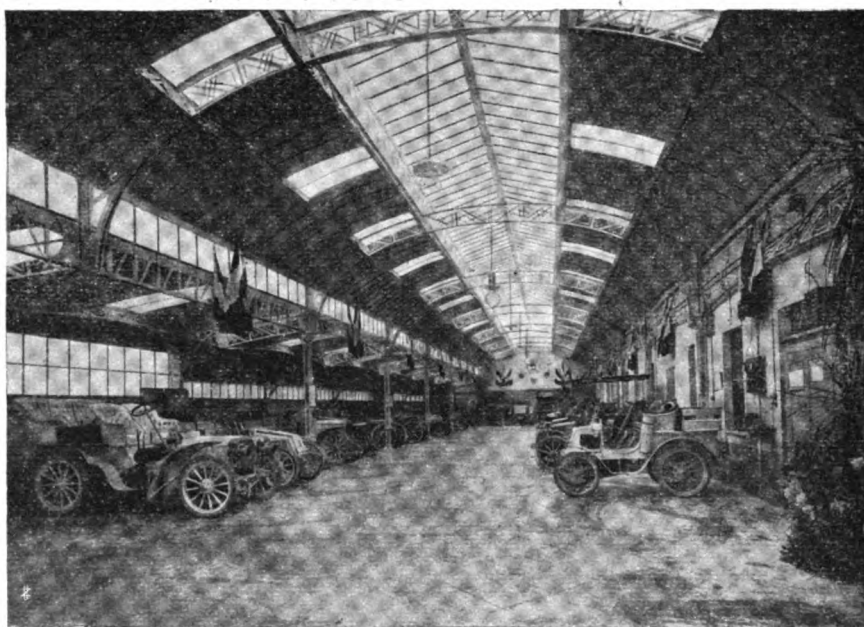
THE Mors, Gobron-Brillié, Georges Richard, Hotchkiss, and Gardner-Serpollet companies have each entered three cars, and the Turcat-Mery Company two vehicles, for the French eliminatory tests for the Gordon Bennett team. The Mors vehicles will probably be driven by Messrs. Salleron, Leger, and Jeandre. The Georges Richard cars will, it is said, be fitted with engines of 80-h.p. Altogether ten firms have entered for the French eliminatory tests, viz.—Panhard, De Dietrich, Clement Bayard, Darracq, Mors, Georges Richard, Hotchkiss, Gardner-Serpollet, Turcat-Mery, and Gobron-Brillié, representing altogether twenty-nine vehicles.

THE Italian Automobile Club has recently removed into large and well-appointed new quarters in Milan, where every convenience for motorists is available. The new premises were inaugurated by a dinner, at which over 300 were present. In proximity to the clubhouse, a club garage has also been established. This, as will be seen from the accompanying illustration, for which we are indebted to the *Rivista* of the Italian

be done in France in each department, if only a little energy were thrown into the business.

THE coming season promises to be a busy one, not only as regards motor-car competitions, but also in connection with the motor-boat movement. At Cannes, Monaco, and Nice, as well as other pleasure resorts, races are being organised. M. Paul Meyan, of "La France Automobile," has just offered a cup to the Club Nautique de Nice, which is to be competed for on the 17th April next. To become the winner's own property the cup must be won two years in succession. The race, which is to be over a distance of 100 kilometres, is international, each country being, however, only permitted to have in the race one boat, the length of which must not be more than 40 ft. Any number of entries can be sent in from each country, and a series of eliminating races will be held to select the boat to compete in the cup race. Entries are to be sent to the Club Nautique de Nice, 93, Quai du Midi, Nice, before the 30th March next.

THE Ersten Bayrischen Motor-Omnibus Gesellschaft, which started a public service in March last between Nuremburg and



The Garage of the Italian Automobile Club in Milan.

Touring Club, is a spacious building well adapted for its purpose and having accommodation for about seventy cars.

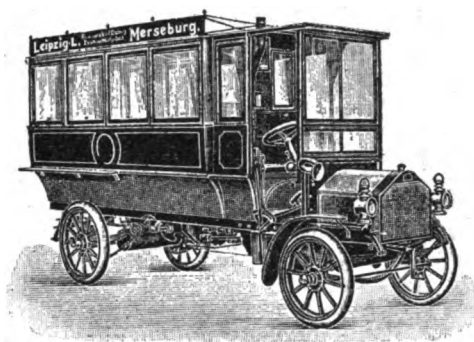
SLOWLY, but let us hope surely, British motor firms are gradually opening up connections in France. The Wolseley, Napier, and Hozier Companies have now their French agents, while recently the Electric Ignition Company, the Auto Machinery Company, and Messrs. John Marston, Limited, have appointed French representatives for their respective specialities. Brampton's motor chains have for long had a big sale in the country, and we learn that the Renold chains are now to be pushed in France. The Parsons anti-skid arrangement is already very popular in Paris, while, in addition to the Dunlop, the Collier tyre is being introduced to the French trade. Thus in all branches signs are not wanting of the development of the British motor industry. Glancing back at the recent *Salon*, the memory of which will not fade yet awhile, the only regrets we have are that none of the British builders of heavy steam wagons were represented, and that none of the big motor-cycle firms in England deemed it advisable to participate in the Show. In both these branches there can be no question that England leads the way, and we are sure that a good trade could

Heroldsberg, is gradually extending its operations. A service has lately been established between Nuremberg and Eschenau, while a contract has now been arranged with the Postal authorities for the conveyance of the mails between the places named from the 1st January.

THE Renard road-train, which was one of the features of the Paris Show, was put to a practical test on the streets of the French capital, last week. As a result, the inventors claim that their two theories of continuous traction and automatic steering have been proved to be practicable. A few trifling stoppages occurred, but these were due to the fact that the powerful motor carried by the first car had just come from the builder's works and was not running at its best. The train started from its shed at Vaugirard, loaded with passengers, followed the left bank of the Seine to the Alexandre III. Bridge, then crossed over to the Champs Elysées, and travelled up the Avenue Marigny by the side of the Palace of the Elysées. Progress so far was easy, but when the convoy reached the Faubourg-Saint-Honore an almost inextricable block ensued. After some delay, the train, with a fine sweep, entered the courtyard of the President's Palace, where the inventors were presented to the

President, who warmly congratulated them. The convoy, which afterwards turned into the Rue Royale, and performed various serpentine evolutions on the Place de la Concorde, threaded its way as easily as a single car through the maze of traffic, though it is true that the latter remained at a standstill to let it pass.

A PUBLIC service of motor-cars has recently been established between Leipzig and Merseburg, Germany. The vehicles, one of



which is illustrated herewith, have been supplied by Messrs. Stoewer Brothers, of Stettin; they are provided with 10-h.p. double-cylinder engines and have accommodation for twelve inside passengers. The transmission is by means of side chains and the road wheels are shod with solid rubber tyres. The distance between the two places is sixteen miles, the journey occupying about one and a half hours.

M. JEANTAUD, of Paris, who has long been known for his electrical motor-vehicles, is taking up the construction of petrol cars. Three types are to be built, viz.:—12-h.p. double cylinder, 18-h.p. three-cylinder, and 24-h.p. four-cylinder, the general arrangement of modern automobiles being followed.

THE Continental Caoutchouc and Gutta Percha Company have lately published a most useful handbook, which, while being intended for the use of German motorists, will be found exceedingly useful by all British automobilists visiting Germany, as, in view of the Gordon Bennett race, many are likely to do this summer. It extends to, roundly, 1,000 pages, within which are given full instructions as to the proper use and handling of Continental tyres, complete particulars of the regulations regarding motor-cars in Germany, customs duties, routes between the leading towns, German and foreign motor-car clubs, German motor-car builders, repairers, and petrol depots. The main feature of the book is, however, the guide to all the more important cities, towns, and villages in the Fatherland. No less than 600 pages are devoted to this section; the places are arranged in alphabetical order, and under each are given the names of the principal hotels, motor repairers, and petrol depots, and much other useful information. Altogether, much time and money must have been spent by the Continental Company in the compilation of the book, which is almost indispensable to the motorist who includes Germany in his touring.

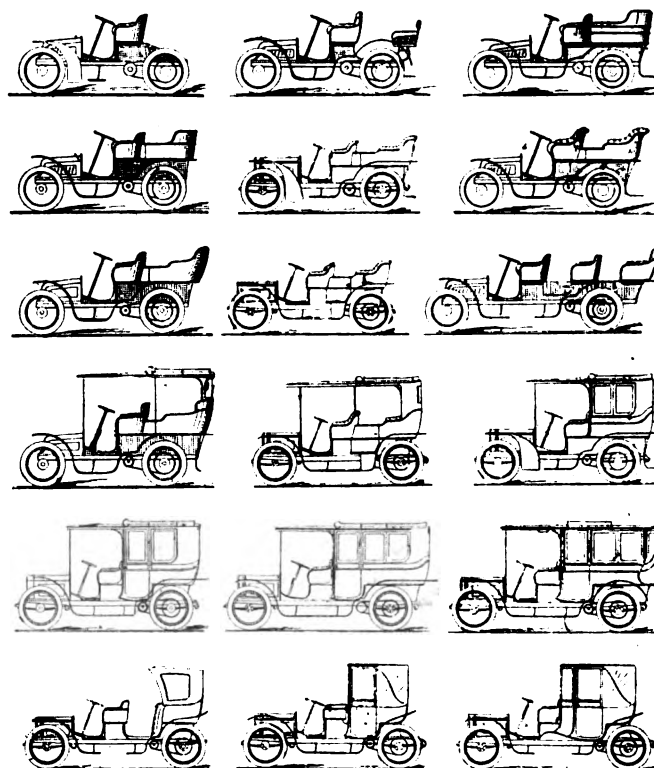
IN a recent issue of "La Locomotion Automobile," M. Lucien Fournier gives an interesting *resumé* of the history of the well-known motor-car concern, the Panhard-Levassor Company, from which we take the following:—"The firm was originally founded in 1855 by M. Perin, the inventor of the band-saw. In 1867 M. Panhard became associated with M. Perin, and Panhard et Cie. was organised, to be succeeded in 1886 by Panhard and Levassor, and in 1897 by the Société Anonyme des Anciens Etablissements Panhard et Levassor. In 1875, the manufacture of gas engines was added to the regular business of the firm, and in 1886 the construction of internal combustion motors was begun, the firm having acquired the French patents of Gottlieb

Daimler. The first automobile from the Panhard works made its appearance in 1891, from the designs of M. Emile Levassor.

SINCE that first vehicle left the works on the Avenue d'Ivry much progress has been made there and many improvements originated. The Panhard firm claims the credit of having introduced the practice of locating the motor in front; hand wheel steering; flanged radiators; the general transmission arrangement now commonly used, and armored wood frame construction. In France it has been the practice to build new vehicles for the great annual races, and for this reason many of the improvements were first seen at some particular race. Thus the Paris-Dieppe race, 1897, was characterised by the first appearance of the coiled radiator; Paris-Amsterdam, 1898, by the introduction of wheel steering and four-cylinder balanced motors; Paris-Bordeaux, 1899, radiator in front; Paris-Toulouse, 1900, reverse gear without shifting bevel gears; Paris-Berlin, 1901, cylinders and heads cast integral and mechanism with three point suspension; Paris-Vienna, 1902, steel cylinders and double-acting hub brakes. The Panhard Co. also claim to have been the first to have used nickel steel in automobile construction (for gear pinions and crank shafts), its first order for nickel steel being dated June, 1901. At the present time the production of Panhard cars is said to be 120 per month. The total number of workmen employed in the works is 1,400. Besides automobiles the company still build wood working machinery and explosive engines for electric generating sets and motor-boats.

WE hear that the Société Decauville, of Paris, have commenced proceedings against the Darracq Company to restrain the latter from using upon the Darracq cars a copy of the Decauville metal shield which supports the motor and also protects the mechanism entirely from the mud and dust encountered upon the road.

A FEATURE of the recent *Salon* in Paris was the great variety in carriage bodies and the marked increase in those of



the covered type with entrances at the side. The accompanying illustration, reproduced from a circular issued by the Mors Company, is interesting as showing the many designs of bodies this concern is now in a position to fit to its chassis.

A RUN INTO DEVON AND BACK.

—■—

HAVING received an invitation to spend a fortnight with some friends in North Devon, I decided to drive down on my 6½-h.p. Regal light car, going what I thought was the nearest way, and making a short tour back along the south coast.

Leaving Blackheath at 3.5 a.m. on a Saturday, I made my way as best I could over the various obstructions of the South London tram-lines to Wandsworth, and from there to Kew Bridge, where I joined the main road to Bath. I reached Hounslow at 4.20 a.m., and made my first stop to plug the holes for the screws which fasten the petrol tank to the dash-board. This delayed me twenty-five minutes, and while repairing a motor-bicycle and trailer passed me. Making a start again I soon came across the motor-bicycle, the rider of which was hard at work repairing a puncture. I ran into Maidenhead at 5.30 a.m., and, making up a little for lost time, reached Reading at six o'clock. Here I went wrong twice, and, before I got on the right road, lost ten minutes making enquiries. Some way out of Reading I came on a little group of cyclists round a motor-car, and, thinking something was wrong, I pulled up to enquire,



The Curiosity of the Natives.

but received as reply a very surly "No." I found out soon after that a road race was in progress and that they were waiting for the riders.

Travelling along a beautiful road I reached Marlborough at 7.55 a.m. and decided to stop for breakfast. This successfully accomplished, I left at 8.45 a.m. and ran on to Devizes, where I took in two gallons of petrol, which just filled the tank again. Staying at Devizes ten minutes I departed at 9.45, and reached Frome at 10.50. After resting forty minutes, I found the ascent out of Frome is very steep, but not long, and, running on through beautiful country and very level roads, Sedgemoor was reached at 1.45 p.m., and here I made a lengthy stop for lunch.

Starting again at 3 p.m., Tiverton was reached at 5.10 p.m., having had a twenty-minute stop a little way out to readjust contact screw and blow up one of the tyres which appeared to be a trifle slack. At Tiverton I bought up all the available stock of petrol, amounting to 1½ gallons, and started again for South Molton. Tea was taken at Exeter Inn, six miles from Tiverton, and I departed at 6.30 p.m. for what proved to be a very lonely but very lovely ride. Following the banks of the Exe for a mile or so, I crossed the river and began a very long climb, which took me far above the water, of which I caught occasional glimpses glimmering in the valley below.

South Molton is reached by climbing a very long, steep hill, which, however, presented no terrors to my stout little car. On reaching the town I filled up with petrol, only requiring about one and a half gallons, and went on to Barnstaple, arriving at 8 p.m. I was now only about nine miles from my destination, Kentisbury, but was directed a long way round via Bratton Fleming. There I found the only hill which was any trouble at all on the whole journey, and I had to get out and let the car run up by itself for a few yards. I finally reached my friend's house at 9.45 p.m.

There was a great lack of signposts in the various towns. At Frome, Devizes and Glastonbury, to mention only three, it would be almost impossible to find the way without enquiry. There was no trouble throughout the entire journey with horses, dogs, or policemen, all of whom seemed well accustomed and well disposed to the motor-car.

Leaving Kentisbury for the return journey on a Thursday at 10.40 a.m. we ran to Barnstaple via Shirwell, where there is a very long, steep hill about halfway, winding round and round so that at one time the road appears like a white streak right underneath. Barnstaple was reached at 11.15 a.m., and here, while purchasing two gallons of petrol and some oil, it came on to rain in torrents. We waited until it eased up a little, then made a start for Exeter. The road to that town, however, is a side turning off the main road, with no signposts or other indication that it leads to anywhere in particular. The result was we missed it and went four miles out of our way, having to go right back to Barnstaple, the rain pouring down all the time. We finally got away at 12.10, and, following the river Taw and the railway, made a fairly quick run to Lafford, where we had lunch, — a poor meal at an extortionate price. Leaving Lafford at 2.27 p.m., we continued to Exeter *via* Crediton, the seat of Sir Redvers Buller. The scenery here is very fine, the road rising very high and giving a view for miles round. Exeter was reached at 3.30 p.m., and, obtaining petrol after some difficulty, was left at 4.10 p.m. A nice road brought us to Honiton at 5.5 p.m., where, after tea, we had a stroll; the yearly fair being in progress made it very interesting. Leaving Honiton at 6.25 p.m. we proceeded to Axminster, the road out of Honiton being very steep with bad surface, and through a toll gate Axminster was reached at 7 p.m. and left at 7.7 p.m. There is a very long climb out of the town and a terribly steep descent to Charmouth. From Charmouth to Bridport is a fair road with the exception of one very high hill leading down into Chidwick. We stayed the night at the Greyhound Hotel, Bridport, having reached there at 8.5 p.m. Starting from Bridport the next morning at 9.5 a.m., we made for Dorchester over a series of steep and precipitous hills, of which there are no less than nine in nine miles. They are not very long or winding, but simply gradients of about one in six to one in ten. In five miles, after leaving Bridport, the road rises from 250 feet to 700 feet. Dorchester was safely reached at 10.5 and left at 10.45 a.m., Poole 11.45 and Bournemouth 12.5, where we had lunch after a very pleasant spin.

Leaving Bournemouth at 2.20 p.m. we ran through to Fareham, arriving 5.10 p.m. and leaving at 5.55. Travelling via Havant, Chichester and Arundel, we arrived at Warne's Hotel, Worthing, at 8.5 p.m. Leaving there the following day at 11.15 a.m., and taking the road through Brighton and Lewes, we reached Uckfield at 1.5 p.m., and after lunch left again at 2.50, arriving at Tunbridge Wells at 3.45, Tonbridge, 4.5 p.m., and our destination at 4.35 p.m.

The expenses of running the 750 odd miles were as follows:—
18 gallons petrol at 1s. 5d. per gallon (average price), one quart lubricating oil 1s., soldering lamp 2d., and soldering petrol tank 1s.: total 27s. 8d.

LEONARD BEADLE.

THE Cosi Car Company, Limited, has been registered with a capital of £5,000, to carry on the business of manufacturers of and dealers in motors and carriages of all kinds. The first directors are Messrs. E. Klaber, A. D. Klaber, and W. T. Smedley.

HERE AND THERE.

THE annual dinner of the Nottingham Automobile Club is announced for the 8th inst.

IDENTIFICATION plates are being supplied in permanent enamel by the Scottish Tyre, Limited.

THE fifth annual dinner of the Automobile Club of America will be held in the Waldorf-Astoria, New York, on Saturday, the 23rd inst.

IN the county of Londonderry, a steam lorry, the property of the Midland Railway Company, was the first motor-vehicle registered under the new Act.

THE Liverpool Engineering Society will consider motor vehicles at their meeting on Wednesday next. Mr. W. Norris, A.M.I.C.E., will open the discussion.

THE Motor Club of Nova Scotia has just been formed at Halifax, U.S.

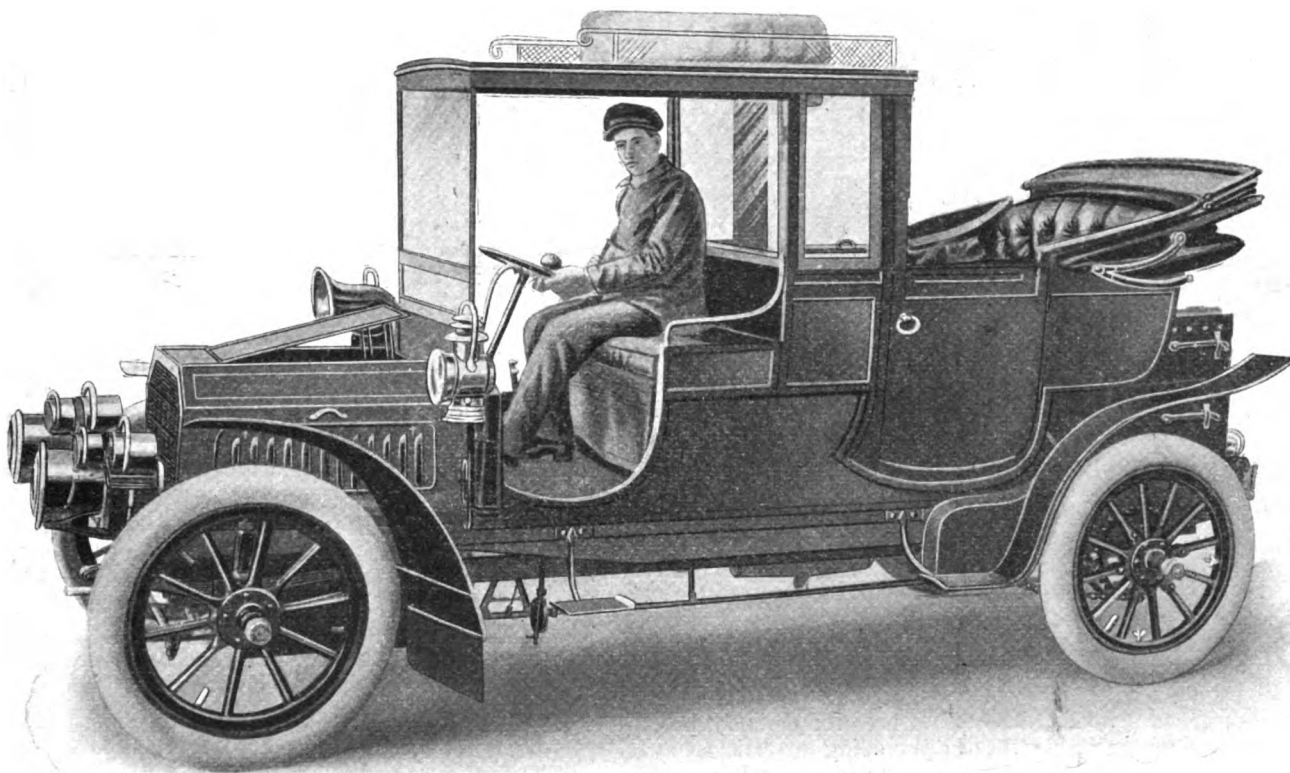
THE Deritend Stamping Company, Ltd., of Birmingham, are making a speciality of motor-car work.

INCLUDED in the preliminary programme of fixtures of the Ranelagh Club are automobile races on May 11th.

THE South Hants Motor Company, of Portsmouth, have recently increased their plant of machinery and staff of workmen.

MR. STANLEY SPENCER'S latest airship is shown at the Sports and Pastimes Exhibition now in progress at the St. James's Hall, Manchester.

FROM Minerva Motors, Limited, comes a calendar for the present year, in which the surprise of Dutch natives on the appearance of a motor-cyclist is set forth in colours.



The 20-h.p. Germain Landau, with side entrance.

THE Monarch Motor Syndicate, Limited, has been registered with a capital of £500 in 1s. shares, to manufacture and deal in oil, gas, electrical, and other motors.

THE Motor Castings Company, of Gray's Inn Road, W.C., are bringing out a detachable water-cooled head for motors with mechanically-operated inlet valves. They are also making arrangements whereby present possessors of De Dion and M.M.C. motors up to the 3½-h.p. air-cooled size can have the inlet valve converted at a small cost to the mechanically operated type. The diameter of the valves can practically be made to any size, as several allowances are being made for alteration.

A COMPREHENSIVE catalogue of motor-car materials and supplies has been issued by Mr. O. C. Selbach, whose business embraces everything required by the trade. Several pages are devoted to gears, the illustrations being clear and complete. Then follow fully illustrated descriptions of chassis, motor-car frames, etc., succeeded by particulars of Longuemare carburetors, "Loyal" radiators, lubricators, acetylene lamps, ignition accumulators, electric testing apparatus, batteries, pumps, jacks, automobile baskets, and the many other motor-car parts and accessories handled by Mr. Selbach.

A COMPANY has just been formed in Hamburg, Germany, to be known as the Motor and Motor Transport Wagon Company, to undertake the transport of goods in South Africa by means of motor-wagons.

A PRESENTATION has taken place at a dinner given at Coventry to Mr. Percy Richardson, on the occasion of his leaving the Daimler Company after six years' service. The chair was taken by Mr. G. T. Grant, secretary of the company, who also made the presentation.

THE B. F. Goodrich Company has issued a new catalogue of rubber goods, in which attention is specially drawn to the firm's outer cover for motor tyres and their motor bucket—the latter being made of canvas and rubber with a fine wire screen in the spout to prevent dirt and other foreign matter from passing into the water tank.

IT is reported that the London and South-Western Railway Company are completing at their Nine Elms locomotive works a motor-car which will shortly be experimented with in order to see whether the road motor-car can be profitably utilised in affording increased transit facilities in districts served by the South-Western Railway.

SIR HUGH H. SMILEY, BART., J.P., of Paisley, has joined the Western Section of the S.A.C.

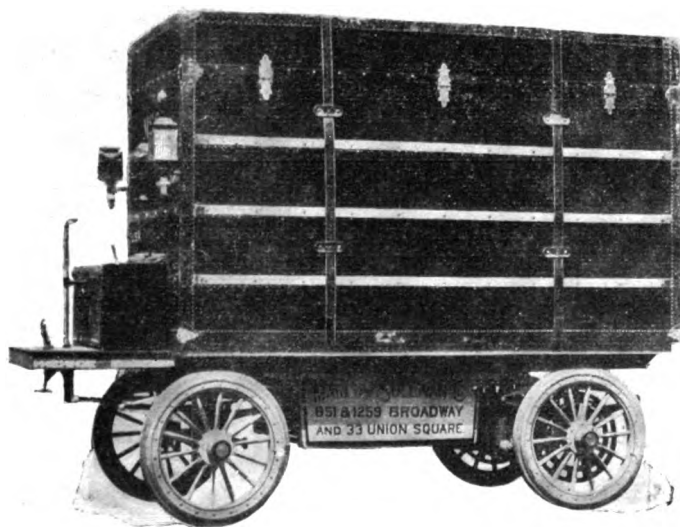
THE Railways Association is to be asked to receive a deputation from the A.C.G.B.I. on the carriage of motor-cars.

MESSRS. BRANDES AND CO., of St. John Street, Coventry, who undertake the repair and recharging of ignition accumulators, have issued a circular giving some useful hints on the subject.

THE Marquis of Linlithgow has just purchased a 24-h.p. Panhard from the British Automobile Commercial Syndicate, Limited, from whom Sir Humphrey de Trafford has also ordered a 27-h.p. Talbot car.

THE Kent Motor Company, Limited, has been registered with a capital of £5,000, to acquire the business of motor-car proprietors and motor engineers carried on by Mr. H. L. Cosh at Gravesend, and by Mr. G. Senior at Rochester.

THE Vehicle Equipment Co., represented in this country by the Anglo-American Motor Car Co., Ltd., have lately completed the novel electrical vehicle illustrated herewith for a New



York firm of trunk makers. The van is used for delivery purposes and at the same time serves as a travelling advertisement, the body being made in the form of a huge travelling trunk.

SIDE-ENTRANCE cars appear likely to become as popular in this country as in France. During the last few days Messrs. J. Rothschild et Fils have received a number of orders for such bodies, including one from Sir Thomas Freaque, Bart., for a Roi-de-Belge body, with side-entrance, to be fitted to a 35-h.p. Panhard car.

THE North British Rubber Company, Limited, are issuing a new price list of Clincher and Clincher-Michelin pneumatic motor tyres. This is a handy booklet for motorists to keep by them, and, with the firm's "Useful Hints and Instructions," should prove useful. The work is practical in design, and the hints given will save many an anxious hour, if acted upon by users of pneumatic tyres.

A USEFUL Handbook to the Motor Car Acts and Regulations has been compiled by Mr. James O'Connor, and published by Messrs. Meccredy, Percy and Company, Limited, of Dublin. Mr. O'Connor's annotations are excellent, and his references to cases will be helpful to motorists who are unfortunate enough to come within the sphere of magisterial authority. The differences that occur in the application of the Act to Scotland and Ireland are clearly set forth, and the regulations for each country find a place in its pages. The Index Letters for English, Welsh, Scotch, and Irish counties and boroughs are given in a convenient form, and Messrs. Meccredy, Percy and Company are to be congratulated on the publication of such a practical handbook.

THE Duke of Devonshire is adding a Wolseley 20-h.p. car to his carriages.

MESSRS. ATKINSON AND SON have now a garage for 100 cars in North Road, Lancaster.

A NEW motor-bus with a 20-h.p. engine has just been placed upon the road by the Hastings and St. Leonards Bus Company.

THE Alnwick Motor Garage and Cycle Company, Limited, has been registered with a capital of £5,000. The first directors are Messrs. T. Pringle and C. B. Ford.

MESSRS. HUGGINS AND CHAMBERS, High Street, Uttoxeter, are in a good position to undertake motor-car repairs, and also supply accessories, motor spirit, etc. They have also an inspection pit.

THE Zone Dynamo and Motor Patents Company, Limited, has been registered with a capital of £2,700. The first directors are Messrs. H. Edmunds, L. W. Holmes, H. F. Joel, and J. H. St. H. Mawdsley.

THE Birmingham Aluminium Casting Company, Ltd., have issued an aluminium calendar for the new year—in which the metal background has an appearance of glossy silk when placed on the wall.

MESSRS. LACOSTE AND BATTMAN, LIMITED, has been registered with a capital of £160,000 to acquire the business of motor-car manufacturers carried on at 16, Rue Chaptal, Levallois-Perret, near Paris, by Messrs. Lacoste and Battman, and to develop the same.

MR. TUDOR OWEN, a Salopian motorist, lost control of his motor when motoring at Shrewsbury, and it dashed at tremendous speed down the Old Castle Hill, at the bottom of which stands the Traitors' Gate. The machine tore down wooden posts and beams, then mounted a high wall, and fell into the Severn. Mr. Tudor Owen succeeded in jumping off the car just as it leaped the wall. He was unhurt.

MR. A. E. REYNOLDS, who for the past two years has been manager of the Aberdare Motor Company, Limited, has relinquished that post and has taken a similar position with the South Wales Motor Company, Cardiff, of which Mr. Parker Thomas is proprietor. Mr. Thomas was manager of the Aberdare Motor Company some years ago, and was, we believe, one of the few who has been able to earn a dividend for a public service motor company.

OWING to the pressure of orders during the last two months Turner's Motor Manufacturing Company, Limited, have been obliged to double the plant to enable them to keep pace with the orders for Miesse steam cars that they are receiving. Even that, however, has not been sufficient, and we learn that they have just purchased the freehold works lately known as the Wulfruna Cycle Works, in Wolverhampton. It is satisfactory to learn that the company have more Miesse cars on order at the present time than at any time since the vehicle was introduced into this country.

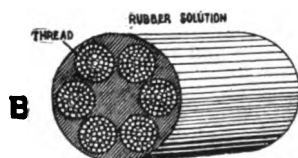
THE Duryea Company having to deliver two motor-cars in the neighbourhood of the Crystal Palace recently, sent them by train to the Low Level Station, and, finding petrol difficult to obtain the drivers concluded it would save time if they drove one of the vehicles only and towed the other. One was a capacious wagonette, with hood, and loaded with a couple of hundredweight of baggage, the other being a light two-seated 10-h.p. phaeton of 3 cwt. They started on Anerley Hill on the small car, towing the larger one. The road was very greasy, and when they got to the worst part of the gradient, which is said to be something in the neighbourhood of one in eight, they struck a particularly bad bit of surface and the procession came to a halt simply because the driving wheels were spinning round in the mud. The little car was kept going, however, and gradually slid sideways until it got out of the mud patch, and then, getting a hold on firmer ground, got both itself and its heavy charge once more moving, and, after other experiences of a similar nature, triumphantly reached the top.

THE NEW PALMER CORD TYRE.

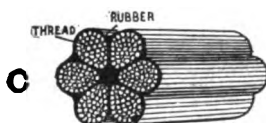
IN a recent issue we published an article in which some general particulars were given of the new motor tyre recently introduced by the Palmer Tyre, Limited. The tyre is such a radical departure, and so much interest has been shown in it, that a few details of the method of manufacturing the fabric may not be out of place. One of the difficulties which have to be contended with by tyre makers is the presence of air in the canvas or materials used in conjunction with rubber. In the vulcanising chamber the air contained in the fabric or canvas expands considerably under the increased temperature, and by its expansion the rubber is prevented from making a good contact with the thread. During the experiments carried out at the Silvertown Works it was discovered that the larger the thread or cord used the more air such cord contained, and the greater the difficulty in vulcanising. Finally, however, an apparatus has been devised to enable the production of a cord from which all air has been expelled, each thread of the cord being coated with indiarubber solution under pressure. The machine which expels the air and at the same time coats each thread with indiarubber solution is provided with six orifices, through which the threads are passed. The threads completely fill the orifices in question, with the exception of the upper one, which permits of the air escaping from the solution chamber. The threads pass through the tubes into the high-pressure cylinder. As the threads slowly enter the tubes they meet with a gradually in-



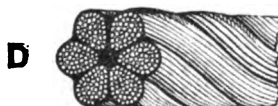
A SPECIAL THREAD. Before treatment.
(Shown highly magnified.)



B SIX THREADS as they leave the vessel containing RUBBER SOLUTION under very high pressure. The air is expelled from between the fibres, and rubber solution takes its place.



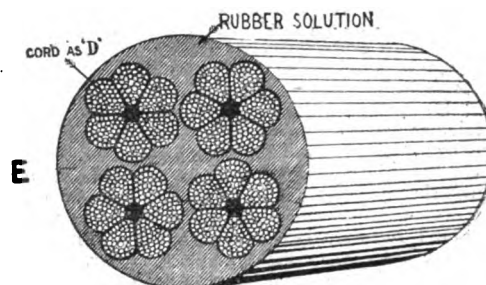
C The same as **B** after passing through drying chamber. As the solvent evaporates the rubber contracts on the cords.



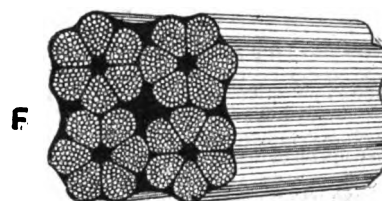
D The same as **C** after passing through the twisting machine.

creasing pressure of rubber solution, which forces the air backwards from between the fibres of the threads, the place occupied by the air being taken by solution. The threads pass across the cylinder to another very long tube having a rather larger bore. Before passing through this second tube the threads are led through a die which spaces them equally, and when they leave the tube they appear as shown at **B**. The accompanying

illustrations show different stages in making a cord composed of twenty-four unit threads and one wrapping thread. After emerging from the tubes in the form shown at **B**, the cords then pass through a chamber (about 120 ft. long) alongside hot steam pipes, which evaporates the solvent from the solution. As the solvent evaporates the rubber shrinks very considerably, and in doing so it contracts the fibres of the threads closer together, so



E Four cords as **D** passed through a larger high pressure solutioning apparatus similar to that employed for **B**.



F The same as **E** after passing through drying chamber.

that when the cords reach the end of their journey through the drying chamber they appear somewhat as shown much enlarged at **C**. While still warm, the cords are then passed through a twisting machine driven by an electric motor, after which they appear as shown in **D**. The whole process is then repeated over and over again as many times as may be necessary to produce a cord of the desired size, a larger set of apparatus being used for each succeeding process. After the last twisting process a widely spaced spiral wrapping of fine thread is wound the reverse way to the twist of the cord, which prevents the cords from untwisting, and also keeps them straight, and makes it easier to manipulate. After this spiral wrapping thread has been applied, the cord is passed through another hydraulically-operated solutioning apparatus to expel the air from between the fibres of the wrapping thread and to apply an extra coating of rubber, when it is ready for use. Special automatic apparatus is employed to ensure that every individual thread is of exactly the same tension in the cord, and by this method of building up every thread in the cord is insulated from every other one by indiarubber.

If all the stories are true with regard to the fleet of motor-cars supplied to the Chinese Royal family, the lot of the *mecaniciens* in charge of the same is anything but an enviable one. According to a German contemporary, should any accident befall the Chinese Emperor or Empress, when in their car, the driver will be punished with death!

FROM the Elsworth Automobile Company, Bradford, comes a copy of the catalogue of the new models of Spyker cars for which they are British agents. As mentioned in our report of the Paris Salon they comprise a number of interesting features and are being made in three sizes—12-16-h.p., 20-24-h.p., and 30-36-h.p., all having four cylinder engines. Apart from the fact that the makers of the Spyker cars give a guarantee with each vehicle for twelve months, we note that each purchaser is supplied with a chart showing the exact h.p. which the car gives.

CORRESPONDENCE.

BENZ V. LIGHT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—When I replied to the previous letter of D. Beaumont it was with the intention of privately corresponding with him on the merits of a Benz v. Light car, but, as so many have come forward who are experiencing the same difficulty, I will do my best to give my experience, although it is rather a tall order for a novice. When I bought my car a few months ago, the top speed was practically useless unless put on a down gradient; in fact, the engine would invariably stop if I put it on a level road. So at last I let the engine stop with the top speed belt still on and tried to find the cause. After some time I found the second speed belt, instead of running quite on the loose pulley, was just touching the edge of the fixed pulley, so I now arrange my belts so that the top part which goes through the guides is on the inside; consequently it pushes the outer part of the belt quite clear; a very small fault, perhaps, and one I recently saw committed by a motorist of twelve months' standing, but quite sufficient to stop a car. In fact, I now use the second speed as a brake when going down a steep hill on top speed by putting it on just a little very slowly. It must not be put on too far or it will stop the engine. I have also found an extra compression plate about one or one and a quarter inches thick a great advantage by increasing the compression, therefore the power. It should be fixed in the cylinder head, not on the piston end, as, in my opinion, by increasing the weight of the piston, it gives more wear to the bearings at the end of the piston rod. Next I noticed a peculiar whirring noise when running on top speed, which I attributed to the crypto gear requiring oiling, so I took off the countershaft and packed the crypto drum with thick gear oil and grease (not ordinary lubricating oil, as that runs out too quickly) and then found I had made a decided improvement in the running of the top speed. It also stopped the lifting of the front part of the car when the crypto was put on, a common fault, I believe, with a Benz car when the crypto is dry. I have now had made what I consider the greatest improvement. Upon looking at the cam that lifts the exhaust valve I found it was getting worn, so I have had a piece brazed on about one-sixteenth of an inch at top, and three-sixteenths of an inch at top of side; by so doing it opens the exhaust valve rather earlier and keeps it open a trifle longer, but at the same time it does not open it wider than was originally intended. Of course, the amount put on would depend on how much the cam was worn, but I have certainly found it has increased the power of my car considerably; in fact, where I used to go up small hills and over railway bridges on second speed, I now do them on top and can go within a radius of eight or nine miles from my home and not do more than half a mile on second speed. My car was previously fitted with American cloth underneath, from side to side to protect the belts in wet weather. I have now reduced the width of that so as just to cover the pulleys, by that means allowing the air to get to the engine and so assist the cooling. I shall be glad, however, if any reader can suggest an improvement in the water-cooling arrangement, as I do not consider that sufficiently good. As regards the quantity of petrol used, at a rough estimate I can go about thirty miles on one gallon. With regard to the remark of C. A. Palmer *re* the illuminating of back plate, it is certainly worth attention, and I should like to hear the opinion of your readers on the subject.

In conclusion, do not omit to oil the differential gear occasionally, as that has a considerable effect on the easy running of a car.—Yours truly,

AMATEUR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am another who would very much appreciate the information "Amateur" has offered Mr. Beaumont. My 3½-h.p. Benz absolutely refuses top speed on the slightest incline, or if the road is the least bit heavy. I have spent a lot of money in the endeavour to get 3½-h.p. out of the engine, and my experience of the M.O.I.V. was that it decreased the power.

I do not think there is any risk to be apprehended in illuminating the back plate, as the carburettor is on the other side; at all events, I have been running for two years with a back lamp placed over the hole where the starting handle was.—Yours truly,

RATHBONE WAINWRIGHT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Being the owner of a 3½-h.p. Benz car, which I have had for over two years, I should, like your other correspondents, be interested to hear what are the improvements that "Amateur" has made to his car, and trust that he will let us know publicly, through the medium of your paper. I have myself made several alterations to my car with good results, such as fitting a plate about ¼-inch thick on the inside of the cylinder cover to increase the compression; a larger induction valve and casting complete (obtained from Messrs. Hewetson's); and boring out the exhaust valve seating so as to take a larger valve. I have been informed that it is an advantage to make the flywheel heavier by shrinking an iron band on to the periphery, but have not tried this yet. With these cars it is important to take up play, resulting from wear, in the exhaust valve gear, and see that

the opening and closing of the exhaust valve is correctly timed. All the three valves must close tight and the piston rings fit well, so that there is no loss of compression. Like Mr. Knight, I have tried the mechanically-operated induction valve arrangement, and found it to be useless (although, if properly fitted, it does not slow the car), and noisy in action. My car now surmounts slight inclines on top speed with three up without any difficulty.

If Mr. Palmer illuminates his back plate by means of a 4-volt electric lamp, placed in a small bull's-eye lantern, run off his ignition accumulator, he need not be afraid of danger from the petrol vapour.—Yours truly,

J. K. BRYDGES.

HONEYCOMB RADIATORS AND NATURAL CIRCULATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We notice in your last issue, in your report on the Paris Salon, a slight inaccuracy in reference to the Chenard and Walcker radiator, and we therefore take the liberty of drawing your attention to the same. You state that, like a car of another make named by you, the Chenard and Walcker is fitted with a thermo-syphon radiator. We should like to point out that, unlike the car in question, ours is a honeycomb radiator of unique design, which you were good enough to describe, and is, so far as our knowledge goes, the only honeycomb cooler with which it has been found possible to satisfactorily dispense with the pump. Hitherto it has only been found practicable to adopt the thermo-syphon principle with fin-type radiators, which are not nearly as efficient as the honeycomb; and hitherto, moreover, it has equally been found impossible, until the advent of our 1904 cars, to produce a honeycomb radiator which would work without a pump.—Yours truly,

THE WESTON MOTOR SYNDICATE.

BAND BRAKES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be glad to hear if there is an efficient substitute for leather on band brakes. I live among the Cotswold Hills, and the brake leather on my 16-h.p. Gladiator gets worn out in any time between ten days and three weeks. A long hill will burn the leather of the brake and make it dangerously useless. If any reader, or you, Sir, yourself, would be good enough to suggest some means of avoiding this wastage, I should be much obliged.—Yours truly,

X.

["X" would probably find that if he were to line his brake bands with small hardwood blocks or even vulcanite fibre, it would greatly improve their efficiency. No doubt the bands would need to be slightly lengthened for this to be done, but the cost of doing this would be very slight compared with that of continually fitting new leather.]

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was greatly surprised to read "Solids Tried's" letter in the last issue of the *Journal*. He evidently has had the wrong kind of solids or a very bad car, and it may interest him to know the experience of a user of Buffer solid tyres. My two cars are first-class makes and well sprung, they are fitted on all four wheels with these tyres, and have not cost me a penny for repairs while driving thousands of miles in England and Wales, both on country and town roads. I have driven owners of pneumatic-tyred cars in mine, and they were greatly surprised at the ease of running on solids.

Many of my friends have similar tyred cars, and always speak in the highest praise of their solids; some of their cars were formerly pneumatic tyred, but were converted to solids owing to the expense and uncertainty of pneumatics. I could give your correspondents, "Puncture Tired" and "Solids Tried," the names of about a dozen or so good cars that are properly sprung and guaranteed by the manufacturers to run just as well on solids as on pneumatics, or perhaps those manufacturers or their agents will, if they read this, enlighten the public through their advertisements in your *Journal*; such information would, I feel sure, be a great help to would-be motorists and users of motor-cars.—Yours truly,

AN EXPERIENCED USER OF SOLIDS.

LOSS OF COMPRESSION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to Mr. Bolton's letter in your last issue, I should advise a thorough examination of the piston rings for loss of compression if he is quite certain that the valves, sparking plugs, etc., are perfectly tight. The piston rings may be slightly worn, so that the joints do not come close together, thereby admitting the gas to pass. If this is the case new rings would be advisable, but if they appear to be in good condition and bearing on all points, I should advise leaving the old ones in, as it requires a great deal of running before a new set of rings would become properly worn into the cylinder. To ascertain if the rings are fitting tight at the joint it would be necessary to take them off the piston and try them in the cylinder, each one at a time. If this means

one can easily see if the joint is tight. The life of piston rings vary according to the manner in which they have been treated—for instance, if the engine has been running badly lubricated the result may be disastrous to the piston rings, even if just new.—Yours truly,
J. T. H.

DANGERS OF THE ROAD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you kindly allow me, through the columns of your paper, to call the attention of all motorists to a bridge on the main road from Chatteris to Ely, and warn them of the dangerous condition which it has been allowed to fall into. It is situated on the outskirts of Mepal (a small village), and has been in a bad state for a very long time, and the other day, while passing over with my car, I noticed it had got much worse, and I could not help wondering why some steps are not taken to make the same safe? Are the authorities waiting for an accident before they will open their eyes to the danger of it? There is only room for one car to pass over at a time, and one of the sides (which was built of bricks) has fallen clean away, and there is nothing to protect a stranger, who might leave the track a little, from running straight into the drain (or cut) and thereby perhaps meet his death! It is not only dangerous to motor-cars, but to all vehicles that pass over it. Such danger spots as that are a disgrace to those who are responsible for public safety, and steps should be taken at once, I think, to make them safe.

Trusting this warning will not be in vain, and hoping that it may even meet the eyes of those that are responsible for that bridge.—Yours truly,

H. L. DRAKE.

THE MOTOR-CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was contemplating the purchase of a motor-car; but since the passing of the law as to numbering, etc., I have given up the idea for the present.

Probably there are not a few in a similar position. I am a shareholder in motor companies, and naturally hope for their success; but, even so, I will not consent, as the price of owning a motor-car, to be placarded dangerous, and differentiated from all other road-users as a probable scoundrel. With all deference to the Automobile Club officers, I fear they have mismanaged things from beginning to end of this wretched legislation. If all vehicles alike had to be registered and numbered, motorists could not object. Why not press this point?—Yours truly,

SWITCHED OFF.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think the most objectionable parts of the Act are the minimum age limits and the licensing of drivers. I very much wish that motorists would try hard to get these regulations repealed, at any rate for motor-cycles and small cars. It is very hard on a boy of fourteen not to be able to give his brother a year or two younger a ride on his motor-cycle. If licences cannot be done without, why not have family licences, or, better still, issue auxiliary licences to members of the same family at a shilling each?—Yours truly,

CECIL JACKSON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think the new Act will work fairly well if liberally interpreted. I have one suggestion to offer, and that is that motorists themselves offer to supply danger boards to borough and county councils gratis, these boards to be placed by such Councils at special points.

There are two in Croydon on the main road. A small subscription per head could effect this, and while rubbing the councils the right way, would, I think, in a large manner obviate the ten-mile limits. Any motorist who drove fast past such boards would deserve anything he received.—Yours truly,

R. F. WOOD SMITH.

HEATING MOTOR-CAR SHEDS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the recent correspondence on the above subject, I am using one of Portway's patent gas stoves, which is simply hung over an ordinary gas flame, and with which apparatus I have kept my motor-car shed at a temperature of from 40 to 45 degs. during the recent cold weather.—Yours truly,

HENRY J. ROGERS.

LIGHT CAR EXPERIENCES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Enquirer," I give my experiences of 4½-h.p. Baby Rochet which I ran last season for about 800 miles before getting a larger car. It is a very simple vehicle indeed and will carry two passengers and a small amount of luggage easily. It climbed every hill I met with at about six to eight miles an hour, and I found it impossible to have a side-slip on account of the engine weight being at the back. I only had one

puncture, and that while running the tyre deflated. The wear of tyres is very small indeed on account of light weight of car. The only objection is the mode of starting, which is done by winding a strap round the pulley at back. The petrol consumption I found to be about one gallon to forty to fifty miles.—Yours truly,

B. E. BOLTON.

VALVE SEATS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to "Marbeuf's" enquiry in your last issue, the use of the flat or bevel seat inlet valves is greatly a matter of preference on the part of the maker. A flat seat inlet valve does not require as great a lift as a bevel seat valve, to give the same area of opening, but a bevel seat valve is easier to regrind and keep in condition than a flat seat valve. It is, moreover, more commonly used than the flat seat type.—Yours truly,
F. H. L.

COMMERCIAL MOTOR-VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Morris's letter in your last issue is most *apropos*, especially in view of the fact that the coming competition for motor vehicles for commercial purposes will once more direct public attention to the possibilities of the motor-car in commercial work. Even in trade circles the vastness of this field is as yet not fully appreciated. It needs no extended argument to show that a large amount of capital is invested in business vehicles—i.e., lorries and delivery vans of all kinds. If the automobile can successfully supplant the horse-drawn business vehicle, of which there is no doubt in my mind, we have the foundation for a very large and permanent industry, which should prove a very attractive field for investors, inasmuch as it will be entirely independent of fashions and popular fancies. As Mr. Morris points out, however, the work commercial vehicles are called upon to perform is severe, and needs special provision in every part of the design if it is to prove successful. It is to be hoped that the trials which are to be held this year will bring forth some cars on these lines which will put this country in the fore-front as regards this class of vehicle, just as we are with the heavy steam vehicle for loads of five tons and upwards.—Yours truly,

PROGRESSION.

NOTICE TO CORRESPONDENTS.—We wish to remind our readers that no notice can be taken of any letters intended for publication unless the name and address of the correspondent, not necessarily for publication, is appended.

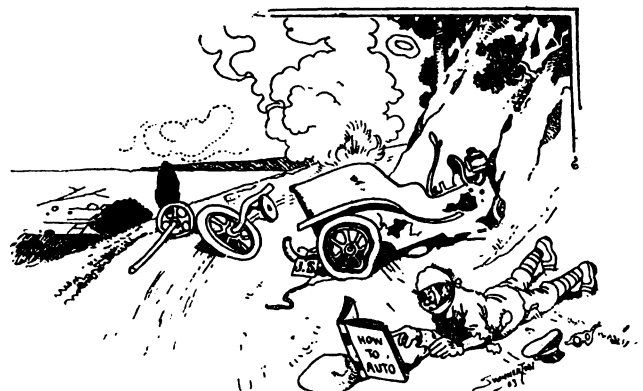
ALUMINIUM FORE-CARRIAGE BODIES.—"C. J." asks for the name and address of a firm capable of building small fore-carriage bodies or similar goods in aluminium.

THORN AND NAIL EXTRACTOR.—Replying to several enquirers the maker of the thorn and nail extractor illustrated in the last issue is M. E. Nouzillet, 71, Rue de Rome, Paris.

A MILITARY MATTER.—With reference to the letter from "An Inconspicuous Inventor" in our issue of the 26th ult., we would remind our correspondent that announcements of the trials were made in the leading journals a considerable time before they took place.

PETROLEUM SPIRIT.—In answer to "Petrol," who enquires for the name of the firm in the north supplying '680 spirit, the concern in question is Messrs. Whitaker and Company, Montague Street, Lower Broughton, Manchester.

CATALOGUES WANTED.—Messrs. Donald Brothers, of Lowry Road, Capetown, write that they would be glad to receive from manufacturers of motor-cars, parts, and accessories, copies of their latest catalogues and price lists.



How Did It Happen?

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED, M. P. H.	RESULT.
Marlborough Street (London)	Marquis de St. Maurs, Oxford Street, W.	—	40s., etc.
Birmingham High Wycombe	W. W. Davies, Birmingham	25	20s., etc.
Exeter.....	E. R. Coles (driver to Mr. E. Otter, J.P.)	—	20s. etc.
Westminster	H. R. Anderson, Burton Crescent, W.	—	10s., etc.
Conway	R. Forsyth	—	Adjd.
	H. M. Baler (driver to Marquis of Anglesey)	—	£10.

ERNEST JAHINEAU, a Frenchman, of Old Compton Street, Soho, should have surrendered to his bail at Bow Street (London) to further answer a charge of driving a motor-car furiously and to the common danger. He failed to do so, and Mr. Fenwick ordered a warrant to be issued for his arrest.

CLUBS AND ASSOCIATIONS.

SOUTH LINCOLNSHIRE.

A MEETING of motorists resident in Boston and the district was held at the Red Lion Hotel, Boston, last week for the purpose of considering the advisability of forming a local motor club. Dr. Miller, of Wrangle, was voted to the chair, and the chairman said it might be thought that as there was a Lincolnshire Automobile Club nothing further was needed, but as there were so many motorists in Boston and the district several members of the Lincolnshire Club thought they were strong enough to form a club of their own. Another point was that they thought sufficient attention had not been paid by the Lincolnshire Club to the protection of the members, and they believed that a club with that as one of its principal objects would be an advantage. He referred to the legal defence of members, but he did not mean that a motorist who was continually scorching and breaking the law would be defended. With regard to affiliation, the Lincolnshire Club was affiliated with the Automobile Club of Great Britain and Ireland, for which they had to pay half-a-guinea per head. That was what had cramped them. They, he took it, would not affiliate, for he thought they would agree with him that the advantages were practically nil.

After discussion, it was decided to form the South Lincolnshire Motor Club, with headquarters at the Red Lion Hotel, Boston, and an annual subscription of one guinea. It was decided to ask Mr. W. Garfit, M.P., to become president of the club, and Lord Willoughby de Eresby, M.P., the Marquis of Exeter, the Earl of Ancaster, the Mayor of Boston (Ald. Joseph Cooke), Mr. H. R. Mansfield, M.P., Mr. G. H. Faber, Mr. E. M. Pollock, Mr. R. W. Staniland, and Mr. Meaburn Staniland, to act as vice-presidents. Dr. Miller was appointed Chairman of the Committee. Mr. F. Richardson, of Sibsey, agreed to act as hon. secretary and treasurer, and Messrs. South, H. C. Johnson, Mason, Crompton, A. H. Holland, and A. W. Holloway were appointed as a committee.

YORKSHIRE.

THE annual general meeting of the Yorkshire Club will be held on Thursday next, at 7 p.m., in the club-room at the Great Northern Hotel, Leeds, when the election of officers and committee for the ensuing year will take place. Any member desirous to make nominations for officers or committee, or to introduce or suggest new rules, or any other subject, is requested to notify Mr. Alf. W. Dougill on or before Tuesday, so that the same may be included in the agenda. A lantern lecture by Mr. E. Faiers, of Bradford, will follow the general meeting, at 8 p.m., when a large selection of slides of motoring interest will be exhibited.

AUTOMOBILE RACING IN FLORIDA.

THE Florida East Coast Automobile Association's race meet, which is to take place on the Ormond-Daytona Beach, Florida, on the 27th, 28th, and 29th inst., is already an assured success, and the programme of events indicates that some very exciting racing may be anticipated. The meet is to be held under the rules and auspices of the American Automobile Association. The Mors electric timing apparatus will be used. The entry list will close on the 15th inst. On the 27th inst. the following races are to be held:—One mile open for the A.A.A. championship; ten-mile handicap; five-mile invitation; one-mile record trials; five-mile American motor-cycle championship; five-mile, for members of the American Motor League, connected with the automobile trade exclusively, and a special race for Florida automobile owners. The feature of the second day's programme is a fifty-mile open race for the A.A.A. championship, to which all cars weighing not less than 1,000 lbs. are eligible. Other events are a one-mile race, five-

mile open, five-mile handicap, five-mile for vehicles costing £130 and under one-mile invitation, and a ten-mile handicap for motor-cycles. On the third and last day the first event is to be a ten-mile open, for the A.A.A. championship, followed by a one-mile race for racing cars, and a series of kilometre and mile record trials; a twenty-mile handicap, ten-mile invitation, five-mile race for two passenger runabouts, one-mile motor-cycle handicap and tire-detaching contests divided into two classes, for vehicles weighing under 1,000 lbs., and for cars weighing from 1,500 to 2,500 lbs. All competing cars are to be classified according to the rules of the American Automobile Association. On the 28th inst. new record trials of various distances will take place, and on the 30th inst., following the close of the race meet, a floral parade through Ormond and Daytona will be held. The special invitation races are to be restricted to amateur drivers. The Ormond-Daytona course is an ideal natural track, sixteen miles long and 100 yards wide at low tide.

ALLEGED THEFT.

ERNEST HENRY JONES, an engineer, of 4, Grange Road, Canonbury, was charged at Clerkenwell on Monday, before Mr. Bros, with stealing from a showroom at 18A, Church Street, Islington, a number of motor-car fittings, valued at £500, the property of the Automobile Components (Limited). Mr. Travers Humphreys prosecuted, and Mr. Ricketts appeared for the defence. Detective-sergeant Smith proved the arrest of the accused, who said he had supplied some of the materials, and had been working on them. Mr. Ricketts said the prosecutors rented their premises from his client. Ultimately a remand was granted, bail being allowed.

MOTOR-CAR ACCIDENT.

ROBERT FORSYTH was summoned at Westminster for driving a motor-car to the common danger in King's Road, Chelsea. On the evening of December 22 defendant was driving eastwards, and on reaching a very narrow portion of the King's Road, near a police station, he met other vehicles, which caused him to apply the brake suddenly. The police alleged that the car got out of hand and dashed on to the pavement, knocking down a woman and seriously injuring her. Mr. Horace Smith adjourned the further hearing, agreeing to accept bail for defendant, whose case was that his car skidded through the greasy state of the road, in two securities of £25 each.

In connection with the mail service between Sunderland and South Shields 5-h.p. Roots cars were employed. A small van body was fitted and the car sometimes loaded up with 7½ cwt. of mails. During the Christmas holidays a spare car, which was kept in reserve in the event of the possible failure of the running car, was carrying a similar overload during the day, so that both have been running regularly night and day without a hitch.

THE Daimler Motor Company, Limited, are introducing a new tonneau car fitted with a 7-h.p. double-cylinder engine. The vehicle is a reproduction in miniature of the large Daimler cars and has three speeds forward and a reverse, and side chain transmission. The motor, which has cylinders 90 mm. by 120 mm., is fitted with a governor acting on the admission and runs normally at 720 revolutions per min. The details have all received careful attention with the view of the production of a reliable light car.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editor's hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, JANUARY 16, 1904.

[No 254.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



DERBYSHIRE folks have seen many Royal and ducal motor-cars lately, and on Saturday a motor-trip from Chatsworth to Hardwick Hall and back via Chesterfield gave delight to many. The Duke and Duchess of Devonshire, with the King, the Queen, the Princess Victoria, and fifteen or sixteen of the house party, left Chatsworth shortly before noon. They travelled in four motor-cars—those of the King, the Duke of Devonshire, Consuelo Duchess of Manchester, and Lord Charles Montagu. In the King's roomy car, with its glass sides and roof, were the King himself, the Duke of Devonshire, and half-a-dozen others. The Queen and the Duchess of Devonshire were in the second car; the Princess in that of Lord Charles Montagu. Although the roads were still heavy with the rains of the last few days, the weather was delightful, and the start was made in a burst of bright sunshine. The highway to Chesterfield passes through a rough, uncultivated tract of country which has a wild charm of its own. From the point of view of the motorist it has the further advantage of being practically uninhabited. The cars, therefore, were able to make excellent progress, and forty minutes after leaving Chatsworth they were passing by Chesterfield church, just ten miles distant.

A Doctors' Automobile Club.

THE Physicians' Automobile Club of New Jersey has been organized in Newark, U.S.A., with about twenty members. None but physicians owning motor-cars will be admitted to membership. Among the objects of the club is the discussion of subjects pertaining to automobiles and their use. The club also hopes to secure the benefit of reductions of prices on supplies and sundries by making purchases in quantity, and may later on arrange for a club garage.

The First Case.

IT is unfortunate that in the first case heard under the new Motor-Car Act the defendant should have been so tired as to give the policeman who charged him the impression that he was drunk. The case occurred in the Strand, London, and not only did the motor-car driver cause his vehicle to "wobble from side to side," but he had left his licence at home. For driving negligently a fine of £10 was imposed, the absence of the licence costing the defendant another five shillings, as well as endorsement.

Imprisonment for Motorists.

PARLIAMENTARIANS are being credited with a desire to revise the legislation now on its trial, and it is stated that Sir Carne Rasch contemplates an amendment empowering magistrates to imprison motorists for a first offence instead of the third, as provided for in clause 6 of the Act. Sir Carne has advocated many things in his time and is the champion of short speeches in the House. Surely he would not suggest long sentences for those who seek to get over much ground in the shortest possible time. He can't be serious in the idea.

A Railway Motor Service.

THE Midland and South-Western Joint Railway intend to revive motor-car services between Cirencester, Fairford, and Lechlade. It is reported that a Clarkson steam car will be employed to carry sixteen passengers and 10 cwt. of luggage. The headquarters are proposed to be at Lechlade, and the car will start from there in the morning in time to meet the 8.5 a.m. train from Cheltenham. The return journey from Watermoor will be begun at 9 o'clock, reaching Fairford in time for the G.W.R. 10.30 train to Oxford. Leaving Fairford station at 10.30, the car will return to Cirencester market-place, delivering parcels, etc., *en route*, and connecting with the 12.58 North express from Watermoor station. Another journey will be begun at 1.5, connecting with the 2.40 G.W.R. train from Fairford to Oxford, and going on to Lechlade; returning from Lechlade at 5 o'clock, connecting with the Oxford train due at Fairford at 5.36, and reaching Watermoor station in time for the 7 o'clock train to Cheltenham. The car will then run back to Lechlade for the night. In addition to this regular service, it is intended to organise periodical excursion trips to Burford, Faringdon, Birdlip, and other places.

British Racers Handicapped.

BRITISH competitors in the Gordon Bennett contest have had comparatively few opportunities of accustoming themselves to the high speeds that will be demanded of the winner in this year's contest. This undoubtedly places them at a disadvantage as compared with their rivals, and it is rather unfortunate that some stretch of country—such as the 1903 course—cannot be obtained for their use. Otherwise they will have to go to the Continent—an additional expense which will cause some to think twice before venturing once.

The Worth of Sergeant Jarrett.

SERGEANT JARRETT, of the Surrey constabulary, may not be worth his weight in gold, but he is certainly a remunerative investment for the county exchequer. Last year he obtained many convictions against motorists in his county, and secured the infliction of fines amounting to £230. As a catcher of motorists he has proved the possession of superb qualities, and it is a pity that his splendid powers of calculation and observation cannot be utilised to better advantage. Now, however, that the speed limit has been raised to twenty miles an hour we shall watch with unusual interest the reports that reach us from the Ripley road.

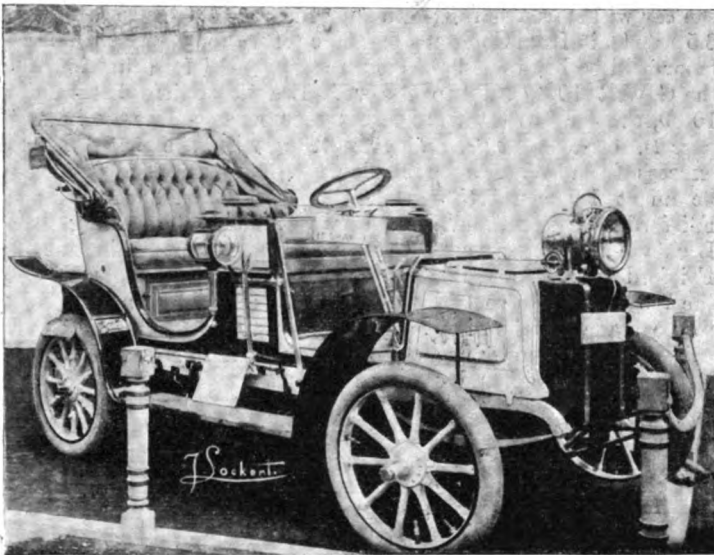
In East Africa.

IN some of our Colonial possessions the automobile is making creditable headway, and in Uganda Mr. G. Wilson, C.B., the Deputy Commissioner, is using a 6-h.p. car with evident satisfaction. The roads in Uganda are fairly good, railways do not yet penetrate the out-stations, and correspondence has to be carried by road. In such circumstances the advantage o

the motor-car is apparent, and already some of the officials are urging the responsible authorities to provide motor-bicycles, so that delay in communication between the various depots may be avoided. As in the case of municipal authorities at home Colonial stations will have to consider the automobile an essential feature of their equipment.

Motor Corps Uniforms.

It has been proposed to the War Office that the uniform of officers of the Motor Volunteer Corps shall be as follows: Olive-green cloth tunic, with white facings; collar trimmed with black astrachan, and ornamented with silver Russian braid at the bottom; cuffs trimmed with black astrachan and silver Russian braid. Trousers also of olive-green cloth, with white welt $\frac{1}{4}$ inch wide down the side seam. Busby of black astrachan with white crown; badge in silver in centre of the front; plume dark green below and white above, with silver ball socket; the height of the plume to be six inches from the top of the busby, the sword to be of the Infantry pattern. Motorists with busbies and plumes should appeal to the popular fancy on windy days.



The 15-h.p. Gardner-Serpollet Steam Car, built for the Shah of Persia, and exhibited at the recent Salon in Paris. (Le Chauffeur.)

Motor-Cycles and Medicoes.

MANY of the pioneers of automobilism have belonged to the medical profession, which has, as a body, shown a consistent and sustained interest in the movement. A large number of those who, for various reasons, have not yet been converted to the modern method of locomotion are now being attracted within the charmed sphere by the motor-bicycle, and we have been somewhat surprised at the number of doctors making inquiries after this type of machine. It certainly has many claims on their attention. The country practitioner frequently does a proportion of his work by bicycle, and the substitution of a motor-bicycle is an inexpensive and instructive way of beginning automobilism. Moreover, a trivial stoppage due to inexperience will not delay him as with a car or even a tricycle, as the removal of the belt will enable him to pedal his machine with no great difficulty, and postpone its diagnosis till a convenient opportunity.

To Drive, or not to Drive.

AN international discussion is waging around the position which has been brought about by the suggestion of the German Automobile Club with regard to the employment of professional drivers in the Gordon Bennett race. It must be confessed that we should prefer a clause being inserted in the rules

by which the drivers—whether professional, trade, or amateur, is a matter for later consideration—should only be permitted to race as representing "countries of their birth." Last year the race was won by a Belgian on a German car owned by an American. It was a fine display of cosmopolitan courtesy and afforded a small degree of satisfaction to the three nations thus able to share the honours of the day. But the event would have been far more keenly interesting had the drivers, like the cars, to be wholly of the nationality under whose colours they raced. This is a point upon which more is likely to be heard in the future.

Australian Antipathy.

THE bucolic mind is full of prejudice and difficult to accustom to modernity. In this country it has developed its passion against motorists in letters to the editors of country journals and to the adoption of vehement resolutions at meetings of agricultural clubs; but in the Colonies it seems to assume a more violent attitude. A few weeks ago the Dunlop Motor-cycle Race was to have taken place at Warrnambool. As the day of the event drew nearer the rancour of the horse-breeders of the district became more strongly expressed, until, the day before the projected race, several of the farmers along the route threatened to turn all their stock on to the road. Following on this determination on the part of the farmers, a local councillor has given notice of his intention to advocate a restriction of the speed of motor-cars and motor-cycles in that region in the future.

History Repeats Itself.

SUCH action is lamentable, especially as the urban centres of Australia have shown themselves friendly to the automobile. The motor is likely to be a friend to the farmer, as Professor James Long has shown, and although it may seem to have an undesirable effect on the immediate future of his business, its helpfulness will have to be acknowledged in the end. But the incident serves to show the immutability of human nature. Just as the old turnpike-keepers blocked the roadways to upset the early steam vehicles that plied upon British roads in the pre-Victorian days, so do the farmers of our Colonies breathe forth threatenings which will prove as ineffectual as were Canute's commands to the sea waves to cease their billowy progress.

Our Varied Contents.

How the contents of the motor press vary with the season of the year? Glancing through the *Journal* for the last year this has been forcibly brought to mind, and even if the dates were omitted from each issue it would not be a difficult matter to supply the missing calendar by merely watching the pages. In the summer accounts of races and trips loom large; in the winter—and especially such a winter as this—they are conspicuously absent, and descriptions of the improvements that makers are introducing provide interesting reading until "the sunshine comes again."

For County Officials.

THE Essex County Council, recognising the merits of the motor-car, have decided to purchase one of larger power than that hitherto employed by their County Surveyor. Following upon that pleasant intimation comes the news that at the Northallerton Quarter Sessions the report of the Joint Standing Committee stated that the committee had decided to allow Major Bower, the Chief Constable, the sum of £300 towards the purchase of a motor-car in lieu of the present allowance of £60 per annum for his railway pass for the next five years. Sir Henry Beresford-Peirse, Bart., proposed, and Alderman J. T. Hansell seconded the adoption of the report, and this was agreed to. Such propositions are meeting with a lessened opposition than was the case even a year ago—ample proof of the headway automobilism is making in official circles.

Uniformity in Lighting.

FREQUENTLY have we urged the necessity for uniformity in dealing with traffic problems. If horse-drawn vehicles are allowed to career about in narrow lanes and sinuous roadways, why should automobiles be prohibited? And, similarly, it would appear equally right that the law should be sternly administered as to the provision of lights on all vehicles. Mr. Lucas D'Oyley Carte has done well in drawing prominent attention to this matter at the present juncture. The provision of lights on automobiles is intended to show up dark objects on the highway as well as to indicate the oncoming automobile. Surely it would seem reasonable that horse-drawn vehicles should be compelled to similarly disclose their presence.

Motors and Social Problems.

INDUSTRIAL decentralisation as a factor in the solution of the housing problem was discussed at the Surveyors' Institute on Monday night, after an address on the subject by Mr. Herbert T. Scoble. It was urged that model villages like Bournville and Port Sunlight, being semi-philanthropic and started with unlimited capital, were not generally practicable, and

Colonial Clubs.

THE South African Automobile Club, whose doings have been frequently referred to in these columns, has become affiliated to the A.C.G.B.I., and we understand that the New Zealand Club is enquiring as to the terms upon which such a connection can be made with the old country. There are evidences that automobilism is becoming a moving force in the Colonies as well as at home, and doubtless news of the formation of automobile associations in Australia and in India will reach Piccadilly before long. The movement is thus girdling the Empire—a fact which should be of interest to those British makers who are longing to see a substantial export business in automobiles.

Names for Cars.

SOME time ago, the Lord Justice Clerk of Scotland suggested that owners of cars should name as well as number their vehicles, a course which had been adopted and anticipated in the case of "Antrona," "Sir Charles," and other cars famous in the earlier days of the movement. A motorist at Tunbridge Wells seems to have fallen in with the idea, and a motor-



In a recent issue we mentioned that M. Cormier had returned to Paris from a long tour on a De Dion 8-h.p. two-cylinder car. Altogether over 7,000 kilometres were travelled, and Algeria, Spain, Italy, Germany, Switzerland, and Belgium visited. M. Cormier took quite a large number of snapshots during the tour, two of which are reproduced above. The first was taken near Palermo, Sicily, and the other in Italy.

that the best solution of the housing problem was in the extension of the electric tramway system, with cheaper fares for the working classes. Mr. Douglas Mackenzie pointed out that the development of the motor industry would have a marked effect in decentralising industries. Motor transport for goods could be done cheaper than by railways, but at present our roads were unfit for locomotive traffic—a point which cannot be too often emphasized.

Haulage at Docks.

THE chairman of the Mersey Docks and Harbour Board, Mr. R. Gladstone, is looking forward to the time when horses will entirely disappear from the Mersey Docks estate. In an annual review of the Board's operations for the past year, at the annual meeting just held, he said that three motor lorries had been added to the two already in use, and all had proved most successful in operation. In this and similar ways motor-vehicles will prove the friends of the horse, relieving him from the burdensome duties which have fallen to his lot in the past. Often have horses struggled up inclines with heavy loads, resulting in pain and suffering. With the advent of the motor for heavy haulage, much equine agony will be prevented.

wagonette named the "Fontenay" and a voiturette known as the "Windapiel" are frequently to be seen in the neighbourhood. Motorists continue to send their numbers, names and addresses; those who have christened their cars are invited to similarly favour us.

Cordingley's Exhibition.

OUR Continental readers are reminded that Cordingley's Ninth International Automobile Exhibition will be held in March at the Royal Agricultural Hall, London. As in previous years, this event will attract a large number of visitors from the Continent, who recognise it as a splendid opportunity of observing the progress that is being made by British firms. More than two hundred and fifty exhibitors have already booked space, and not only will the galleries be filled with representative exhibits, but the various adjoining halls will also contain interesting displays. As previously intimated, the Aero Club is organising what should prove a popular feature of the Exhibition, which will open on Saturday, March 19th, and close on the following Saturday. Particulars of the few spaces still vacant can be obtained from the offices of the Exhibition at 39-40, Shoe Lane, E.C.

The Luxury of Signposts.

THE district councillors of Droitwich were alarmed the other day when their surveyor reported that there were ninety-seven points at which sign-posts as to speed limits would have to be erected if the suggestion as to the restriction of the speed of motor-cars was adopted. What with white rings, red discs and green triangles at the head of poles eight feet high, the town—now splendidly uneven in its surface—would present a kaleidoscopic effect, adding another attraction to the magnetic influences of the town, at present limited to brine baths. Under such circumstances Droitwich had better fall into line with Horsham and Tiverton in depending upon Section 1 of the Motor-Car Act for the protection of the public.

Widening Roads.

OUR Notes on the New Act are continued on another page, but we would here give publicity to the suggestion made by Mr. Moresby White, a Lincolnshire motorist and barrister, who directs attention to certain provisions in the Highway Act of 1835 which might, he thinks, be of service in restraining an over-zealous local authority. Section 82 of the Act named states that:—"Where it shall appear, upon the view of two Justices of the Peace, that any highway is not of sufficient breadth and might be widened and enlarged, such justices shall and they are hereby empowered, within their respective divisions, to order such highway respectively to be enlarged in such a manner as they shall think fit, so that the said highway, when enlarged, shall not exceed thirty feet in breadth." According to Mr. Moresby White's interpretation of the Act, the justices could take action upon their own initiative, but he advises that such action had better be taken on the instigation of a third party. The matter is one to which provincial clubs should give their early attention. In the event of a test case being tried the central body might lend useful aid.

A Novel Car.

PARTICULARS of an exceedingly novel car have just reached us from New York. The vehicle has been built by Mr. W. Christie, of the Christie Iron Works in that city; its most striking feature is that of having no front axle, the motor taking its place and driving direct into the hubs. The whole front end of the car, the engine and front wheels included, weighs only 780 pounds, although the engine is of 35-h.p. The entire vehicle, in racing trim, weighs about 1,250 pounds. The frame is built low, the forward wheels being only twenty-eight inches diameter, and the lowest part of the mechanism escaping the ground by eight inches. The engine, which comprises four vertical cylinders, is placed forward in alignment with the axle arms of the front wheels, connection being made with a sliding universal joint, which permits of the direct drive into the hubs. A steering box containing a combination of steering device and spiral spring is placed directly over the hub of either front wheel. The countershaft is placed behind the motor, and on it are the differential, reverse and change gear. It is probable that the vehicle will take part in the races to be held on the Ormond-Daytona beach, Florida.

Motor-Car Imports and Exports.

THE last month of 1903 closed with the smallest importation of foreign automobiles into this country during the whole of the past year. The number of cars and cycles imported during December was 240, the value of the same being returned at £63,747. The value of the "parts thereof" is given as £23,335, so that we get a combined total for December of £87,082 as compared with £123,980 in November last and £62,473 (representing 170 cars) in December, 1902. Some of the imports were of only a temporary character, being reshipped to foreign destinations. Thus last month the reshipments comprised 59 vehicles, amounting in value to £14,345, bringing

down the net imports in December to £72,737. For the whole of the past year the net import of motor-cars, cycles, and parts stands at no less than £1,810,645 (representing roundly 6,133 vehicles). As regards the exports of automobiles of home manufacture, the shipments during the past month amounted to 143 vehicles, of a value of £40,722. Of parts the exports attained a value of £13,996, making a combined total for December of £54,718, compared with £33,395 (representing 83 vehicles) in December, 1902. During the whole of 1903, 957 motor vehicles of British manufacture were exported, these, together with the "parts," representing a sum of £344,325, or exactly double those in 1902.

Irish Railway Enterprise.

EVIDENTLY the Irish tour of last year left its impressions on the railway magnates of the country, and the Belfast and County Down Railway Company have become a convert to the view of motorists as to the value of the motor-vehicle in connection with their business. From the Lancashire Steam Motor Company they have received a steam wagon, which has also a trailer. It is now daily engaged in conveying goods and parcels between Newcastle—the station for Castlewella—and Kilkeel, a distance of twelve miles. Intermediate deliveries are also made, and its utility has already received ample demonstration.

Motorists Must Protest.

THERE must be no delay on the part of motorists in protesting against the recommendations of local bodies for the restriction of motor-car speed within their areas to ten miles an hour. We are glad to hear that the Hampshire Motor Union has sent in an objection to the Local Government Board with reference to the proposed ten mile limit in Winchester, and we hope that other organisations of automobilists will be equally alert. Where no local associations exist, the individual motorists should consult each other and make combined protest. Unless such action is fairly general some cases of unjust treatment may secure official sanction. Hence we would emphasize the warning we recently gave in connection with the Ealing proposals, and urge an adoption of the policy of the Hampshire Motor Union throughout the country.

THE inaugural dinner of the Berkshire Automobile Club will take place at Reading on the 5th prox.

Up to the 7th inst. no motor-cars or motor-cycles had been registered with the County Council of Orkney.

MR. J. E. HOPKINSON, of the Para Rubber Mills, West Drayton, has been placed on the Commission of the Peace for the County of Middlesex.

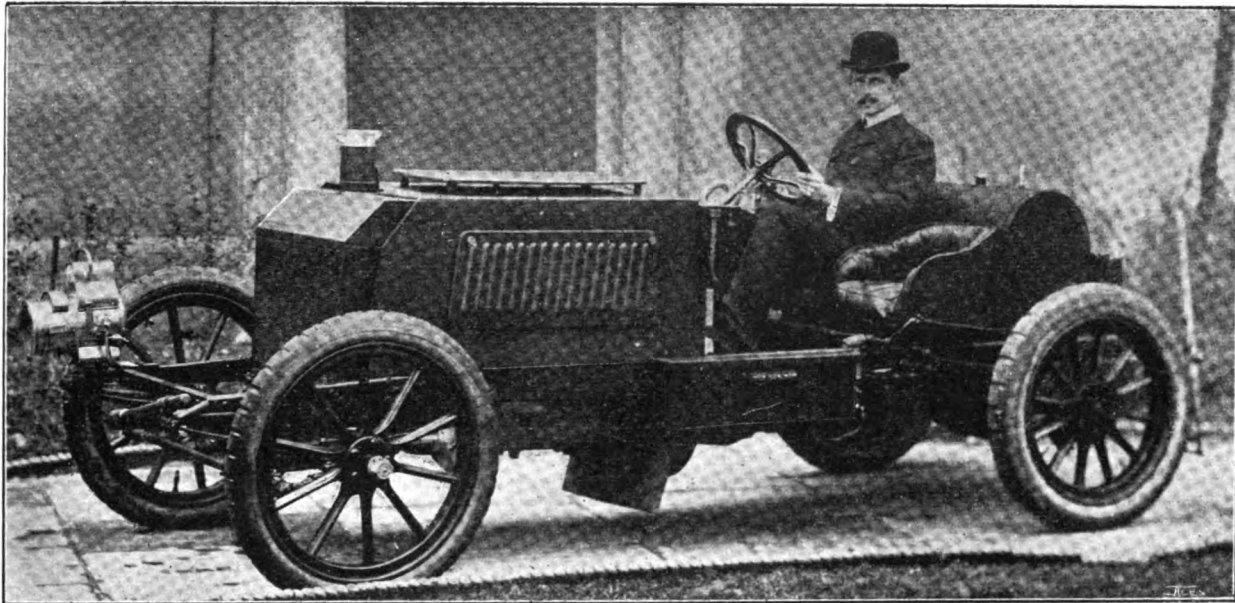
MR. DRURY, who presides in the Southern Police Court, Dublin, has declared his intention of severely enforcing the provisions of the new Act.

THE name of Lieutenant-Colonel Arthur F. Mulliner, V.D., has been added to the Advisory Motor Board of the General Accident Assurance Corporation, Limited.

THE Cuckfield Rural Council has decided to prohibit Stoney Lane, Balcombe; Pilatye Lane, Cuckfield; Cleavers Lane, Cuckfield; Pyecombe Street, and Church Lanes, Pyecombe, to motor-cars, and to put warning notices on the road in Brantridge Lane, and on the cross roads at Warninglid Village, by the Half Moon Inn, three dangerous hills.

THE Walsall Corporation does not propose to apply to the Local Government Board to proscribe any particular roads or streets against a speed exceeding ten miles an hour, but has decided to apply for motor traffic on Longwood Lane to be prohibited altogether. Notice boards are advised to be fixed in Cartbridge Lane, Little Bloxwich Lane, and Goscote Lane, cautioning drivers to go steadily to prevent accident.

The First 1904 Gordon Bennett Racer.



Lieut.-Colonel Mark Mayhew on his Napier's Racer.

THE above illustration shows the 100-h.p. Napier racing-car, with Lieut.-Colonel Mark Mayhew, L.C.C., who will drive it in the forthcoming eliminating trials for this year's Gordon Bennett race, at the wheel. Mr. Mayhew has long been a most enthusiastic motorist, and is a Vice-President of the Automobile Club. He is one of the founders and now commands the Motor Volunteer Corps. He is by no means unaccustomed to the racing track, and took part in the Paris-Madrid race of last year with conspicuous success, passing eighty-three other competitors in the first five hours, until that ill-fated event was abandoned. Should he get through the eliminating trials satisfactorily, it is Mr. Mayhew's intention to drive for England in the great International contest of the coming summer.

The new car, which is of the chainless type, embodies many unique and interesting features. While claimed to be capable of a speed of over 90 miles an hour, it may be stopped and re-started with remarkable celerity. The engine, which is of the four-cylinder type, can be run at from 150 to 2,000 revolutions per minute. The frame is of rolled steel, tapering at either end, where the strain diminishes. It is carried out in front to obviate having long spring hangers, and the radiator and engine are placed well behind the front axle to enable more weight to be placed on the driving wheels. The front axle is a steel forging of H section. The radiator is of the Albany type, with an enclosed fan, driven by a belt off the crankshaft. Even should the pump stop working the water would still circulate on the thermo-syphon principle, only, of course, it would be used up sooner. As will be seen, the radiator filling cap is of very large proportions, enabling additional water to be put in very quickly. The centrifugal water-pump is driven by a chain from the crankshaft of the engine. The crankshaft is hollow, with the view of obtaining extreme strength with minimum weight. The inlet valves are mechanically-operated off the same camshaft as the exhaust valves, by a rod and lever, with an adjustable tappet; the valves are so arranged that they can be inspected by undoing the valve caps only. The lubrication is by a drip to all engine bearings, which ensures every bearing being thoroughly oiled. The

petrol feed can be either by gravity or pressure. A throttle lever is fitted on the steering wheel, by which the car can be very easily handled in traffic. The clutch is of the metal to metal type, no leather or other perishable material being used in its construction, and it is self-contained. It is extremely easy to work, being pushed out by the pressure of three fingers only. Push pedals are fitted. These, together with the position that the driver occupies, enables the clutch to be operated almost without exertion, taking off a great deal of strain from the driver in a long race. All thrusts are taken by ball bearings, and the clutch is fitted with three springs, which can be readily adjusted. The gearing is run through hollow shafts working on roller bearings. On the top speed the drive is direct, with no intermediate shafts running. The universal joint runs in an oil bath inside the gear-box, and the back compensating square shaft is specially constructed to run without lubrication. The vehicle is fitted with a live axle running throughout on roller bearings in a bath of oil. The brakes are extremely powerful, while the steering is of the usual Napier adjustable type.

MRS. FRASER, of Daviot Lodge, Inverness, has taken out a licence to drive a motor-car.

THE first of the new Leon Bollée 24-h.p. cars has just been supplied to the Earl of Derby.

M. LEON SEE, agent for the Samson-Hutchinson tyre band, has removed from 9, Hills Place, Oxford Street, to larger premises at 8, Snow Hill, E.C.

THE Wantage Engineering Company have lately completed a steam motor lorry for Messrs. W. G. Phillips and Sons, Limited, Tower Brewery, Oxford.

At the King's Heath (Birmingham) Police Court, Charles Showell, of Moseley, was fined 10s. and costs for riding a motor-car without exhibiting the red light behind.

THE British agency for Tony Huber cars has been secured by the Paddington Motor Company, Limited, which have opened a large garage and repair works at Banister Road, Kensal Rise, W.

THE MOTOR CAR ACT.

THE size of the licence issued by the various authorities varies as much as do the fines inflicted upon motorists in different parts of the country. It is a pity that uniformity could not have been established, and it might be well if the Local Government Board would furnish the various registration authorities with a hint as to the advisability of issuing the licences in a convenient and handy form. At present these range from the needlessly large sheet of the Middlesex County Council to the neat leather bound parchment licence of Dorsetshire, upon the style of which we would congratulate the clerk to the County Council. As intimated a few weeks ago, this can be readily put away in the waistcoat pocket. It might well be made the standard form of licence.

The "man in the street" has taken much interest in the number on the car, and his curiosity has scarcely yet exhausted itself. He cannot understand why some plates should have a red background and others a more sombre hue. The location of the letters—in some cases to the left of the figures, and in others above the numerals—has also presented its complexities. Many have wondered why the numbers are needed at all, and a car standing outside an auction room in Holborn a few days ago was regarded as one of the "lots" by a suburban dealer in "sacrifices." Again, the numbered vehicles have been associated with the long-promised public-service vehicles in London; and, altogether, the new means of identification have provided a "nine days' wonder" of an unexciting kind.

At the Winchester quarter sessions Mr. C. A. Garland, the Recorder, referring to the Motor Car Act, said an important section was that which now enabled petty sessional justices, after the second and third offences, where they found that the infliction of a fine was no terror and worked no good, to send the defaulter to prison. There were one or two rather curious sections which would be dealt with, no doubt, when they came up. Section four gave the justices the power to suspend a licence in cases where the speed limit was exceeded, and the justices also had power to take the licence away entirely. There were other sections which would lend themselves to a good deal of difficulty in working, and might require the services of their excellent clerk to the justices. Section six, which dealt with the duties devolving upon a person who caused an accident, required that person to stop and give his name and address, and if he refused, it made him liable to punishment. There again there seemed to be room for difficulty, because it said nothing about the man on a cycle who might be run over, and what would happen if a motor ran into a flock of sheep he did not know. That might become a serious matter in that neighbourhood.

Restrictions of the speed of motor vehicles to ten miles an hour are being proposed in East Grinstead, Newport (Mon.), Grange over-Sands (Lancashire), Gainsborough, Worthing.

The returns for Ireland with reference to the number of motor-cars are interesting, showing that 270 cars and 344 motor-cycles have been registered in the country where the Gordon Bennett race of 1903 was run. Drivers' licences to the number of 578 have also been issued. It must be remembered that these figures are the official returns obtained from the registrars, and result from the numbers published in last week's *Motor-Car Journal* being added to those given in the present issue. It will be safe to say that there are more than 600 automobiles in use in the Emerald Isle.

The working of the new Motor-Car Act in Hampshire is causing considerable friction between the County Council and the local authorities. A short time ago the County Council requested the Borough and Urban District Councils throughout the county to schedule the dangerous roads and corners in their respective areas. The local authorities complied with the request, has submitted to the County Council schemes for

marking places at which the speed of cars should be reduced to the lowest limit. The County Council ignored all recommendations, but had now appealed again to the local authorities to erect danger signs where they are needed. At a meeting of the Andover Town Council it has been unanimously decided to take no notice of this request, and a resolution received from the Christchurch District Council protesting in strong terms against the treatment of the County Council was adopted.

Lord Lindley, in charging the Grand Jury at the Norfolk Quarter Sessions, referred to the Motor Car Act of 1903. He said he wished to prevent the acceptance of an idea which he was afraid would be common among drivers—that because they could never go beyond twenty miles—he was speaking of highways—they might go up to twenty miles, and so long as they did not exceed twenty miles they were all right. That was entirely an erroneous view. The point to be borne in mind was not so much the maximum speed beyond which they could not go, but the duty to take care, whatever the speed might be.

The suggested regulations with regard to signposts now under the consideration of the Local Government Board are as follows:—(1) For ten miles or lower limit of speed: a round white ring, 18 in. in diameter, with plate below giving limit in figures. (2) For prohibition: red solid disc, 18 in. in diameter. (3) For caution, dangerous corners, cross-roads, or precipitous places, hollow, green, equilateral triangle. (4) All other notices under the Act to be on diamond-shaped boards. All notices to be on one side of road and facing approaching driver. All prohibition or caution boards to be fifty yards from spot to which they apply. It is considered not desirable to make any regulations as to material, size, or colour of posts, provided that the under side of signs are at least eight feet from ground level.

The table we published last week giving the registrations up-to-date showed that 11,418 automobiles had been registered. Below we give particulars of the registrations which have been made in counties and boroughs not then enumerated, and to these figures have been added bringing last week's returns up-to-date. Thus we have been able to secure official returns showing that 14,000 automobiles have been registered by the authorities empowered to register motor vehicles.

BOROUGH.

	Motor-cars.	Motor-cycles.	Total.	Drivers' licences.
Grimsby ..	10	17	27	25
Leicester ..	42	56	98	123
Halifax ..	25	10	35	42
Barrow ..	17	13	30	36
Gateshead ..	5	4	9	22
Sheffield ..	73	76	149	159
Stockport ..	11	12	23	27
Plymouth ..	14	24	38	40
Burnley ..	12	—	12	—
West Brom- wich ..	8	7	15	17
Partick ..	6	2	8	20
Cork ..	4	8	12	9
Waterford ..	2	4	6	15
Limerick ..	5	5	10	11

COUNTIES.

	Motor-cars.	Motor-cycles.	Total.	Drivers' licences.
Northampton ..	69	67	136	157
Bedford ..	39	67	106	127
Lincoln (Holland) ..	23	32	55	56
Sussex (West) ..	80	87	167	179
Soke of Peter- borough ..	4	17	21	22
Durham ..	80	58	138	162
Huntingdon ..	17	43	60	70
Northumberland ..	75	34	109	98
Dorset ..	96	61	157	200
Isle of Ely ..	12	15	27	30
Isle of Wight ..	40	28	68	65
Brecon ..	17	9	26	25
Montgomery ..	9	5	14	16
Monmouth ..	30	29	59	59
Carmarthen ..	19	22	41	42
Merioneth ..	10	15	25	28
Denbigh ..	27	13	40	40
Cardigan ..	6	7	13	—
Elgin ..	8	10	18	19
Inverness ..	7	3	10	10
Ayr ..	35	18	53	69
Banff ..	4	4	8	8
Lanark ..	57	20	77	107
Nairn ..	—	2	2	2
Kincardine ..	3	—	—	4
Roxburgh ..	18	2	20	25
Berwickshire ..	8	5	13	17
Caithness ..	4	—	4	5
Sutherland ..	1	1	2	2
Down ..	18	32	50	52
Wicklow ..	13	13	26	19
Cavan ..	3	1	4	5
Londonderry ..	2	1	3	3
King's County ..	8	10	18	14
Kerry ..	1	4	5	5
Roscommon ..	1	1	2	3
Armagh ..	8	5	13	13
Sligo ..	2	4	6	3
Limerick ..	6	3	9	—
Donegal ..	9	9	18	14
Tipperary, South Riding ..	14	9	23	18
Galway ..	2	2	4	2
Antrim ..	11	11	22	22
Tyrone ..	5	15	20	18

CONTINENTAL NOTES.

THE German Club has decided that all the cars competing in the Gordon Bennett Cup race shall carry a shield bearing the number and the letters G. B. It has also been decided to establish both telegraphic and telephonic communication over the whole course. It is probable that the German eliminating test will be run over a course in the Luneburg district. Although the Circuit de l'Argonne is being spoken of as the course for the French eliminating trials, nothing has so far been definitely decided. It is announced that Thery, who formerly drove a Decauville, will steer one of the Georges Richard racers in the test.

BRITISH motorists who contemplate visiting the Gordon Bennett course are warned to keep clear of Wiesbaden, where a number of streets have been closed to automobiles. The notices are so small that they can easily be missed, and the police are on the alert.

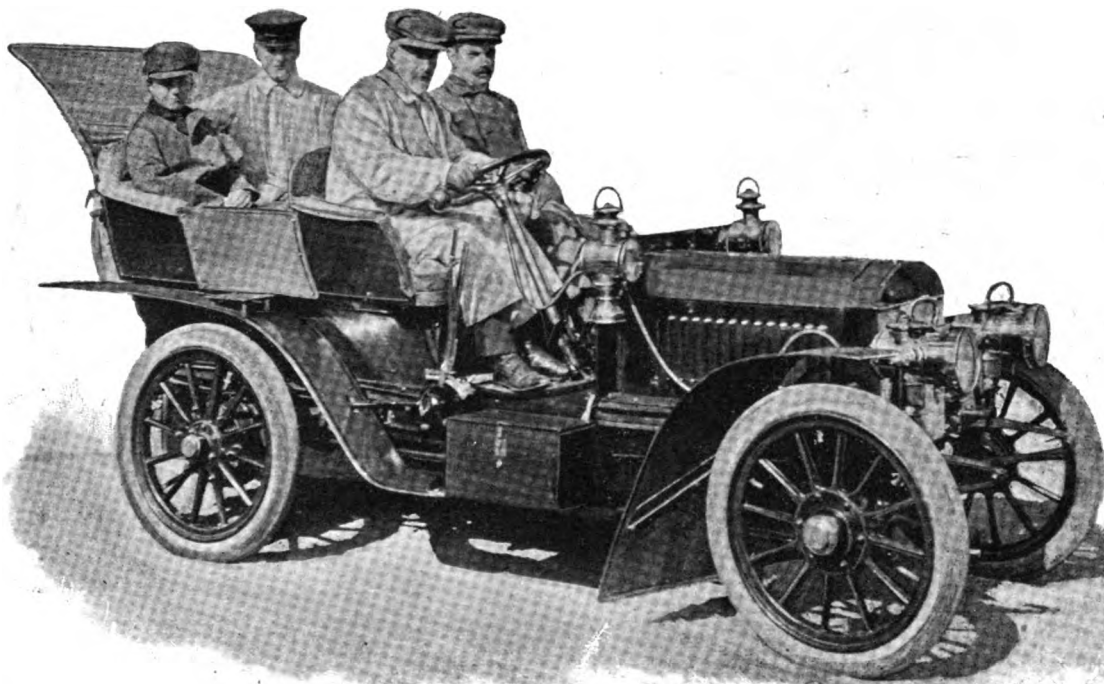
So far little or no information has been allowed to transpire with regard to the Mercedes racers which the Cannstatt-Daimler

De Dietrich racer driven by Mr. C. Jarrott in Paris-Madrid. In order to secure a larger entry, the date of the race for the Sneden Cup has been postponed until the 14th February.

A GOOD deal of dissatisfaction is being shown with the awards of the jury in the carburettor competition held in connection with the recent *Salon* in Paris, two of the competitors—De Retz, and Moisson, the maker of the Sthenos, having protested against the decision, which, it is stated, is not in accord with the results obtained.

THE programme of the meeting which is being organised by the Italian Automobile Club to take place from May 11th to 15th will include a reliability trial over a distance of 130 miles, a fuel consumption trial, a speed trial, and a hill climb; all of these events will be open to touring cars, four classes being established for each.

ON Sunday last, the Antwerp Automobile Club held a series of speed trials over a 500 metre course from a standing start and a stopping finish. Elskamp on a 20-h.p. Gobron made the best time, viz. 50 3-5 sec.; Joostens on a 12-h.p. Clement was



His Excellency Gobeimer Rath Alexander Pallavicini, a prominent Austrian Motorist, at the wheel of his 16-h.p. Spitz Car. *[Allgemeine Automobil Zeitung.]*

Company are building for the Cup race. It is known, however, that the engines will be of greater capacity than the 80-h.p. cars of last year, almost all of which were destroyed in the fire. For the 1904 season the Mercedes cars are to be built in the following sizes:—18 to 24 h.p., 24 to 28 h.p., 28 to 32 h.p., 40-h.p. and 60-h.p. No important change is being made in the brakes and change speed gear on last year's models, but the 1903 type of motor, except as regards the 60-h.p. cars, is being given up and a return made to that employed in 1902, the latter having proved superior to last year's engine from the point of view of quietness and regular firing. It is probable that the first of the 1904 models of Mercedes cars will make their bow to the public at the forthcoming exhibition at the Agricultural Hall, London.

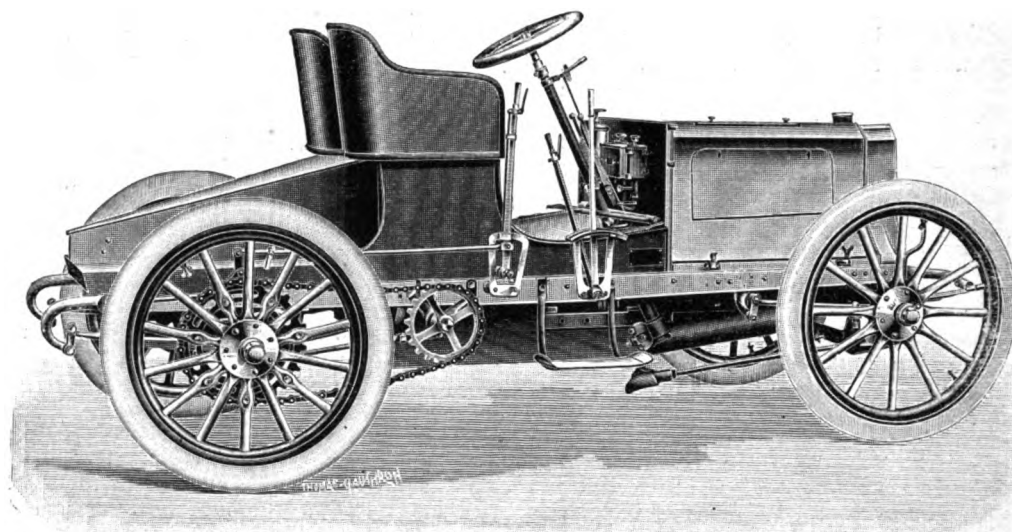
THE motoring season in Algeria is now in full swing. Among the latest arrivals is Mr. C. Gray Dinsmore with his 60 h.p. Mercedes, while the Barons Joseph and Pierre de Crawhez are daily expected with powerful cars. An Algerian motorist, M. Pierre de Malglaive, is reported to have purchased the 45-h.p.

second in 59 2-5 secs.; De Benkelaer on a 16-h.p. Vincke third in 1 min. 1 2-5 secs.; Knoops on a 8-h.p. Vivinus fourth in 1 min. 4 sec. and Cogels on an 8-h.p. Germain fifth in 1 min. 53 4-5 secs. The speed trials were followed by a consumption test, each competitor being given an amount of spirit equal to one litre to every 1,000 kilog. of complete weight of car. This event was won by Joostens, who on his Clement, weighing 1,090 kilog., covered a distance of 11 kil. 850 metres.

LA SOCIETE DES ETABLISSEMENTS POSTEL-VINAY is, it is announced, at present engaged on the construction of a combination petrol-electric motor-car in which a number of new features will be incorporated.

UNDER the name "Warm Salt," a French firm, Les Usines Durandal, of Lecluse (Nord), have lately brought out an anti-freezing compound for use in the water tanks of petrol motor-cars, and also the generators of acetylene lamps in winter. It is claimed to have no deleterious effect on the metal of the tanks and pipes, and to dissolve any "fur" which may have formed in the cylinder jackets.

D



General View of 16-h.p. Miesuset Car, with Racing Body.

THE "MIEUSSET" CAR.

THE Farman Automobile Company, Limited, has secured the agency for Great Britain and Colonies for the petrol motor-cars made by Les Ateliers de Construction Mecanique et d'Automobiles Miesuset, of Lyons. These cars are being built in a variety of types, with one, two, four and six cylinders. The other day we had an opportunity of inspecting the first of these cars to reach this country—a 16-h.p. four-cylinder vehicle, of which an illustration is given above. The general arrangement is similar to that adopted in the Panhard type of vehicle. The frame is of channel steel, the engine and gear-box being carried on a secondary frame of the same material. The motor comprises four vertical cylinders cast in two pairs; the inlet valves are mechanically actuated and are interchangeable with the exhaust valves, which are located on the opposite side of the cylinders. The bore is 103 mm., the stroke 130 mm., and the normal speed 800 revs. per min.; the latter can, however, it is claimed, by means of the throttle and ignition and cutting out the governor, be regulated from 50 to 1,200 revs. The ignition is by magneto, while a gear driven pump maintains the circulation through the cylinder jackets and the combined honeycomb radiator and water tank. Each tube in the latter is riveted over, no solder being used, so that should a tube or tubes be accidentally damaged, the cost of repair is very small.

A large adjustable fan is provided to induce a current of air, through the radiator. The carburettor is of the float feed type with a piston form of throttle valve controlled by the governor; the spraying chamber is surrounded by a jacket, through which part of the exhaust gases may be caused to pass.

From the engine the power is transmitted through a large diameter leather-faced clutch to a gear box adapted to give four speeds forward and a reverse. The shifting gears are in two trains on the lines adopted in the Mercedes, the change gear control being also practically the same. From the differential countershaft the power is transmitted to the rear road wheels through side chains. A pedal actuates a band brake on the countershaft, while a hand lever at the side controls band brakes on drums connected with the sprockets on the rear road wheels. On applying the hand brake the first action is to withdraw the clutch and so disconnect the engine from the transmission.

The steering wheel is inclined and has the latest type advance ignition and throttle control levers working from its centre, a hand accelerator being also within convenient reach. The steering worm is endless and the levers are irreversible. Any back lash can easily be taken up, while the front radius rod can

also be adjusted should any accident throw the front wheels out of line.

The lubricator is belt-driven off the engine; it can be easily regulated and is positive in its action, the oil being forced to its destination. A universal greaser is also mounted on the dash board; from it branch a series of pipes each with a lettered tap, so that any particular bearing can, if necessary, be given an extra supply of grease.

Altogether the Miesuset cars, without embodying any startling departure from what may be termed standard practice, give evidence of being the result of careful design. Although the illustration shows only a two-seated car with a long box at the rear for tools and spare parts, of which, by the way, a very ample supply is furnished with the car, it will be understood that any desired type of body—tonneau, double phaeton, etc.—may be fitted to the chassis. We may add that the Miesuset Company have lately completed a 50-h.p. 6-cylinder racing car, which will probably take part in the forthcoming racing events in the South of France.

THE motor-car belonging to the Director of Public Works at Kinta, in the Straits Settlement, is said to have proved somewhat of a disappointment.

MOTORING in the Bolton district is likely to receive an impetus from the establishment of the Bolton Motor Company, Limited. Some fine premises have been acquired in the town, and Mr. E. J. Hartenfeld appointed general manager.

MESSRS. CLEMENT TALBOT, LIMITED, who are erecting the extensive new works in North Kensington for the manufacture of automobiles, have become the possessors of all the patents owned by Messrs. A. Clement, of Paris, and are, we understand, about to take action against a large number of infringers.

The restriction of the speed of motor-cars on certain specified highways or within certain specified limits or areas in the West Riding is occasioning the authorities much trouble. Recently the County Council sent out a circular inviting expressions of opinion from the local authorities. In reply, in the aggregate the prohibition of motor-cars was suggested upon 372 highways, and restriction of speed upon 620 highways, in addition to which it was desired that the maximum speed of ten miles an hour should apply to a considerable number of areas. It has been decided that any application to the Local Government Board for regulations to prohibit or restrict motor-car traffic on highways should be postponed for the present. The County Council is wise in thus overcoming a difficulty.

END TO END ON AN ARROL-JOHNSTON CAR.

IT will no doubt be remembered that three of the Arrol-Johnston cars manufactured by the Mo-Car Syndicate, Limited, of Paisley, were entered for competition in the 1903 Reliability Trials, but, owing to a delay on the part of the railway authorities, they were delivered too late. It was only a question of minutes, but the committee had to adhere to their rules, and the cars were debarred from competing. It was naturally a great disappointment to the company, and, as an alternative, Mr. Johnston decided to have a non-stop run from Land's End to John o' Groat's, under practically the same rules as governed the Automobile Club trials. After coming to this decision, Miss Murison, a young Irish lady, and a friend of Mr. Johnston, proposed to him that she should drive one of the cars, and her offer was accepted. The

of a succession of short, steep hills, which, however, could be rushed, and which merely served to "tune up" the motor. There is a long run down of about four miles through Penzance, and all along this we made good speed. Near Connerton we came upon the first of a long series of steep hills. Surely Cornwall must be the most bumpy county in England. No sooner had we rushed down one hill, than we were plodding our way up another, gradients of 1 in 12 to 1 in 15 being very common occurrences.

These and the winding nature of the lanes made fast travelling an impossibility. It had been dark over two hours when we reached Bodmin at 8.30 p.m. With the exception of a halt to light up lamps, we had come right through—some sixty-one miles without stopping.

We left Bodmin at 6.45 the next morning, with the firm intention of making Bristol that evening. At the outset we lost our way and wasted thirty-five minutes, having to go right back into the town to find it. Skirting Dartmoor on the west



The Arrival at John o' Groat's.

vehicle was a six-seated, 12-h.p., two-cylinder car, with wheel steering. The load consisted of five passengers, with a plentiful supply of luggage, for the storage of which the cars have a good capacity. Miss Murison was quite a novice at motoring, for three weeks before she had never driven a car, and, in spite of the great aptitude she showed for driving, it speaks volumes for the strength and simplicity of the Arrol-Johnston car, that it could thus easily be mastered by a lady with only a few weeks' experience of driving, and could be driven for about 1,100 miles, with, practically nothing to be done to either the car or engine in the way of repairs.

At a quarter to three on Tuesday afternoon, September 22nd, we, says a writer in the "Coach Builders' Journal," left Land's End, and started on our journey North. Two other cars of the same make, driven by members of the opposite and presumably stronger sex, were going to take longer runs each day, so we left them in Penzance, intending to start the following evening. From Land's End to Penzance the road consisted

and north, we ran through Launceston, arriving at Okehampton at twenty-five minutes past ten. On the road from Exeter to Taunton we encountered several very steep hills, but a stiffer climb met us at Wells, on the road from Taunton to Bristol, a hill over five miles long and in some places as steep as one in 9, tested the hill-climbing qualities of the car. After a run down to the old level and several more climbs, we pulled up at the George in Bristol at 6.20 p.m., having travelled 145 miles since morning.

Thursday morning gave promise of another brilliant day, which promise proved to be delusive. It was five minutes to seven before we wheeled out of the yard gates, but the country was level, and we made good time to Gloucester. Thence through a portion of the Black country to Kidderminster, where it became more hilly, and on to Bridgenorth, where we stopped for refreshment for man and beast in the shape of lunch and petrol. We arrived at 12.30 p.m., having done ninety miles since breakfast, and we were again on the road at 2.15. Up to now the weather

had been perfect, but from Bridgenorth to Whitchurch (Shropshire), our enjoyment of the lovely scenery that ride affords was somewhat marred by a blinding rainstorm. At Whitchurch we stopped for some little time, and here the other two cars caught us up, having accomplished the journey in two stages. Land's End to Taunton, and Taunton eventually to Warrington, which lay thirty-two miles further on from Whitchurch. Thence onward the three cars kept, more or less, together all the way to John o' Groat's. The latter part of this day's journey necessitated very careful driving, the country being more populous, and the roads very greasy. Owing to Miss Murison's careful driving, we escaped, with one or two slight exceptions, from that bugbear of motorists—skidding. We arrived at Warrington at 7.45, having done the longest day's run as yet, namely, 158½ miles.

We left Warrington at a quarter to seven the next morning. It was pouring with rain, and the first thirty miles of road through the mining district seemed most doleful. The road between Preston and Wigan consists mostly of granite sets, with tram lines in the centre of the road. From Preston to Kendal we went warily, as we had heard rumours of police traps. On through Lancaster, Carnforth, and Kendal, we commenced to climb the "Shap," ascending, in a little over nineteen miles, over 1,200 ft., at gradients up to 1 in 11. Then a hilly drive through magnificent scenery to Carlisle, which we reached for a late lunch at three o'clock. This finished, we were quickly over the Border by way of Gretna Green, and, driving fifty-seven miles, we pulled up at Abington Inn at 8.30 p.m.

On Saturday morning we made an early start, leaving at a quarter past six, and reaching Stirling at 9.15. We then journeyed on to Perth, through Dunblane and Auchterarder. Passing through Perth without a stop we commenced, perhaps, the most beautiful part of the journey. Proceeding by Bankfoot to Dunkeld, we followed the course of the Tay through some beautifully wooded mountains. Past Ballinluig, Pitlochry, the Pass of Killiecrankie and Blair Athol we went, the scenery getting every moment wilder and more beautiful. From Struan to Kingussie the mountains were bare and bleak, and the roads were of the roughest description. During the journey we had climbed from a level of 250 ft. to 1,500 ft. above the sea in a stretch of twenty-five miles; we rested for about twenty minutes at Kingussie, where we learnt that the other two cars were about an hour ahead of us. Between Kingussie and Inverness occurred the solitary mishap of the journey. About sixteen miles out of Inverness we detected signs of the petrol tank being empty. On examination it was found to be not quite empty, and the car was started again, only to stop half a mile further on—fortunately in a village. There it was found that the float of the carburettor had sprung a small leak, but this was soon put right. Anyway, we had to have more petrol to get to Inverness, and so a telegram was sent for one of the other cars to bring some. By this we were delayed 3½ hours and reached Inverness in a thick fog half an hour after midnight, having done 203 miles in a net running time of nine hours.

The next day was Sunday, and we spent it in resting and exploring the beauties of Inverness. On Monday morning we left Inverness at ten minutes to five, some time before sunrise. We travelled through Beaulieu, Dingwall and Allness, where we turned to the left, leaving Tain on our right. So far the road was flat, with some slight undulations. The sun was just rising over the black Isle as we travelled by the Cromarty Firth, a really grand sight. From Wick we made a quick run of seventeen miles to John o' Groat's, stopping on the way twenty minutes at Keiss to inspect some old cave dwellings. We had lost our way on the moors, but arrived at our destination at 3.40 p.m.

Our car arrived first and the other two came in within a few minutes. The entry was a triumphal one. A new record had been made. Miss Murison, who had driven every yard of the way from Land's End, was the first lady to accomplish a very arduous task. It needs no effort to drive a car forty or fifty miles, but to take a heavy car with five passengers from 150 to

200 miles a day for six days, over all roads and in all weathers, is an undertaking requiring both determination and coolness, and Miss Murison is to be congratulated on her achievement. The journey had been done in a net running time of 57½ hours, at an average speed of 15½ miles an hour. The amount of petrol consumed averaged a gallon for every twenty miles. On the return journey Miss Murison drove far enough to complete her thousand miles. Driven by an amateur continuously for six days, nothing went wrong except the float feed—which, by the way, is almost the only part of the machinery not made by the Mo-Car Syndicate. The roads were very rough, and the tyres solids, yet, in spite of these conditions, the engine and all the parts were working as sweetly on the evening of the last day as on the first.

SOME USEFUL NOTES.

SINCE the general adoption of electric ignition for motor work the dangers involved in the use of petrol have practically disappeared. Whenever there was a flame or incandescent tube in the vicinity of the petrol tank the risk of it catching fire was very considerable, especially in case the vehicle got overturned. Serious accidents have even occurred on cars through the petrol leaking out through a joint or overflowing and coming in contact with the burner or hot tube, and thereby practically ruining the car. Although the danger is now very slight, a few words of caution, however, will not be out of place, in case the novice might unthinkingly bring his oil lamp too near the petrol tank or carburettor to examine them at night. It is advisable to keep it at least 2 ft. away; in fact, it is an excellent plan to have a small electric lamp of four volts and a few feet of conducting wires to attach to the ignition battery for this purpose. It is quite safe to examine any part of the motor with this.

IN the remote possibility of the petrol getting on fire by some means or other, remember that it cannot be put out by throwing water on it. As it is so very much lighter it simply floats on the water and burns as strongly as ever. The only effectual way to extinguish it is to smother it, or to prevent the air getting to it, such as by throwing a coat or rug over the flame; sand or something of the same nature would also do.

ANOTHER word of advice is this: Avoid working with petrol in a closed stable as much as possible. In any case have a window wide open, because, apart from the smell produced, it is quite conceivable that an explosive mixture might be formed by the petrol evaporating and mingling with the air of the room. If these few hints and precautions are observed, petrol will be quite safe to handle in every respect.

WHEN a boiler of a steam car is not to be used for some time, all water should be drawn off. It is also advisable to take a small quantity of sal soda—about a cupful—dissolve it in warm water, and pump this into the boiler. Then fill the boiler nearly full of clean water, start a slow fire, gradually bringing the water to the boiling point, and continue the fire for about ten minutes. Turn out the fire and blow off the boiler until dry. This leaves a coating which prevents further rust, and thus prolongs the life of the boiler. The water system should be carefully drained. This can be done by opening the valve at the bottom of the water column, and the small pet cock which is usually placed below the pumps in steam cars of the Locomobile type. If the car is equipped with steam water pumps, great care should be taken that they are thoroughly drained, and oil worked into the cylinders and valves. When the car is to be used again it should be fired up and blown off before beginning to use it regularly, as otherwise the deposits of soda will cause foaming in the boiler, incorrect registration in the gauge and priming through the engine.

MOTOR-CYCLING NEWS.

THE accompanying illustration shows Mr. A. T. Chapman, of Georgetown, British Guiana, on the "Brown" motor-bicycle purchased by him in May of last year. Special interest was



shown in the machine in Georgetown, as it was the first motor-cycle used in the district. It has been much admired, and has given great satisfaction to its owner.

"MOTOR-CYCLISTS' CLOTHING" was the topic discussed at a recent meeting of the New York Motor-Cycle Club. There was quite general agreement that the leather garments which have been the vogue have about run their course. If they are warm in winter they are unsuitable for summer wear, and at all times they are not such as an average man desires to wear in a hotel dining room. They show the dirt readily, and, when old or creased, appear disreputable. All agreed that the light, flat cloth cap, with flaps that lap over and are secured on the crown when not in use on cold days, is not only "dressier" but more comfortable and more generally serviceable than the so-called automobile cap.

THE only thing of leather that was favoured was leggings. Those of the "overall" type that reach to the hips were disapproved of, and short flexible ones reaching only to the knees were recommended. Snap clasps instead of straps and buckles were favoured, and the legging generally was considered worthy of encouragement because it permitted men to ride on short notice and did not necessitate a change of trousers. The proper cloth for motor-cyclists' wear provoked much discussion. The need for a material that would not readily show dust was generally appreciated, and the opinion of the meeting was that a "pepper and salt" mixture was the one adapted to best serve the purpose.

GOGGLES constituted another feature of the motor-cyclists' outfit that was discussed at some length. A small minority held that they rarely were really necessary, and at all times were hideous. All agreed that the mask or half-mask was in this category, but most of the speakers maintained that an eye protector of some sort was essential. Several of those present who wore spectacles said they found them to be all the protection needed, and while the opinion was not unanimous, it was in the majority, that enlarged spectacles with concave lenses of plain glass would prove ample for all practical purposes.

UNDER the name "Picrator" Messrs. Guy and Wheeler, of Liverpool, have brought out a device for use in connection with the engines of motor-bicycles. It is an arrangement to make

use of picric acid to obtain greater power than when using petrol alone. It is not intended for continuous employment, but only to facilitate the starting and for climbing hills when more power is required. It is designed to work in connection with spray carburettors, and is interposed between the latter and the petrol tank by means of a three-way cock. The "Picrator" itself consists of a chamber in which is placed some picric acid, and a gauze cartridge filled with glass wool. By means of the three-way cock the petrol supply may be (1) shut off (2) sent through the "Picrator" to the carburettor, and (3) direct to the carburettor. The inside of the picric chamber is coated with a substance upon which, it is stated, the acid will not act.

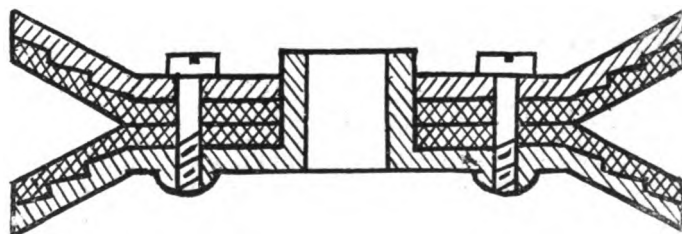
At Long Eaton Petty Sessions, Everard Wilson, Beeston, has been fined 5s. and costs for riding a motor-tricycle on the 21st December without a light. From several sources we hear of police activity in this respect in other places, and motor-cyclists should take warning in time.

ON Boxing day, Mr. H. Patten, of the Electrical Lighting Depot, East Ham, made the journey from that place to Bournemouth, a distance of 118 miles, on his Rex motor-bicycle with surface carburettor, the consumption of petrol being only six pints. This for a 3 h.p. engine must constitute almost a record.

A TELESCOPIC foot-rest for motor-cycles has lately been introduced by Mr. A. B. Clark, of the Curfew Ironworks, Sandwich. The special features of the device are that the ends of the rest, which carry rubber-covered foot plates, telescope into the main tube, which is provided with a clip to fit round the down tube of the frame. The foot plates are mounted on springs so as to absorb vibration, and a trigger attachment is combined with them, so that by slight pressure on the plates the telescopic ends are forced out by internal springs, the rider's legs being thus clear of the engine. When the footrest is not required, it is only necessary to apply slight pressure to the ends, when the tubes collapse to normal dimensions.

MR. T. SILVER, of Bristol, has just returned from South Africa, where he accomplished the feat of riding 6,000 miles in sixty days on his Quadrant motor-bicycle. In the course of the trip he visited all the well-known battlefields, slept in native kraals, and was laid up six weeks with the fever.

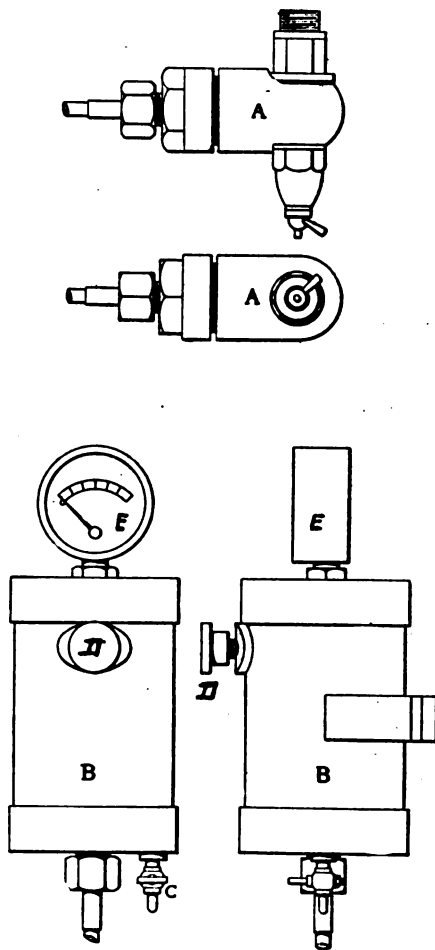
THE accompanying illustration shows a section of a new friction and pulley wheel for motor-cycles which has been devised by Messrs. Higgins and Murray, of Catford, S.E., and for which special advantages are claimed. The pulley is made in halves and may be of any metal, the back half containing the boss and key-way. The front flange is fixed to the back by means of screws. The special feature of this wheel is the application of the discs, e.g., various fibres, leather, etc. The discs are moulded into the shape of the flanges, the inner faces of which are serrated and are secured by the clamping of the two halves of the wheel, the screws passing through the fibrous lining. The fibre discs are thus firmly held in position by clamping, and cannot give in the least. It is claimed that a belt will work on this pulley in wet as well as in dry weather without slipping, that



changes of temperature have no effect upon the transmission of power, and that the pulley being V shaped with a fibrous lining, the fibrous discs can be inexpensively and easily replaced. The patent includes several forms of gearing with the application of fibrous discs, amongst these being parallel and bevel friction wheels, for use in motor vehicles.

AN AUTOMATIC TYRE INFLATER.

TO pump up a large motor tyre is an arduous piece of work, and when a tyre fails to hold air and has to be pumped up every few miles the motorist's position is not an enviable one. Some automobilists have got over the difficulty in fitting up devices on their cars by means of which the motor is made to operate the tyre inflater. In a recent issue our contemporary, *La France Automobile*, described an ingenious automatic tyre-inflating arrangement known as the "Girip," in which the burnt gases of the petrol engine are employed in inflating the tyres. Referring to the accompanying illustration, it will be seen that the apparatus consists of three main parts, as follows:—A valve fitting A about the size of an ordinary sparking plug, which is made of pure nickel and screwed into the wall of one of the cylinders; a "purifier" B consisting of a reservoir the size of a grease cup, which is fastened to the dashboard of the car; and a small diameter helical steel tube for connecting the valve fitting to the purifier. To the top of the purifier is fitted a pressure gauge E, and near the top of the same may be



attached at D a long rubber hose for connection to the different tyres.

The operation of the apparatus will be readily understood. After a tyre has been repaired and is to be inflated, the ends of the long rubber hose are fastened to the tyre valve and the purifier respectively. The motor is then put into operation, and as soon as an explosion occurs in the cylinder the automatic valve in the nickel valve fitting A opens and allows some of the burnt gases to pass through this valve and the helical steel tube to the purifier, and from there to the tyre. The products of combustion from the cylinder contain a certain amount of moisture, and this is condensed in the steel tube, the water collecting at the bottom of the purifier, from which it may be drawn off through a cock C.

In inflating the tyres the motorist need only watch the

pressure gauge on the purifier and shut off the connection with the cylinder when the proper pressure has been reached. It is said that by means of the apparatus only about two minutes are occupied in inflating a 920 by 120 tyre.

DEVELOPMENTS IN LONDON.

CONVENIENTLY situated in the Tottenham Court Road, London, W.C., the new premises of Milnes-Daimler, Ltd., demonstrate the strong position which is being obtained by the motor-car industry in this country. The show-rooms have capacity for half-a-dozen large cars, while the whole of the upper floors are devoted to the commercial side of the concern. In the basement are store-rooms, where spare parts of the Mercedes cars are kept, a system of numbering being adopted to ensure an order of arrangement that should prove a considerable factor in the satisfaction of clients. A large stock of tyres is also kept. Passing from the block of buildings facing the Tottenham Court Road, Mr. H. G. Burford, the managing director, recently conducted us through the petrol stores, where 200 gallons can be accommodated. A gap at the rear of the premises separates the show-room from the works, and materially assists the excellent lighting arrangements of both divisions of the buildings.

In the works is a 5-ton lift, communicating with six floors, and having an entry direct from Alfred Place in the rear. On the ground floor we noticed one of the great delivery vans utilised by Messrs. Nelson and Sons, while in the street outside was a G.W.R. van, of which several have been ordered from the firm. Opening thus into a quiet thoroughfare, the works have a facility of access that is exceptional in the centre of London. On upper floors are machine rooms, the assembling department and capacity for storage. Mr. Burford has systematised the place on modern lines, and the way in which every tool is entered when taken from stock by the workmen is characteristic of the thoroughness with which all details have been thought out. The tools and machinery are all of the latest type, and with its electric lighting, its adequate sanitary arrangements, the hot water system of heating and general equipment, the works should convince every motorist of the evident intention of Messrs. Milnes-Daimler, Ltd., to be in the forefront of motor repairing firms. As is well known, they are supplying motor-buses to several southern places, the latest being Brighton, while last week similar orders were executed for South Africa. Corporation overhead motor trolleys are also a speciality with the firm, and several of their types of these vehicles are in active service in the North of England.

In North Street, Grantham, Mr. J. Smith has opened a garage and provided a repair shop for automobiles.

At the Tiverton Quarter Sessions the Chairman said the town was wise in not making bye-laws for the local modification of the Act.

MANY complaints have been appearing in the Scottish journals as to the speed at which motor-cars are driven in Princes Street, Edinburgh.

MESSRS. WM. BEARDMORE AND COMPANY, LIMITED, Parkhead, Glasgow, have lately put down a plant for the production of pressed steel motor-car frames.

THE War Office has consented to a grant of £250 to members of the Motor Volunteer Corps for exceptional wear and tear of cars used in last year's Army manoeuvres.

MESSRS. J. S. CRITCHLEY, LIMITED, is the title of a company registered with a capital of £3,000 to adopt an agreement with Mr. J. S. Critchley, and to carry on the business of makers of motor-cars.

MR. J. W. FRINGS, of 183, Stoke Road, Gosport, has a stock of both Carless's and Pratt's petrol, and charges accumulators. He has storage accommodation for a few cars, and undertakes repairs thereto.

HERE AND THERE.

THE Viscountess Galway has ordered a 20-h.p. Talbot car from the British Automobile Commercial Syndicate, Limited.

THE Taff Vale Railway Company have decided to place six motor coaches on their branch lines. Tenders are to be invited forthwith.

THE City of London Electric Lighting Co., Limited, is now undertaking the charging of batteries at its power station at Love Lane, Sumner Street, Southwark, S.E.

ON Monday next, the 18th inst., at a meeting of the Western Section of the Scottish Automobile Club, Mr. C. Jarrott is to read a paper on "Reminiscences of the Road."

THE Samson Leather Treads and Tyre Company, Limited, has been registered with a capital of £8,000 to carry on the business of manufacturers of and dealers in pneumatic and other tyres.

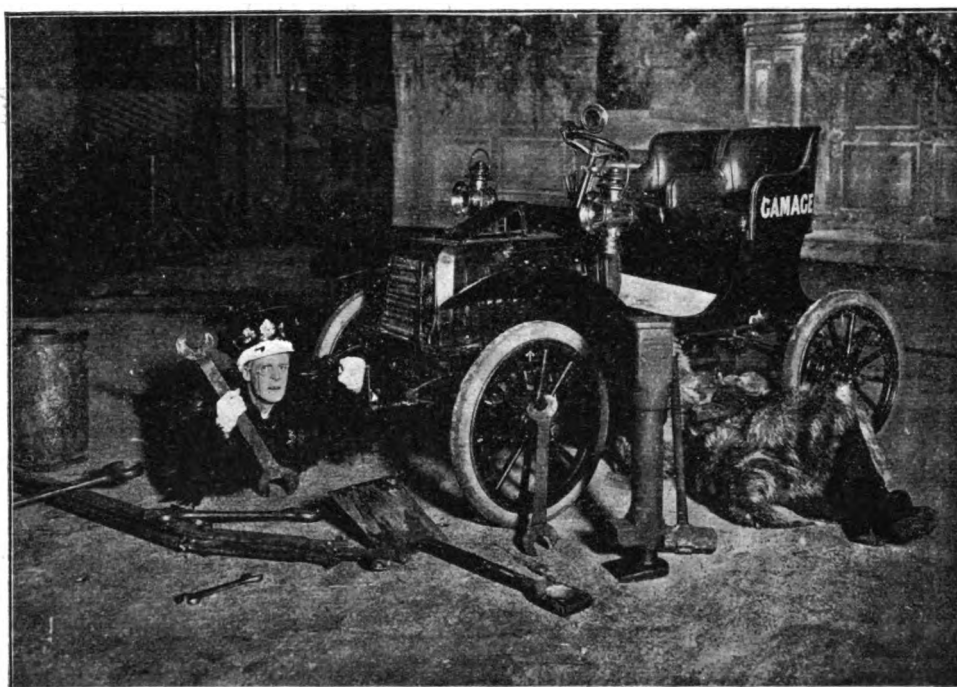
THE accompanying illustration depicts an amusing scene in the pantomime now being presented at the London Hippodrome.

COLONEL CROMPTON, R.E., is preparing a paper on "British Progress in Mechanical Road Traction"—one of a series now being arranged to be read before Chambers of Commerce and suitable institutions in the British Colonies. The Board of Trade and other Government departments are rendering assistance in the matter.

MESSRS. H. E. HALL AND COMPANY, of Tonbridge, have been appointed sole agents for Clincher-Michelin tyres throughout Kent and twenty miles round Tunbridge Wells, which extends into Sussex. They hold a large stock of these tyres, and can give immediate delivery of the standard sizes. Messrs. Hall are also about to open a new motor garage in Tunbridge Wells.

MR. J. K. BRYDGES, borough electrical engineer at Eastbourne, has asked the Town Council to relieve him of the duties of manager of the motor-bus service. Mr. John Allcock is now performing these duties, and the Town Council proposes to seek the advice of Mr. Brydges, himself a motorist, whenever technical questions arise.

THE Kidderminster Motor and Cycle Company, Limited, has



The length to which the absurdities are carried out is well depicted by the enormous spanners and other articles lying around. Needless to say, motor-cars have reached such a state of reliability that such incidents do not now occur on the roadside. Nor does the Gamage's light car depicted need the tools, for it has "come in" and "gone off" at each performance without a hitch or breakdown of any kind.

MESSRS. JAMES OGILVIE, LIMITED, has been registered with a capital of £1,500, to acquire the business carried on by Mr. J. Ogilvie, 128, Renfield Street, Glasgow, and to carry on the business of factors and manufacturers of motors and accessories.

AT the last meeting of the directors of the Notts and Midland Merchants and Traders' Association, attention was called to the number of accidents arising through drivers of drays, waggons, and heavy conveyances not keeping on their proper side of the road, particularly at night.

MESSRS. J. E. HUTTON, LIMITED, have obtained the sole agency for Brooke cars for London and district. In addition to the three-cylinder standard type and light type cars, they are putting on the market for 1904 a four-cylinder 20-h.p. car. This car will probably be exhibited at the Automobile Exhibition at the Agricultural Hall in March.

been registered with a capital of £5,000 to carry on the business of motor-car proprietors, carriers of passengers and goods, manufacturers of and dealers in motor-cars, etc. The first directors are Messrs. H. M. McAllister, T. W. Bowen, R. S. Brinton, D. S. Bowen, R. Woodward, A. S. Thursfield, and W. P. Yates, and the registered office is at Mill-street, Kidderminster.

To meet the demand for a popular-priced two-seated motor-car, Phoenix Motors, Limited, are introducing a new vehicle, which we have had an opportunity of inspecting. It is fitted with a 6-h.p. De Dion engine, three speeds forward and reverse, and cardan shaft transmission. The car, which is to be known as the "Phœbus," appears to be well built, the differential gear on the rear axle being of the spur wheel type, while the road wheels are shod with $3\frac{1}{2}$ inch tyres.

FROM Messrs. Butterworth and Company comes "The Law Relating to Motor Cars," a handbook to the Motor Car Acts and the Local Government Board Regulations, by Mr. H. Langford Lewis and Mr. W. Haldane Porter. This has a brief introduction by the Hon. Rupert Guinness, who expresses the view that the volume will prove useful to motorists, an opinion to which we readily assent. A useful index and a series of explanatory notes add to the value of the work.

MR. BROOK SHAW, of the Crescent Motor Works, Sheffield, has issued a neat calendar for the year.

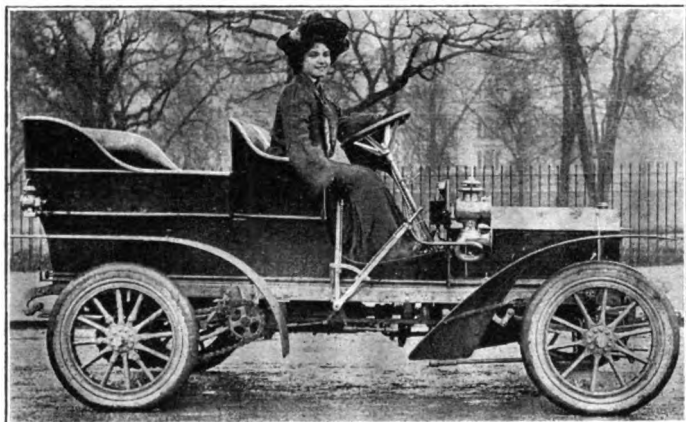
A MELBOURNE firm is stated to be building two 16-h.p. motor-coaches for a public service in Tasmania.

THE Blackpool Motor Garage is shortly to be removed from Rugby Road to larger and more central premises in Abingdon Street, Blackpool.

It is reported that the Great Western Railway Company, are considering the advisability of introducing a motor service on the Oswestry branch of their system.

THE Birmingham Aluminium Castings Company, Limited, have appointed Messrs. J. L. Carty and Company, 219, St. Vincent Street, Glasgow, their sole agents for Scotland for the sale of aluminium castings.

THE latest Brooke 12-h.p. light car, of which an illustration is given herewith, departs in a radical manner from the design of the standard Brooke car, in that the engine, which gives nearly 15-h.p., follows popular practice, occupying a position at right angles to the wheel axles and that the transmission is by means of spur wheels and bevel gear to the countershaft, and thence by chains to the driving wheels. The engine has mechanically-operated inlet valves, both inlet and exhaust valves being on the same side of the cylinders and equal in diameter. The Eisemann



high-tension magneto ignition is fitted. The frame is straight, and of pressed steel, and a Mercedes type radiator is provided. The car weighs only 14 cwt., yet the wheel base is 7 ft. 3 in. and the gauge 4 ft. 8½ in. This, combined with the exceptionally long springs, makes the running of the car over rough roads exceedingly smooth. The engine runs silently, and it is claimed to be so flexible that the car can be driven anywhere on the top speed.

THE West Midland Motor and Cycle Company, Limited, has been registered with a capital of £3,000 to adopt an agreement to acquire the business carried on at New Road, Stourbridge, as the West Midland Cycle Company, and to carry on the business of manufacturers of and dealers in motor-cars, etc.

FROM Messrs. Elliott Brothers, of Lewisham, S.E., we have received a pamphlet illustrating and describing a new combined speed indicator and odometer for use on motor-cars they have lately introduced. It is known as the "Motormeter," and indicates on the large dial the speed from five to fifty miles per hour at any moment; separate dials register the mileage on each trip and the aggregate covered by the car.

FROM the Packard Motor-car Company, of Detroit, Mich., U.S.A., we have received a catalogue of the Packard 1904 voiture legere, a vehicle which outwardly closely resembles the European type of automobile. It is equipped with a four-cylinder motor developing 22-h.p. Three speeds forward and a reverse are provided. It is claimed that the elasticity of the engine is such that the vehicle may be driven on the top direct speed at any rate from four to forty miles per hour.

THE Motor Castings Company are supplying numbers for motor-cars.

THIRTY-TWO entries are said to have been received for the races on Ormond-Daytona Beach, Florida, which are to be held at the end of the present month.

MESSRS. D. STEWART AND COMPANY (1902), Limited, London Road Iron Works, Glasgow, are taking up the construction of heavy steam wagons.

THE authorities of Schleswig-Holstein have issued a regulation that no one under the age of twenty is to be permitted to drive motor-cars in that district of Germany.

A MOTORIST has been summoned by the Wimbledon and Putney Commons Conservators for driving a motor-car along a footpath traversing a portion of Putney Heath. He was fined 10s. and costs.

A PRELIMINARY meeting of those interested in the Dublin and Swords Motor-Car Company, Limited, has been held at the Courthouse, Swords, with Mr. J. P. Cuffe, secretary, in attendance. Tenders for the cars will be invited as soon as the company has been registered.

ALTHOUGH not definitely decided, it is the general impression in automobile circles in the United States that the Automobile Club of America will hold its eliminating trials on May 1, so that the successful candidates for competition in the race would have six weeks in which to cross the ocean and make preparations for the contest. The eliminating trials will probably be held on a track, owing to the difficulty of securing speed privileges on the highway.

THE Imre Engineering Company, Limited, are bringing out an improved exhaust silencer based on entirely new and scientific principles. The device, which is the invention of Mr. Nathan Sharpe, who has recently joined the Imre Company, has been fitted to a 12-h.p. Boyer, and alongside it is fixed the silencer originally provided. Two valves control the exhaust, which can be directed into either silencer, so that the relative merits of the two forms can readily be judged.

FROM Messrs. John Child Meredith, Limited, we have received a sample of a new cam for wipe contact breakers they have just introduced; it is made of a new material which is claimed to possess many advantages over fibre, being non-absorbent and frictionless. The disadvantage with fibre is that a film of metal will form upon it, a drawback not found in the new material. The new cam is being made for various contact breakers, including one for converting the De Dion contact breaker to wipe pattern.

MESSRS. DENNIS BROTHERS, LIMITED, have sent us a few particulars of their 1904 models, chief among which will be a 20-h.p. four-cylinder car, the engine of which will be provided with mechanically-actuated inlet valves. The new details include a special type of worm gearing at the rear axle instead of bevel gear, new change speed gear box with the secondary shaft not revolving, and with direct drive on the top speed; encased brake drums; road wheels with double artillery spokes, pressed steel frame with the bottom encased, and phaeton bodies with side entrance.

MESSRS. PETO AND RADFORD have recently introduced a new terminal cap and connection for use on accumulators to prevent corrosion of the terminals. The cap consists of a thimble-shaped bonnet of vulcanite, through which the end of a short piece of flexible wire is passed. This end is solidly attached to a brass block, which is pressed into the end of the cap. This is drilled and tapped with a suitable thread to engage a screw stud provided on the end of the metal pillar to which the positive and negative plates of the accumulator respectively are attached. In order to ensure an acid-tight joint to the cell, rubber blocks are placed around the terminals where they pass through the top of the accumulator case. The end of the short flexible wire is provided with a pipe terminal, to which the ends of the low tension wire are attached in the ordinary way.

CORRESPONDENCE.

BENZ v. LIGHT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have had such great success with a 3½-h.p. Benz car, and have rendered various assistance to users of these cars when on the road, that I thought perhaps some of my experiences might be of service to those of your correspondents who have trouble with their cars of similar make. I have had mine nearly four years, have travelled many thousands of miles, taken extensive trips, such as London to Blackpool, but have experienced none of the troubles of which your correspondents complain, my worst trouble having been to repair a band that got broken.

Soon after I purchased my car (new), I found that the cam operating the exhaust was not of the best form to obtain the maximum power, so I fitted a brass band around it in such a manner as to slightly broaden the sides of the exhaust cam, so that the valve opened a little earlier and remained open longer than hitherto. I also found the trouble spoken of by "Amateur" with the second band dragging on the fast pulley when it was supposed to be on the loose pulley only. This I rectified by crossing the band in the opposite direction, doing away entirely with the troublesome handle-starting arrangement, and extending the length of the engine shaft pulley by turning and fitting thereto a piece of hard wood.

I was once ascending a hill on second gear when I came across a stranded Benz car; I stopped to see if I could render assistance, when its owner informed me that as he was going on the crypto when the engine suddenly stopped, and that he could only with great difficulty turn the flywheel round, he presumed the piston had jammed in the cylinder. Investigation, however, proved that although his first band was turned to off, it was in reality a little on. This was found to be caused by an accumulation of grease and dirt upon the loose pulley, which prevented the band from sliding on to it; it would not mount the ridge of dirt that was collected. After suggesting to clean all this filth off with petrol, matters were at once remedied, for it was the first band dragging on its fast pulley that was the cause of the engine stopping when the crypto was at work.

"Amateur's" suggestion of using the second band slightly on in addition to the first when descending hills is not a wise one. In his careful handling it may be all very well, but it is apt to end one of those days in a broken band. If the hill is only an ordinary one, the foot brake with first band on and throttle shut should be sufficient; if the hill, however, be too steep, then it is wiser to descend on the second band.

"Amateur" is, I venture to say, mistaken when he asserts that after he refilled his crypto box or drum with lubricant this prevented the front of car lifting up when the crypto was put on. This lifting up is caused by the crypto being put on too quickly, for the moment the band encircling the crypto drum stops its revolving, tremendous power is suddenly applied, thus giving such a pull on the top of the chain that the front of the car is lifted before the vehicle itself has time to move forward. If this band be lubricated, it permits of a little slipping as it is being clamped, and the front will not then lift up. Oil applied to this answers but for a short space of time, after which it only adds to the trouble—blacklead is the most lasting. Personally I adjust my crypto lever so that it will not quite pull right up, and always keep the lever tight by pressing it upwards with the left hand, and never use it fixed.

Some cars I have seen make a great deal of clattering noise; to obviate this, users should see that the bearing at crank is kept sufficiently tight. This is easily done, but at the other end of the crank rod and inside the piston there is another bearing which is capable of making a great noise when even a little slack, and unless the mode of tightening this were explained to the user, he might fumble about for a long time before finding out how to set to work, for, strange to say, the book of instructions issued with these cars is silent upon this point. When the piston is out to its furthest, insert the band so as to grip the bearing inside the cylinder, and move the flywheel slightly, when any shake will at once be apparent, and should there be any, matters should be remedied. On the under side of this bearing a nut will be seen; this acts the part of a lock nut, and must be slackened a little. On the upper part what may appear to be another nut will be seen; this, however, is the head of a screw bolt. When this bolt is screwed down further, it pulls the wedge-shaped bearing upwards, thus bringing the two parts of the bearing closer together. When sufficiently tight, still keep the spanner on the bolt to prevent its moving, and at the same time tighten the under lock nut.

As regards the mechanical inlet valve, this is more trouble than it is worth. See that the inlet valve spindle is always quite free, and there will be no trouble on that score. The chief difficulty with respect to want of power may be looked for in connection with exhaust valve arrangements; those who are troubled in this way should ascertain if there is any play between the cam and the little wheel that surmounts it. If there is, this must be taken up. A simple and ready means of doing so is to give the rod connecting the wheel arrangement with the valve a smart blow with the hammer (do not be afraid, it will not break) so as to bend it a little until the play between the wheel and the lowest part of the cam is not more than one-sixteenth of an inch. I have known instances where after repeated grinding of the exhaust valve, the stem has been rendered so long that it touches the lifter before

it can seat itself. If a little be ground off the end of this stem matters will be righted.

If users will make sure that their valves are free, properly ground, are capable of seating themselves, and that the exhaust opens in proper time, there is no occasion to resort to plates fixed inside of cylinder or to boring out for larger valves, as suggested by Mr. Brydges. If everything is in proper order the small Benz car will travel along practically without noise, will do fair rises on top gear, and the user can rely on getting back without a hitch when once he starts on a journey.

In the case of my car, I made sides extending from the dashboard, and from these sides secured doors to the body of the car; thus I have practically two lockers, each of which will hold a Pratt's motor-spirit can set on its side, and on top of this locker I mount a cylindrical petrol container. In practice, however, I generally use these lockers for holding odds and ends. From the top edge of this locker a waterproof apron hooks up around the occupants of front seat, and with a detachable hood and a portmanteau on the back seat, one has a comfortable car with which two people can take a trip to (say) Edinburgh and back without fear of spending the night in the open air, through breakdowns.

I omitted to mention about the springs—these cars are improved by stronger back springs. This I had done soon after buying the car, and from London often take a fifty-mile trip with four people of a total weight of forty stone, and with this load can easily ascend such hills as Barnet Hill on second gear (or band).

From Mr. C. A. Palmer's fear about the lamp at back of car, I would be inclined to think that his car was one of those in which the petrol was contained in the right hand side tank, and water in the left, only. If this be so, he will find it advantageous to connect a small piece of tubing to the air valve on the top of his tank and conduct it forward and to the open air somewhere close under the seat at the side of the car.

The number difficulty with cars containing a foot-board and back seat can be solved as follows:—Hinge the number to the foot-board so that when the board is fastened up (as when not in use) the number plate will hang flat against it, whereas when it is down the hinge enables the number-board to hang in a vertical position. There must, of course, be two eyes, to suit either position, in which to hook the lamp. This is the manner I adopt, and find it all that can be desired. I may add that I have ridden in many cars, but for steady progress, reliability, etc., I still stick to my small Benz car. True, it may not be the fashionable shape just now, but with wired-on solid tyres, and easy springs, it gets "there and back" as soon as the majority of cars.—Yours truly,

J. HAY TAYLOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The following account of how I fitted a compression plate to my 3½-h.p. Benz may be of interest to users of this useful little car.

Remove the cylinder head, take the valve away, get a local engineer to make an iron plate, ½ in. thick by 4-3-8 in. diameter, screw a pin into the centre, turn the pin up large enough to fit through the hole in the centre of cylinder head, and pass it through. Cut a plate, 3-8 in. thick, drill three holes, the centre one for the pin, the other two to fit over the studs of the old valve plate; cut a thread on the end of the pin, and screw up with two nuts. An asbestos packing, painted each side with blacklead and oil, should be placed between the new compression plate and the old face of the cylinder head to make a tight gas joint. As a safeguard against the compression plate getting loose, I had a small hole drilled through it and ¼ inch into cylinder head, but not through; a pin is fixed tightly in the hole in the compression plate, but drops easily into the other; this ensures any possibility of the plate turning round.—Yours truly,

THOMAS H. BUSH.



The above illustration is a reproduction from the artistic cover of the German Company's Catalogue. It depicts a German Car in Holland surrounded by a number of interested natives.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the correspondence anent the Benz in the *Journal*, how can one expect a 3½-h.p. car to climb hills, no matter how good condition it may be in? I have, myself, used a 4½-h.p. car for eighteen months, but found it impossible to climb hills at anything like a decent speed; the weight of the car is too much for the h.p. We have a 3½-h.p. Benz in town in first-class condition, but it simply will not climb a hill; the weight is about 9 or 10 cwt. No small improvements in the world will alter it. I have now an 8-h.p. Darracq, which takes three or four of us at a good speed up hills where my small 4½-h.p. used to jib—when I say jib, that is I mean it crawled up at about six miles per hour. The only cure is to get rid of a 3½-h.p. Benz, and buy a light car with a 5 or 6-h.p. engine.—Your truly,

B. WILKINSON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with interest the letters on this subject. Two years ago I had a 9-h.p. Benz car, and experienced the difficulty of driving the car at a decent speed up hill. I got over the trouble by making the second and top speed pulleys on the countershaft a larger diameter by having a bent wood ring ½-inch thick fixed to the pulleys. I should like to have had an inch ring fitted, which would have made the pulleys two inches larger, but there was not room. The difference in going up hills was simply marvellous, for where I formerly had to drop down to the second speed I could go up on top, and where I used to drop down to the crypto I could drive on the second. It is not difficult to take out the countershaft and fix on wood bands by drilling and tapping pulleys, using ½ inch Whitworth screws slightly riveted over to prevent unscrewing. With valves well ground in and the spring on induction valve not too strong these 3½-h.p. Benz cars ought to satisfy their owners. If the car has been in use some time, the cylinder has no doubt got very much furred up with deposit from hard water. This can be cleared out with spirits of salts. To do this the water pipes from top and bottom of cylinder should be disconnected, the bottom of cylinder closed with a cork, and the acid in strength of one part acid to four of water poured in at top. When acid is quite destroyed, run out at bottom and proceed again until cylinder is quite clean, then wash out with clean water. Of course when this job is done the engine will run a little quicker on level roads, but that will not do any harm.—Yours truly,

R. F. LANE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Permit me to preface my remarks by stating that I am a motorist of about six years' standing, that I am in no way whatever connected with the motor or tyre trades. The correspondence re Benz car brings to my mind the letters that were written in your *Journal* and one of your contemporaries some five years ago. Then it was my misfortune to possess a 3½-h.p. Benz Ideal, and I shall never forget the anguish of mind and the money that car cost me to replace careless, bad workmanship, and to make good glaring defects to enable me to get any real use out of the car.

I am surprised that anyone, when there are really nice reliable English-built cars on the market, should ever dream of buying what I found to be such an accumulation of worry, annoyance and expense as the Benz Ideal—but there! in my tyro days I actually believed advertisements and agents' fairy tales, only to learn, when too late, that "Things are not what they seem."

It may be of some practical use to inform your correspondents that in order to maintain good compression in my Benz cylinder, I had to have:—All the valve seatings on valves and valve box refaced in the lathe, all the joints of cylinder head refaced, exhaust valve stem shortened by 1-82 in., and always, after grinding in the exhaust valve, I was compelled to file away a little of the end of the valve stem and nut. I may further add that I spent fully £70 on my Benz ere it was any good at all, and after a few months' further partial use—by the way, it either carried me or I and my man pushed it along; very good exercise, but rather tiresome and provocative of much bad language—I joyfully sold it for half what it cost me. I would strongly advise your correspondents to sell as soon as possible and then buy a real motor-car, English built.—Yours truly,

MEDICUS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some nine months ago I purchased a second-hand 3½-h.p. Benz car, and since first getting it into good order I have had none but the most trifling hitches with it. It is always ready to go anywhere. It is a particularly comfortable machine to ride in, in spite of solid tyres, and will climb any hill I have met with. Its faults are, slow at hills and excessive consumption of petrol and water. At this time of the year, with heavy roads, I can only get about twenty miles out of a gallon of petrol; the water boils away and makes a lot of steam when running on second speed or crypto. I appear to be getting quite as much power as some other correspondents. The car will take slight inclines on the top speed with three up when the roads are good. It will go anywhere and average as much as a good pony, and, of course, a great deal more in the long run. I have often gone seventy or eighty miles without stopping the engine, and then only stopped because the destination was

reached. The expense and trouble of upkeep is only a fraction of that of keeping a pony and trap.

As to back number, the County Council made no objection to its being placed at back of seat, right hand side, high up; it is conspicuous enough there, and easily and safely lighted by a little bicycle lamp showing white light in front and red behind, placed some nine inches more to the rear, and somewhat lower; this is a cheap and satisfactory arrangement. Apart from danger of lamp low down at back, it would have to be removed when letting down footboard for third passenger. My advice to anyone going in for one of these machines is—do not have one at any price without the crypto gear, or with the early weak back axle. I think anyone not wanting to spend more than about £45, and not caring for speed, will get, as I have done, much pleasure and satisfaction out of a good 3½ Benz.—Yours truly,

A.R.15.

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the correspondence on this subject, I for one would not use any other after my experience of pneumatics. I would sooner give up motoring altogether than return to pneumatics. I had my Benz shod with Connolly's; they answered splendidly. My 5-h.p. Wolseley was shod with the same make of solids. My present 7½-h.p. Wolseley is shod with Falconnet solids. I used my 5-h.p. Wolseley in a large county practice during the winter months, over wretched roads. The tyres never caused a moment's anxiety, and my car was so strongly built and so beautifully sprung that I have averaged twenty miles comfortably and only experienced jolting over very rutty and stony rounds.

I am now using my 7½-h.p. Wolseley in a London suburban practice, and find that for every practicable purpose solid tyres answer every requirement. Given a really good reliable car carefully thought out in every detail, well built and beautifully sprung, like the Wolseley, and I am certain that any motorist who is contented with twenty miles an hour would never trouble about pneumatics after trying such a car, fitted with good solid tyres.

In conclusion, I would strongly recommend the makers of the Wolseley Car at the next 1,000 miles reliability trials to endeavour to enter cars that will really require frequent adjustments during the trial, cars incapable of making absolutely non-stop runs, that at the end of the trial will require replacements. Then they may be able to carry off the gold medal by satisfying the experts; but whether their cars will then appeal so forcibly to the man in the street, who actually requires an honestly built, absolutely reliable car, is another matter.—Yours truly,

MEDICUS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—First let me state that I am not interested to the extent of one halfpenny in either pneumatic or solid tyres. Secondly, I have, after nine months of expense and worry with Clipper Continentals, discarded pneumatics on the driving wheels of my 7½-h.p. Wolseley in favour of 2½ in. Royal Buffer solids. I believe there is no better pneumatic tyre on the market than the Continental, and mine were of ample section. I say emphatically that I shall never go back to pneumatic tyres on my driving wheels, whatever cars I may own in future. My car is geared to a top speed of about 25 miles per hour, and neither in this nor in climbing power is there the slightest difference. In the tonneau, at high speeds, there is certainly rather more vibration, but not much. It seems to me that we men of moderate means should insist on having cars strong enough and with long enough springs to run on solid tyres, at least on the driving wheels. I am convinced that the cheap and reliable solid tyre will be universally used in a short time on the ordinary car, in which reliability is so absolutely essential, and excessive speed unnecessary.—Yours truly,

SOLID SATISFACTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to your correspondent, I think he would find Falconnet solid tyres to give him the best result on his back wheels. I have run a 10-h.p. Wolseley for a year now with these tyres behind and have never had the least bother with tyres, axles, or engines. He should not go over 20 m.p.h. with solids behind. If one does, I find it cracks the paint round the spokes of the back and wheels. Up to 20 m.p.h. I don't think you find much difference as to comfort, but if over this speed on bad roads, such as in my district, it becomes rough and pneumatics are best. I have done close on 4,000 miles and the tyres wear well.—Yours truly,

P.

THE MOTOR CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The new Motor Act is vexatious, unnecessary, and detrimental to the advancement of the trade, and is annoying enough to turn waverers from purchasing cars. Living on the high road, I see cars pass constantly to and from West Somerset, Devon, and Cornwall, but I have never heard of a single complaint of fast driving or ungentle-

manly conduct in this district, nor am I aware of one instance of a motor case being before the local magistrates for four years, during which time I have been interested in motoring.

This is more noteworthy when it is known that there are fifteen to twenty privately owned cars in the town of Bridgewater, and during the summer and autumn twenty to thirty, and often many more, touring cars, pass daily.

The local authorities, horse-owners, and country folk have been most kindly disposed towards motorists, but their carriages *only* having been branded with a number (implying danger and recklessness), will, I fear, result in the growing feeling of confidence in this docile, harmless, and faithful vehicle being severely checked, necessitating a deal of motor education being gone over again.

To test the new tail lamp on rear number the writer drove 42 miles on New Year's Eve—roads dry but not dusty—results—lamp and number almost obscured with dust, although there was none apparently on the road. What may we expect in the dry future?—Yours truly,

E. W. HILL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think that the restrictions will disappear, if all reasonable care is used by drivers. Quiet compliance with the terms of the Act will do more than any outcry or endeavour to evade its provisions. But it still remains for all motorists to use their best endeavours to see that the parliamentary representatives in each constituency pledge themselves to see justice done in all future legislation, and to use their best endeavours to do away with absurd regulations on the part of local authorities. If all motorists work together with this end in view there will be little to trouble us.—Yours truly,

LAURENCE MILES.

LIGHT CAR EXPERIENCES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some little time back I purchased a 9-h.p. Prosper-Lambert car, and, after running the vehicle for some time now, using it every day, I have had absolutely no trouble at all; in fact, for the first 500 miles I never noticed even a misfire, and my only trouble has been with an extra accumulator I got with the car. I must say I have been agreeably surprised with the result, as all my friends were absolutely certain that the car was too cheap to be good. It is an excellent hill climber, and I have done several good runs on the car with five up. I should like to hear from some other owner of a Prosper-Lambert car through the medium of your columns.—Yours truly,

A. L. WALTERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Enquirer's" letter in the *Journal* for the 2nd inst., I purchased one of the early Speedwell light cars, and so far it has given me every satisfaction and appears to be a thoroughly well-built and durable little vehicle. When supplied it had the old form of ignition and of course I had some trouble to start the engine at times and the usual misfires. I then had the new system of ignition with trembler coil fitted, and could wish for nothing better.—Yours truly,

"SCORPION."

MOTOR TYRE QUERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I venture to ask if you, or some of your readers, will give me information on the following matters:—(1) Is the Martin tyre suitable for a belt-driven voiturette, with 5½-h.p. vertical engine running 700 revolutions top speed, to 1,400 on slowest? It is very expensive; is it worth the extra cost? What are its advantages and disadvantages, if any, and with fair wear, averaging say twelve miles an hour, how long is it likely to last in mileage? Do cuts and punctures materially shorten its life, and is it easy to repair?

The recent correspondence about solids *versus* pneumatics has been interesting but absolutely useless as a guide to make a choice. Would solids suit a voiturette as described in Question 1, at any rate on rear wheels, and with Martins on front ones? Would this be a successful combination, and would it make any perceptible difference in case of hill climbing compared with other pneumatics.

What are all the possible causes of "knocking" in a motor-car engine, and how is the noise produced?—Yours truly,

VOITURETTE.

SIX-CYLINDER ENGINES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of December 12th I noticed the very thing I was looking for, "The Firing of a Six-Cylinder Motor." There is one thing I should like, if you would, made clear—from which end are the cylinders numbered, radiator or dashboard end? I believe the cylinders are numbered from the radiator end in the Napier, and from the dashboard end in the Darracq, but I cannot say which is the general way. Perhaps you

can enlighten me. I think from your explanation that everything else was clear; cylinders 1, 2, 3 (firing in the order named) in the first revolution and cylinders 4, 5, 6 in the second revolution.—Yours truly,

ENQUIRER.

[In answer to "Enquirer," the engine may be numbered either from the dashboard end or from the radiator, according to the setting of the valves. The most usual practice is to number from the radiator. A six-cylinder may also be fired 1, 3, 5 on the first revolution, and 2, 4, 6 on the second. The firing of a Darracq from the radiator is 1, 3, 4, 2, and in the Napier 1, 3, 2, 4.]

A SCHOOL OF AUTOMOBILE ENGINEERING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Under separate cover, I have the pleasure to send you a copy of our automobile school prospectus, also outline of the shop course in steam cars. In view of the great interest expressed by the American journals in this school, I take pleasure in giving you a brief synopsis of the work we are undertaking. It is interesting to note that the Young Men's Christian Associations of America, with thousands of branches in every town and city throughout the Republic, is conducting the most extensive and systematic evening school work in the United States, and that Boston has the honour to have the largest school of the kind. We have 119 courses, 100 instructors, lecturers and assistants, and shall register the present year between twelve and fourteen hundred individuals, almost wholly pursuing technical lines. In accordance with our aggressive policy of being of the greatest possible help, we established a school of automobile engineering—the present year, for the benefit of prospective owners, mechanics, draughtsmen, inventors, and those who desire to study the subject as a science. The lecture and draughting courses are given in our own building; the shop and laboratory work and demonstrations being conducted in the great automobile station No. 1—the largest in America.

The work is outlined under several courses, as follows:—(1) A series of lectures by leading engineers, fully illustrated by lantern slides, blue-prints, tracings, and parts of cars. (2) A draughting course of 200 hours, giving complete instruction in the development of the details and assembly of a two-seated petrol car. (3) A shop or laboratory course two evenings per week at the Auto Station, where a course illustrated by blackboard, parts of car, tracings, and blue-prints is given; followed each evening by a demonstration on the floor of the garage, the cars being jacked up and run with the mechanism exposed before small groups of students. On each Saturday evening a "quiz" is held in the Association building by the one who delivered the first lecture, reviewing thoroughly all the work of the week. The students are provided with an outline for the shop courses, and as each subject is taken up and thoroughly discussed, it is checked upon the outline, and the Saturday night "quiz" is based upon this checking.

Written work is required of the students, with rough freehand sketches of the boilers, engines, and other parts of the car, and a written thesis is to be required from the students on the completion of each type of car, which will count towards his graduation from the school. A text-book has been prescribed for definite reading, and students are examined upon this part of the work. Arrangements have also been made for road lessons for those who desire the absolute road experience. Students completing the course in this school, passing the examination and having direct experience on the road, will be given a certificate by the Advisory Board, which consists of the president of our leading automobile club and representatives of the larger manufacturing concerns.

The School of Automobile Engineering is in its scope, we believe, the most extensive of the kind that has ever been established. It certainly is the first school of its kind in America, and is being largely attended. Nearly 200 persons are enrolled, representing the society and moneyed classes and the machinists, and others who wish to become mechanics. Being a new work, we have had no data to guide us, or experience of others, but have been obliged to thresh out the problems as they presented themselves, and thus far we have done so with success. We feel that with the growing development of the automobile industry the school will be sustained, and I am pleased to say that we have received the cordial support of all the manufacturers, dealers, and publications, and the lectures are being printed in some instances in full.—Yours truly,

FRANK P. SPEARE.

Educational Director Young Men's
Christian Association.

Boston, U.S.A., December 2nd, 1903.

DRY BATTERIES AND ACCUMULATORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Among the features that I noticed during the course of a brief visit to the recent Salon in Paris was a slight tendency to return to the use of dry primary batteries in place of accumulators. Personally I believe this is a step in the right direction; the cost may be slightly more, but, on the other hand, all the troubles connected with the recharging of accumulators, the internal short circuits, buckled plates, etc., are avoided. To my mind, too, one of the great advantages is, that it is possible to use three, or even four cells in series, and so obtain either about 4½ or 6 volts respectively. I firmly believe that many of the ignition troubles one hears

about are due to the fact that a pressure of 4 volts is insufficient for reliable ignition. Although I am thus inclined to adopt dry batteries in place of accumulators, I should like, if possible, to hear the opinion of any motorist using the same.—Yours truly,

J. F. FOX.

BAND BRAKES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A new leather for brakes and clutches was recently brought under my notice, for which special qualities of resistance to friction and the effects of oil was claimed, and of which I have heard good reports. I am not aware if it is yet on the market, but could put "X" in communication with the makers, if he cares to write to me, c.o. *Motor-Car Journal*.—Yours truly,

R. W. B.

THE REPAIR OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The scarcity of competent repairers and the high-handed methods of some of the firms engaged in the business still remain one of the rocks in the path of the average motorist. In regard to charges, motorists must, of course, remember that if they require repairs in some out-of-the-way place, and these require special facilities and equipment, they can hardly expect to have them made at the same figure as in a large

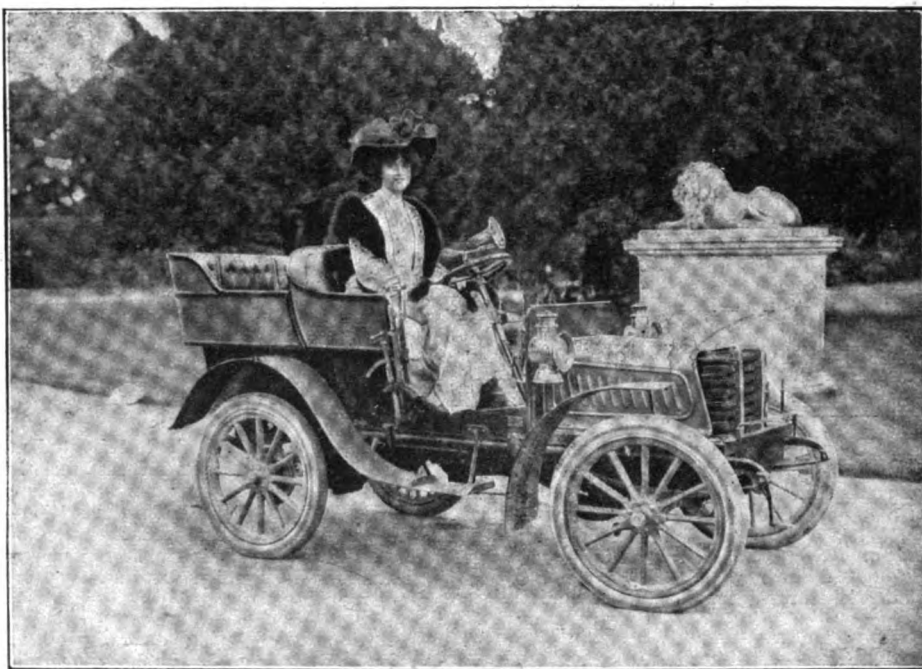
carburettor. I am sure it would interest many of your readers to know the experience of those who have used the carburettor in question, as the price of paraffin is so much less than petrol that it must be a great advantage from a financial point of view to run a car on the former, providing the result is satisfactory.—Yours truly,

G. MABER.

HOW MANY CYLINDERS?

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The question, "How many cylinders?" is one of the great questions of automobilism, which, like the main questions of politics, are always with us. The new cars for the 1904 season which have so far been announced include several additions to the three-cylinder variety, while engines with six cylinders are making their appearance. Three-cylinder construction undoubtedly represents very good engineering practice: a three-cylinder vertical motor is far better balanced than a two-cylinder one, and it requires a much smaller flywheel. As regards balancing, the three-cylinder is about equal to the horizontal engine having two opposed cylinders. The latter type seems quite a favourite at present for light cars in America, but for heavy cars the total length is necessarily great and the engine somewhat inconvenient to place. The three-cylinder engine is inferior to the four-cylinder in all the good qualities which are sought by multiplying cylinders—viz., mechanical balance, constancy of torque, etc. The difference is slight, however, and as the simplification of one less cylinder is a consideration, it is not unlikely that some of the builders



Miss Jessie Brown, a well-known Singer, on her 10-h.p. Decauville Car

repairing establishment in a centre where there is a continuous run of business. While these conditions justify an advance on the usual rates, there is certainly a limit to the charge which can reasonably be made for any given service, and there is nothing more detestable than taking advantage of the tourist's predicament to fleece him. If automobilists in the same community or members of clubs would inform each other of their experiences with different repair firms, or at least make known through your columns the concerns which can be relied upon not only to do repairs properly, but at a reasonable charge, they would, I am sure, be doing a service to more of your readers than—Yours truly,

L. W. R.

IS THIS OBSTRUCTION?

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Suppose I was travelling on a motor-car going at ten miles an hour, and an electric tramcar came along, nearly overtaking me. Should I be bound to make way for the car? If I did not, could I be proceeded against for obstruction?—Yours truly,

H. E. F.

EXPERIENCE WITH PARAFFIN CARBURETTOR WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I saw advertised a carburettor for using either petrol or paraffin for driving motor-cars. The makers claim for it that any make of petrol car can be driven with paraffin if fitted with the "Trusty"

of four-cylinder cars will eventually change over to three.* As to the six-cylinder idea, I am inclined to the opinion that the manufacturers who have embodied it in their new models were actuated more by a desire to have some conspicuously exclusive feature in their design than by a view to actual improvement. I do not deny that a six-cylinder engine gives a more steady torque and better balance than one with four cylinders, but the difference must be so infinitesimal as to afford no compensation for the added complication.—Yours truly,

G. F. BARKER.

PETROL.—"Careful" writes:—"Several new brands of petroleum spirit have lately been introduced, notably one by a Bristol firm and one by a concern at Manchester. Will any motorists who may have used either of these kindly oblige with their experience of the same?"

D. H. writes:—"I should esteem it a favour if any of your readers can give me some information through your columns as to 'Spyker Cars'—simplicity, reliability, speed, silence."

AUTOMOBILE EVENING CLASSES.—Mr. Colin Defries, who asks for particulars of evening classes in connection with motor-cars, is recommended to write to the Principal of Battersea Polytechnic, Battersea, S.W.

"L." writes:—"I am about purchasing an Argyll car, and should like to have the experience of any of your readers who may be users of this particular make."

ALUMINIUM FORE-CARRIAGE BODIES.—In reply to C.J.'s request in last week's *Journal*, Messrs. J. Rothschild et Fils, Limited, 45, Horseferry Road, Westminster, S.W., inform us they are able to build the aluminium fore-carriages he requires.

OUR DIRECTORY OF "NUMBERS."

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BELOW we publish the first instalment of our Directory of Numbers, which will be continued in subsequent issues until we have given a comprehensive list of motorists throughout the United Kingdom. The present selection goes no further than the letter N; when we have completed the alphabetical order a second list will be prepared commencing again with owners whose names begin with A. Those who have not yet sent their names and numbers are invited to do so without further delay.

Alderson, G. A., Park Road, Northampton ...	B.D.	9
Alpine, T. U. U., Balloughton House, Bannow, co. Wexford ...	M.I.	12
Agello, L. R., 10, Albert Road, Gloucester Gate, N.W. ...	A.	652
Aliney, Edwin, Stonton, Lockerby Road, Liverpool ...	K.	17
Bamford, O., Uttoxeter ...	E.	105
Beale, J., Uttoxeter ...	E.	50
Bentley, J., Wilmington, Kent ...	D.	345
Bruce, W. A., 116-120, Golden Lane, E.C. ...	A.	83
Bulteels, J. G., Sefton Park, Slough ...	B.H.	128
Bush, T. H., Oak House, Greenhithe ...	D.	38
Blake, F. C., 24, St. John's Road, Richmond ...	P.	465
Blair, Dr. W., Abbey Green, Jedburgh ...	K.S.	1
Britain, A., 28, Lambton Road, Hornsey Rise, N. ...	A.	777
Baker, J. Allen, L.C.C., Spring Gardens, S.W. ...	A.	3
Beyers, Counsellor E. A., Mayor of Oxford ...	B.W.	1
Bedford, The Duke of ...	B.M.	1
Briggs, A. C. (Lord Mayor of Leeds) ...	U.I.	1
Berrington, A. J.P., D.L., Berkswell, Bournemouth West ...	E.L.	3
Benn, Harrison, Oakleigh, Clayton, Bradford, York ...	T.	144
Bingley, T. H., Whitley Hall, Greenside, near Sheffield ...	C.	146
Boswell, Bt., Sir G. Houston, Blackadder, Edrom, Berwick ...	S.H.	1
Baines, Robert, 41, Chester Road, New Ferry, Cheshire ...	C.M.	15
Blakely, John, Merkleland, Kirkintilloch, N.B. ...	S.N.	13
Breeze, John L., Woodleigh, Harrow ...	H.	26
Barrow, H. E., The Chestnuts, Knighton Drive, Leicester ...	B.C.	55
Barnato, Harry ...	A.	1799
Brownlow, the Earl, Berkhamsted ...	A.R.	1
Bayley, Percy, Beacon Hill, Brede, Sussex ...	A.P.	45
Barber, James, Sheffield ...	A.P.	20
Brooke, F. W. J., 48, Cork Road, Keighley ...	W.	10
	W.	11
	C.	117
Cottenham, Earl, Uttoxeter ...	E.	89
Cordingley, Charles, 39-40, Shoe Lane, E.C. ...	A.	21
Crippin, E. R., Wigau ...	E.K.	1
Cornwall, W., 441, Fore Street, Lower Edmonton, N. ...	A.	182
Caudwell, Dr. E., 8, Battersea Rise, S.W. ...	A.	987
Clayton, J. J., Victoria Villa, Mosborough, Sheffield ...	R.	103
Cousins, H., Rose Leigh, Narborough Road, Leicester ...	B.C.	25
Crossman, T., 40, Coldhurst Street, Oldham ...	B.U.	1
Clark, Dr. W. Inglis, Rosedean, Lander Road, Edinburgh ...	S.	2
Chamberlain, Harold, Yarmouth ...	E.X.	1
Carthew, Major R. J., J.P., C.C. ...	B.J.	1
Carr, E., Langroyd, Colne, Lancs. ...	B.	124
Corn, Edmund R., Armitage, near Rugeley, Staffs. ...	E.	58
Calvert, W., Motor Works, Sheffield ...	B.T.	68
Coupe, E. F., Sheffield ...	W.	91
	W.	92
Cawood, F. B., Sheffield ...	W.	38
Dickinson, W. H., L.C.C., Spring Gardens, S.W. ...	A.	7
Drake, H. L., Sutton, Isle of Ely ...	E.B.	17
Dean, J. B., Chitterne, Codford, Wilts. ...	A.M.	74
Drysdale, J. W. W., 3, Whittingshame Gardens, Glasgow ...	G.	22
Dunlop, Robert, Chichester Park House, Belfast ...	O.I.	50
Dunn, W., College Road, Newcastle-on-Tyne ...	B.B.	1
Dickson-Poynder, Sir J., L.C.C., Spring Gardens, S.W. ...	A.	6
Davies, G. C., Town Close, Norwich ...	A.H.	1
Denny, Walter, Imberdene, Esher, Surrey ...	P.	124
Egerton, Maurice, Rosthern Manor, Knutsford ...	M.	1
Eastcott, H., Endsleigh, Gateshead ...	C.N.	1
Eccles, Dr. H. A., 104, Church Road, Upper Norwood ...	B.Y.	47
	B.Y.	48
Ellis, Dr. Geo., Grove Place, Drake Street, Rochdale ...	D.K.	5
Evans, Gwilym, Llanelly ...	B.X.	1
Entwistle, W. A., Moor House, Mirfield, Yorks ...	C.	24
France, G. H., Toller Lane, Bradford ...	A.K.	13
Fisher, James, J.P., Barrow ...	E.O.	1
Foster, Alderman T. Scott, J.P., St. Helen's Parade ...	B.K.	1
Southsea ...	B.K.	2
Fox, Marmaduke, Polbae, Wigtown ...	O.S.	1
Fernald, Dr. H. P., Clarence House, Cheltenham ...	A.D.	1

Foster, Capt. W. H., Woodcote Hall, Newport, Salop ...	A.W.	1
Floyd, Dr. T. S., J.P., 16, Devonshire Road, Birkenhead ...	C.M.	1
Feddon, S. E., 305, Fulwood Road, Sheffield ...	W.	1
Fenn, Augustus, Westbourne, Strensham Hill, Birmingham ...	O.	89
Farrer, J. A., 689, Abbeydale Road, Sheffield ...	W.	86
Fentiman, A. G., Westwood, Grove Crescent, Kingston ...	P.	110
Fippard, C., Oakwood Road, Horley, Surrey ...	P.	252
Fryer, James, Kington, Herefordshire ...	C.J.	30
Flanders, Fred, 11, Regent Road, Great Yarmouth ...	E.X.	7
Fedden, S. E., Sheffield ...	W.	1
Geodden, Col. J. R. P., Compton House, Sherborne ...	B.F.	1
Greenhough, W. H., Alexandra Road, Reading ...	D.P.	1
Girvan, W. J., Laune View, Killorglin, co. Kerry ...	I.N.	1
Grieve, J., Turrit, Aberdeenshire ...	S.A.	2
Gill, Robert, London Road, Harleston, Norfolk ...	A.H.	93
Groom, Harry, 12, North Brink, Wisbech, Isle of Ely ...	E.B.	14
Griffin, John, 38, Princes of Wales' Road, Norwich ...	C.L.	29
Goodman, S. W., Fenny Stratford, Bucks ...	B.H.	2
Greenfield, William A., Newton, Winchburgh ...	S.X.	14
Gibson, J., Oxford House, Hebden Bridge ...	C.	315
Griffiths, Capt. J. E., Henle, Llangollen ...	C.A.	9
Giles, L. J., Briardene, Wiltie Gardens, Folkestone ...	D.	95
Gaunt, J., 2, Chapel Street, Melton Mowbray ...	A.Y.	29
Gosling, George, High Street, Lamborne, Berks ...	A.Y.	27
Goad, F. W., 14, Prior Park Buildings, Bath ...	B.L.	94
	F.B.	29
Hardman, J., The Grove, Waterloo, Liverpool ...	B.	114
Hodgson, J., Uttoxeter ...	E.	44
Hay, Sir Duncan E., Bart., King's Meadows, Peebles ...	D.S.	1
Howell, F. G., Oaksend, Oxshott ...	P.	1
Hawkes, H. G., Eaton Lodge, Warwick Place, Leamington ...	A.C.	1
Hewetson, H., 5, Bryanston Street, Portman Square, W. ...	A.	324
Hubbard, J. T., 101, Trafalgar Road, East Greenwich ...	A.	490
Heywood, W. D., Parkfield, Middleton, Manchester ...	B.	22
Hewitt, A. L., 32, Nicholas Lane, London, E.C. ...	A.	135
	A.	136
Hill, E. W., The Elms, Wembdon, Bridgwater ...	Y.	5
Hepburn, Geo., Southbank, Edge Lane, Liverpool ...	K.	2
Harvey, John, O., M.D., 16, Parkhurst Road, Bexhill ...	A.P.	99
Hall, P. Craven, Beldornie Tower, Ryde, I.W. ...	D.L.	4
Heybourn, A. W. and Company, Maidenhead ...	B.L.	46
Irvine, Col. H., Campsie Road, Omagh ...	J.I.	1
Jackson, Cecil, Windermere, Kirkwick Avenue, Harpenden ...	A.R.	184
Jelf-Petit, L. W., Brynhyfryd, Llanrwst ...	C.C.	1
	C.C.	2
Jackson, W., Thorngrove, Mansfield, Aberdeen ...	R.S.	1
James, E. C., Knockdrim Castle, Mullingar ...	L.I.	1
Jackson, J. N., Wisbech ...	E.B.	2
Jackson, R. H., Woodhouse, Bakewell, Derbyshire ...	R.	89
Jackson, A. D., Clifford Street, York ...	R.	22
	D.N.	2
Kingsley, J. V., 1, Victoria Road, Bridlington ...	B.T.	4
Kirsten, J. G., Southborough, Tunbridge Wells ...	D.	372
	D.	373
Knowles, R. U., Colston Bassett Hall, Nottingham ...	A.U.	1
Kirby, J. G., Holly Court, Ardeley, Essex ...	F.	146
Keimp, Thos., Glencoe, 381, Coldharbour Lane, Brixton ...	A.	1364
Llewellyn, J., Uttoxeter ...	E.	25
Lane, R.E., 1, High Street, Peckham, S.E. ...	A.	789
Lyons, Capt. James D., Croon House, co. Limerick ...	I.U.	1
Loder-Symonds, Capt. F. C., Hinton Manor, Faringdon ...	B.L.	1
Lyster, A. G., Engineer of Mersey Docks, Liverpool ...	K.	1
Lauder, R. E., 153, Above Bar Street, Southampton ...	C.R.	1
Lewis, A. Randall, 8, Mirador Crescent, Swansea ...	C.Y.	1
Lewis, T. Arthur, The Hut, Harewood Road, S. Croydon ...	B.Y.	43
Latham, J., "Summerfield," West Derby, Liverpool ...	K.	14
Llewellyn, W. J., Victoria Road, The Brook, Liverpool ...	K.	60
Miles, Laurence, Strawberry Vale, Twickenham ...	H.	182
	H.	183
Mastin, Jules F., Hastings ...	D.Y.	1
Murray, Right Hon. A. Graham, M.P., Buteshire, Scotland ...	S.J.	1
Matthew, J. S., Ardillayn, Dunoon ...	S.B.	1
Macconochie, J. A., Welwood, Kirknewton, Midlothian ...	S.Y.	1
Magrath, Col. J. R., Bann-Abou, Wexford ...	M.I.	1
Mosley, Tenman, Bangor's Park, Uxbridge ...	B.H.	1
Mayhew, Mark, Lieut.-Colonel, Seio, Putney, S.W. ...	A.	4
Mackie, G. W., Trinity Grove, Leith ...	W.S.	1
Macadam, A., Blairroer, Drymen, N.B., Stirlingshire ...	M.S.	21
Marshall, Gilbert, Riverside, Chesham, Bucks ...	B.H.	104
Macdonald, Rt. Hon. Sir J. H. A., Edinburgh ...	S.	1

(To be continued)

FURIOUS DRIVING CASES.

COURT.	DEFENDANT.	ALLEGED SPEED, M. P. H.	RESULT.
Kingston-on-Thames ...	W. J. King, London	19½	£1.
Dublin	F. Batchelor, Dublin	—	40s., etc.
Marylebone...	A. McCormack, Regent St., S.W.	—	£4.
Marlborough Street	T. Wilson, Gloucester Mews, S.W.	25	40s., etc.
Bow St., W.C.	Major Sellar, Bury St., St. James', S.W.	—	Dismissed.

At Bow Street (London), Major Sellar, of the 9th Lancers, appeared to a summons charging him with driving a motor-car to the common danger. Mr. Firth defended. Police-constable 174 E said that on December 23rd he saw the defendant driving along Shaftesbury Avenue. On reaching High Street he went to the wrong side of the refuge and nearly knocked down two ladies whom the officer was assisting across the road. He denied that he went on the wrong side of the refuge, and said he did not see any ladies crossing. Sir Albert Rutzen said this was one of those cases where the danger was more technical than real. He did not impute blame to anyone, but there was some doubt as to whether the defendant did drive on the wrong side of the refuge, and the summons would be dismissed.

THE SALE OF A PICK CAR.

In the high Court of Justice, before Mr. Justice Ridley, the Pick Motor Company, of Stamford, have sued Major Charles Leslie, of Slinning, Sussex, to recover £208, the price of a motor-car and accessories. According to plaintiffs' case Major Leslie called at their works at Stamford in October, 1902, and was shown some cars. He selected a 6-h.p. voiturette, and asked whether it was a good hill climber. The manager replied that the car could climb hills very well, but of course this depended on the skill of the driver. Shortly afterwards Major Leslie sent his son to Stamford, and he was driven in the car to Sussex. Major Leslie declined to pay for the car on the ground that it could not climb hills. Ultimately his Lordship gave judgment for the plaintiffs on the claim and counterclaim for the amount mentioned, holding that the machine answered the purposes for which it was required.

THE NEW MOTOR CAR ACT.

HARRY SMITH, of Coliseum Terrace, Regent's Park, N.W., was charged before Mr. Marsham, at Bow Street Police Court, on Tuesday afternoon, with being drunk while in charge of a motor-car and with not producing his licence as a driver when asked to do so by a police-constable. Police-constable 18 E stated that at eight o'clock that morning he saw Smith in charge of a motor-car in Bedford Street, Strand. The car was only going at a moderate pace, but it was on the wrong side of the road, and as it was wobbling from side to side witness called on Smith to stop. He did so, and as he was drunk witness took him into custody. At the police station Inspector Preston asked Smith for his licence, and he said he had left it at home. Mr. Marsham pointed out to Smith that under the new Act he had incurred a penalty by not producing his licence when requested to do so by a police officer. Smith replied that he was not aware of that regulation. He was very tired but not drunk. Mr. Marsham.—I shall deal with you under the 1st Sub-section of the new Act. That makes it an offence to drive recklessly or negligently, or at a speed or in a manner dangerous to the public. It is a serious offence, and you must pay a fine of £10. You are really liable to a fine of £20. I shall only fine you 5s. for not producing your licence, but future offenders will not get off so lightly.

HILLS AND THEIR GRADIENTS.

The Collier Tyre Company, Limited, have issued a neat calendar for 1904, a central feature of which is a reproduction of one of their well-known motor-tyres as used on the Prince of Wales's electric carriage. Accompanying comes a pocket log-book; this, in addition to the useful information contained in such a volume, gives lists of towns with names of petrol agents, etc., the text of the Motor Car Act, a chart showing the weekly mileage run, and some useful tips for motorists.

As an example of the utility of the book the following extract, giving a list of steep hills with their gradients, is a good illustration:—

Aston	on High Wycombe Road	..	..	1 in 21
Arundel	Arundel to Petworth Road	..	..	1 " 13
Boughton	London to Canterbury Road	..	..	1 " 12
Bury	Arundel to Petworth Road	..	..	1 " 10
Bradford-on-Avon	Warminster Road	..	..	1 " 10
Birdlip	Gloucester to Cirencester Road	..	..	1 " 7
Barnard Castle	Bowes Road	..	..	1 " 13

Burnley	on Bolton Road	..	..	1 in 14
Chatham	London to Canterbury Road	..	..	1 " 14
Crookham	London to Edenbridge Road	..	..	1 " 11
Castleton	Macclesfield Road	..	..	1 " 11
Dashwood	High Wycombe Road	..	..	1 " 11
Duncton	Guildford to Chichester Road	..	..	1 " 10
Edge	Banbury to Stratford-on-Avon Road	..	..	1 " 8
Eastdean	Brighton to Eastbourne Road	..	..	1 " 13
Eastbourne	Eastdean to Eastbourne Road	..	..	1 " 9
Forest Row	London to Eastbourne Road	..	..	1 " 18
Folkestone (Uphill)	Folkestone Road	..	..	1 " 10
Guildford High St.	London to Portsmouth Road	..	..	1 " 14
Goudhurst	Goudhurst to Maidstone Road	..	..	1 " 10
Gittisham	Honiton to Sidmouth Road	..	..	1 " 10
Garrowby	York to Driffield Road	..	..	1 " 8
Glossop	Glossop to Sheffield Road	..	..	1 " 14
Gorcott	Alcester Road	..	..	1 " 11
Handcross	London to Brighton Road	..	..	1 " 17
Hindhead	Portsmouth Road	..	..	1 " 19
Hogs Back	Farnham Road	..	..	1 " 12
Hurstbourne	Newbridge to Andover Road	..	..	1 " 10
High Wycombe	Reading to Amersham Road	..	..	1 " 9
Ham	Salisbury to Exeter Road	..	..	1 " 12
Holywell	Chester to Holywell Road	..	..	1 " 9
Ightham	Sevenoaks to Maidstone Road	..	..	1 " 16
Ifracombe	Barnstaple Road	..	..	1 " 15
Kingsbridge	Exeter Road	..	..	1 " 9
Langdon	Chelmsford to Gravesend Road	..	..	1 " 10
Leatherhead	London to Epsom and Guildford Road	..	..	1 " 11
Limpfield	Westerham to Oxted Road	..	..	1 " 13
Lyme Regis	Lyme Regis to Crewkerne Road	..	..	1 " 9
Lynmouth	Ifracombe to Minehead Road	..	..	1 " 5
Littleborough	Rochdale to Halifax Road	..	..	1 " 14
Macclesfield	Buxton Road	..	..	1 " 15
Nateby	Kirby Stephen Road	..	..	1 " 8
Oare	Marlborough Road	..	..	1 " 12
Portsmouth	London to Portsmouth Road	..	..	1 " 17
Paracombe	Ifracombe to Minehead Road	..	..	1 " 7
Porlock	London to Tonbridge Road	..	..	1 " 6
Riverhill	Reigate and Brighton Road	..	..	1 " 10
Reigate	" " Dartford Road	..	..	1 " 13
Shooter's	High Wycombe and Oxford Road	..	..	1 " 11
Studley Green	Sevenoaks to Maidstone Road	..	..	1 " 15
Seal	Salisbury to Exeter Road	..	..	1 " 12
Shaftesbury	Sidmouth Road	..	..	1 " 7
Salcombe	Axminster Road	..	..	1 " 7
Stammary	Bath Road	..	..	1 " 14
Shepton Mallet	Cheltenham Road	..	..	1 " 10
Southam	Durham Road	..	..	1 " 9
Shotley Bridge	Thirsk Road	..	..	1 " 8
Sutton Bank	Rochdale to Halifax Road	..	..	1 " 12
Sowerby Bridge	Croydon to Limpsfield Road	..	..	1 " 8
Titsey	Exeter Road	..	..	1 " 10
Teignmouth	" " " " " "	..	..	1 " 11
Totnes	Weymouth to Bridport Road	..	..	1 " 10
Upwey	Bath to Taunton Road	..	..	1 " 13
Wells	Oxford to Hungerford Road	..	..	1 " 10
Wantage	Stockton Road	..	..	1 " 10
Whitby	London to Edenbridge Road	..	..	1 " 8
Westerham	" " Henley Road	..	..	1 " 13
White	Dorking to Guildford Road	..	..	1 " 12
Wotton	Gravesend to Tonbridge Road	..	..	1 " 14
Wrotham		..	..

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editor's hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

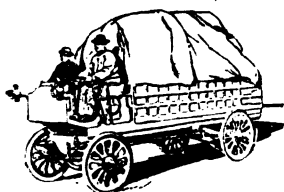
VOL. V.]

LONDON, SATURDAY, JANUARY 23, 1904.

[No 255.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE President of the Local Government Board has appointed a departmental committee to inquire and report with regard to any regulations which should be made under Section 6 of the Locomotives on Highways Act, 1896, and Section 12 of the Motor Car Act, 1903, as respects any class of vehicle for the purpose of increasing the maximum weights of three tons and four tons mentioned in Section 1 of the former Act, and with regard to any conditions as to the use and construction of the vehicles which should be made by any such regulations. This committee was promised a short time ago, and it is to be hoped that its deliberations will result in the adoption of regulations that, if they do not directly encourage the industry, will not hinder its advance.

The Personnel of the Committee.

THE chairman of the Committee will be the Right Hon. Henry Hobhouse, M.P. for East Somerset, and the vice-chairman of the Somerset County Council. He is also the author of a work on local government and the duties of county councillors. The other members of the Committee are Sir W. Arrol, M.P. for a Scotch constituency, whose name is familiar in connection with the construction of the Forth and Tay bridges, and who is also a director of the Mo-Car Syndicate, Limited; Mr. H. C. Monro, C.B., who has been assistant secretary of the Local Government Board since 1897; Mr. H. G. Harris, of the Council of the Institution of Mechanical Engineers, and Mr. G. F. Deacon, of the Council of the Institution of Civil Engineers. The latter has been associated with many important water supply undertakings, and is also the author of several works on scientific subjects. Mr. R. J. Simpson, of the Local Government Board, will act as secretary to the Committee whose deliberations will be followed with keen interest by commercial men as well as by motorists. It is certainly a very representative selection.

A "Sample" Car and the Inland Revenue.

MR. WALTER CROWDUS, residing at Barkston Gardens Hotel, Kensington, has been summoned at the West London Police Court, at the instance of the Commissioners of Inland Revenue, for keeping a carriage without a licence. Mr. H. Pierron, who represented the defendant, raised the point that the carriage in question, which was, in fact, an electric motor-car, designed by himself, and termed the "Crowdus motor-car," was not liable to duty because it was only a sample car. The defendant brought it over from America for the sole purpose of selling the patent connected with it. A syndicate took the car for eight months, with the option of purchasing the patent, and that syndicate

did take out a licence for the time that they used it. At the end of the eight months the syndicate decided not to purchase, but meanwhile the defendant had incurred certain expenses at the hotel, and he accordingly arranged with the landlord of the hotel that the latter should hold the car as security for his hotel bill. Since then the only occasions on which Mr. Crowdus had "used" the car was for the purposes of showing it for sale. He (Mr. Pierron) submitted two points:—First, that the car was not "used" in the ordinary acceptance of the word, but was in the same category as those carriages kept for show by Long Acre coach builders; and secondly, that if anyone was the keeper or user of the car, it was the landlord of the hotel. The magistrate (Mr. Rose) observed that the case presented interesting and peculiar features. From the very straightforward account given by the defendant it appeared that the car was really being kept and used not by the defendant, but by the landlord, to whom it was either mortgaged by some deed or who possessed the landlord's ordinary right of lien over it. The case was too full of doubt for decision against the defendant, and the summons would therefore be dismissed. Would that country justices were equally tolerant where motorists are concerned.

Who's for Germany.

A SPECIAL Committee has been appointed by the German Automobile Club to deal with the question of finding accommodation for the many thousands of visitors who are expected to journey to Germany on the occasion of the Gordon Bennett race. According to one report, all available rooms at the hotels at Homburg have already been booked, while those in the small towns in the neighbourhood are rapidly being taken up. It is stated that the A.C.G.B.I. has already booked a hundred bedrooms in one of the large hotels in Frankfurt-am-Main. There can be no question that early application should be made by all who intend to go to see the race, otherwise they will probably find difficulty in securing rooms, except at exorbitant prices. Already it is announced that after May 1st the hotel keepers will put up their prices for any rooms disengaged. We understand that Herr Christ, of 20, Oderweg, Frankfurt-am-Main, will answer any enquiries on the subject on behalf of the above-mentioned Committee. Meanwhile the Hotel Proprietors' Syndicate have issued a circular as to rates, compared with which the charges made in Ireland last year appear modest and almost insignificant.

Numbers for Everybody.

ARE "numbers" so popular that they will be suggested for vehicles of every description? In a case just heard at the Bromley (Kent) County Court, in which a collision between two vans was the cause of the trouble, Judge Emden pointed out that the evidence proved that motor-cars were not the only things that should be numbered. Later, His Honour again emphasised the need for such conveyances being numbered, remarking that it was only one of thousands of cases. It would be a strange turn of fortune if owners of horse-drawn vehicles,

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having advocated the labelling of motor-cars, should have to be numbered as well.

Through Lovely Surrey.

SATURDAY being almost the first fine day this year, we took advantage of the sunshine and frozen roads for an afternoon run through Surrey by way of Putney, Kingston, Ripley, Merrow Downs, Shere, and Gomshall, to Abinger Hatch, where a halt was made for tea. The air was keen and exhilarating, the roads in fine condition, and the sensation of being once more on the car after an interval of more than a fortnight was most enjoyable. The homeward trend was *via* Dorking, Leatherhead, Epsom and Wimbledon. Darkness came on suddenly, and lamps had to be lit before five o'clock, although lighting-up time was not till 5.18. Numerous covered vans belonging to firms like Messrs. Derry and Toms, John Barker, the London Parcel Delivery Company, etc., had no tail lights, and their presence all over the road was both inconvenient and dangerous.

where our ancestors sadly took their pleasures and their meals. The present age is all for everything open and light and bright, and men and women are no longer ashamed of being seen in one another's company in a public hall. For this consummation we are indebted to our American cousins.

Colonial Clubs.

LAST week we referred to the South African and New Zealand Automobile Clubs, and expressed the view that ere long all the important colonies would have their motor-car organisations. Confirmation of such a view has not been delayed, for the last mail brings an account of the opening run of the Automobile Club of New South Wales, which is published on another page. Already the owners of thirty cars have become members, and there is every likelihood of a successful career. Some amusement is also being caused among the Cornstalks by a local association in Auckland, N.Z., taking unto itself the title of "The Automobile Club of Australasia." The first combined motor-car and motor-cycle run held in Melbourne



The First Automobile Meet in Victoria. The party at Mordialloc.

To Brighton and Back.

ON Sunday, again, the sun shone still more gloriously; the frost continuing, the roads were even in finer condition, and the journey to Brighton without incident was much enjoyed. Very few people were met on the roads, and the man in blue was conspicuous by his absence, but on the return journey all the world and his wife, with their families, were out, and policemen in numbers and in pairs were suspiciously plentiful. Cars, to our astonishment, were few, and the "Old Ship" garage was not half full. Very few motorists indeed came in to lunch, and the beautiful sea front was empty of all forms of traffic, although the sun was shining resplendently. At the top of Reigate at least half a dozen cars were stationary by the side of the road, and about twenty more were met or passed on the way to London, one old "six" groaning piteously as it slowly ascended Wimbledon Hill, with its two passengers and a boy. At the "Old Ship," by the way, an adjoining house has been acquired and a sumptuous lounge is being fitted up.

Lounges.

TALKING of lounges reminds us that at the Royal Bath Hotel, Bournemouth, where the writer and family spent a pleasant Christmas with the car, a beautiful lounge was opened at this charming hotel on Christmas Eve. An hotel, in our opinion, without a lounge is an abomination and should be avoided. The old rule of the ladies to the drawing room and the men to the smoke room is as obsolete as the little musty boxes

was successfully carried out on December 6th, the weather being most pleasant for motoring. The run was to Mordialloc, where about sixty motorists sat down to dinner. Amongst those who drove down were:—Dr. Merrill (Winton), Dr. W. Atkinson Wood (Benz), Dr. Officer (Oldsmobile), Messrs. T. Rand (Deauville), J. Wallace (Benz), O. Schumaker (De Dion), W. H. Lewis (De Dion), C. B. Kellow (Humberette), H. Stevens (Knowles), W. Warden (Oldsmobile), J. M'Kenzie (Oldsmobile); the motorcyclists formed a big contingent, about thirty being present.

Chief Constables and the Car.

THE conversion of chief constables to automobilism is progressing rapidly, and they will soon be among the most ardent motorists in the country. During the late visit of the King and Queen to Chatsworth, Captain H. C. Holland, the Chief Constable of Derbyshire, accompanied the Royal motorists throughout their excursions on his 9-h.p. Beaufort phaeton, which he has driven since October last. On the occasion of the Royal visit to Hardwick, it kept up with the high-powered cars carrying the King and his party despite the heavy state of the roads owing to the wet weather, and Captain Holland has expressed his satisfaction to the Beaufort Co. A similar testimonial to automobilism has been forwarded to the Hozier Co. by Major Bower, C.M.G., a Yorkshire Chief Constable, who has just completed his first 500 miles on his 10-h.p. Argyll car, which has far exceeded his expectations. He recognises it as "a really good traveller"—a fact which should make him careful should he ever venture southwards. But probably Mr. Govan, who saw

the Hampshire police methods during the Reliability Trials, has already warned him on that point.

The Registrations.

FOLLOWING the information given last week as to the number of automobiles registered, we received official intimation from the London County Council, too late for earlier publication, that, up to the 6th inst., 1,907 motor-cars and 772 motor-cycles had been registered within the Metropolitan area, while 3,200 licenses to drive had been issued. From the county of Middlesex come official statistics showing that of the 639 automobiles registered there up to the 18th inst., 352 were cars and 287 motor-cycles. No less than 1,002 licences to drive had been issued, of which 813 were to drive cars, the remainder being applicable to motor-cycles only. At Hastings, up to the same date, thirty-two cars and twenty-five motor-cycles had been registered. One hundred and sixty nine licences have been granted by the Chief Constable of Portsmouth, who had also registered 71 motor-cars and 73 motor-cycles. Other belated English returns are those from South Shields and Bradford, where the registrations of automobiles have numbered twelve and 104 respectively. Up to the 13th inst. twelve motor-cars and thirty-two motor-cycles had been registered in the city of York, where fifty-seven licences to drive had also been issued. In Cardiganshire six motor-cars and ten motor-cycles have been registered. Lately received returns from Scotland show that in Govan four motor-cycles have been registered and five drivers' licenses issued. In the county of Wigtown eight automobiles and nine licences have been reported. Eight cars and nine motor-cycles have been registered in county Carlow, three automobiles in Monaghan, and eight in county Mayo, where only four licences to drive have been issued. It is therefore clear that the number of registered automobiles is between 16,000 and 17,000, a number which should be swelled into the twenty thousands when the fine weather comes again.

New Clubs.

THE latest automobile organisation is the Peterborough and District Motor Club, with Messrs. F. T. Highton, of Peterborough, and P. Mays, of Bourne as secretaries. At Hartlepool, too, a local automobile club has been formed, with Mr. G. Jones as president and Mr. C. C. Brown as hon. secretary. The formation of two such clubs in one week is significant of the keenness with which motorists are regarding the new position brought about by the Motor Car Act. The strength that comes from such union should do something to prevent any unnecessary harshness on the part of local authorities.

Heavy Traffic.

IN our last issue reference was made to the value of automobiles in helping towards the solution of many social problems, and publicity was given to the insistence with which Mr. D. Mackenzie pleaded the cause of good roads at a meeting of the Surveyors' Institute. Mr. Mackenzie, who is the managing director of the Motor Transport Company, said that he had found in practice that motor vehicles were able to transport goods more cheaply than the railway even, in certain cases, where private sidings were provided, because the railways were eaten up by terminable charges, and consequently their rates for short distances were out of all proportion. He regards the paying load for motor transport to be 5½ tons. Therefore the factory owner must bear in mind that if his manufactures are such that he cannot send out such loads, it will pay him better to do his cartage by horses. It must, however, be borne in mind that not only so far as trades, loads, and bulk of manufacture are concerned do we have to consider each case on its merits, but also on the nature of the roads leading to the suggested sites. Unfortunately in some districts motor transport is still met by active hostility on the part of the local authorities. In Hornsey, for instance, the police have informed

Mr. Mackenzie that they have instructions from the local authorities to persecute mechanical transport in every possible way.

Alleged Police Perjury.

POLICE evidence has often been so unsatisfactory that the fact that an application for perjury against a police-constable has been made in a London police court will occasion no surprise. In the Bow Street Police Court, on Monday, Mr. Staplee Firth applied to Mr. Marsham for a summons for perjury against the police-constable who recently gave evidence against Major Sellar when he was accused of driving a motor-car to the common danger in Shaftesbury Avenue. The case was dismissed by Sir A. De Rutzen. Mr. Marsham said he would consider whether a summons should be granted, and let him know his decision in due course. The fact that such applications may be made should prove a deterrent to some of the exaggerations in which policemen too frequently indulge.



Dr. R. Von Marx, the Oberbürgermeister of Homburg, who is taking an active part in the preparations for the 1904 Gordon Bennett Race. (Allgemeine Automobil Zeitung.)

The Coming of the Napier.

IN May, 1900, that triumph of organisation the first 1,000-mile Trial was held, and the success of that event was the 9-h.p. Napier, the first car designed and built by Mr. D. M. Napier. Since then the merits of "England's Premier Car," have never been allowed to be forgotten, nor has the designer permitted the Napier car to be other than amongst the most up-to-date of vehicles. With the large demand naturally came the necessity for larger works; we must confess, however, that we were not prepared for the busy scene which greeted our eyes when we visited the new works at Acton Vale a few days ago. The grounds cover more than seven acres, and the buildings, with splendid roof lights, occupy nearly two acres. The tools used are all of the most modern description, and between 600 and 700 men are engaged, the orders being so numerous that night and day "shifts" have to be employed. In the works motors were seen about in numbers, and between twenty and thirty chassis were in course of erection. The first batch of the new six-cylinder cars was amongst the number. The firm of Messrs. D. M. Napier and Sons is an old one, and their previous business was chiefly, we understand, supplying

the plant used for minting purposes. This included the most delicate of balancing machines, etc., and no doubt this fact accounts for the fine work for which the firm is famous. At all events the sight of the busy hive of industry was a gladsome one, and it is satisfactory to know that such fine motor-cars can be turned out in this old country of ours.

Activity of the Provincial Clubs.

PROVINCIAL clubs have had a busy and, on the whole, a useful time during the last few days. At Sheffield local automobilists have had the advantage of a lecture on electrical ignition as applied to the automobile by the general manager of the Corporation Electric Light Department, who is a motorist himself and was able to give a practical turn to his discourse. Nottingham automobilists have been indulging in a ball, the first motorists' event of that kind that has taken place in this country. Clubmen at Wolverhampton have been dining, with the head constable of the borough as one of the company. At this gathering Mr. Rhodes, the hon. secretary, reported that the value of the automobiles owned by members was £14,420, a substantial sum in view of the fact that the club has only been in existence three years. The Halifax Automobile Club has also held a social gathering of members within the last few days, and has issued to members a useful set of notes on the Motor Car Act, which should enable them to avoid pitfalls. Elsewhere we record the second stage in the formation of a club in the city of York, and also the annual meeting of the County organisation. In Scotland the society for the Western Section has had a visit from Mr. Jarrott. Altogether it will be seen that the second session of the winter season has begun well with the provincial clubs, whose virility is an earnest of the good influence they are likely to exert.

Discouraging Industry.

THE discouragement of British industry assumes various forms—magistrates, councillors, and other people who ought to know better, seem to agree on the idea of placing difficulties in the way of useful progress. At the last meeting of the Hove Town Council some councillors took exception to an arrangement which had been suggested that the Southern Steam Transport Company should be allowed to take water for their steam wagon at a guinea a year. A doctor-councillor said that the steam wagon was an intolerable nuisance, and should be discouraged in every way. This attitude, so reminiscent of the early days of the last century, is strangely out of keeping with the progress of the age.

Licensing Motor-Vehicles.

AT Bristol, too, a case of discouragement has nearly occurred. This was happily frustrated by the legal acumen of Mr. Staplee Firth, who appeared for the defence, and secured a dismissal. The Western Road Carrying Company were summoned for using a locomotive which had not been licensed by the County Council for Somerset on the highway at Long Ashton on December 8th. A constable stated that he saw a driver of the defendant company driving a locomotive with a trailer. The engine was emitting smoke and steam. Witness spoke to him about it, and he said that he tried to stop the smoke and steam as much as he could, but if he did not blow it off sometimes they could not get along very fast. Witness asked him if he had a licence, and the defendant answered that he did not think it was necessary. Hence the summons. For the defence it was contended that the locomotive was built under sub-section 1 of section 1 of the Act of 1896. It was admitted that the vehicle was a light locomotive and not a traction engine. In point of weight they came under that section of the Act. The other side in the case would have to satisfy the Court that this vehicle was deliberately constructed so as to emit smoke or visible vapour from the funnel, and that no attempt was made to prevent the emission

thereof. The vehicle was not a carriage under the meaning of the Customs and Inland Revenue Act of 1888, and a tax was not necessary. Under this exemption from the Act of 1898, under which the proceedings were taken, was pleaded. The Act of 1898 only referred to vehicles of more than three tons, or four with a trailer. The Bench ultimately came to the conclusion that the machine in question was a light locomotive constructed according to the Act. Seeing that the company has eighteen similar vehicles the importance of this decision can be easily gauged.

Views of a City Father.

BEFORE the London Traffic Commission Alderman Sir H. E. Knight, who has sat as a City magistrate for thirty years and had unique opportunities of studying the problem, has been giving his views. The main causes of obstruction in the streets were, he said, concentration of traffic at centres, vans and carts standing for loading and unloading in front of houses; omnibuses, empty cabs, heavy goods traffic, and tramways. The remedy for vans and carts was the substitution of motor traction for horse traction, which would reduce the existing obstruction by from 25 to 33 per cent. No dray, lorry, or van should exceed 7 ft. in width and teams should be forbidden, motor power being used for coal vans and brewers' drays. All omnibuses should also be motor driven, and concentration at stopping places should be avoided. Where possible omnibuses going in opposite directions should use parallel streets.

The Automobile Club Show.

AS the date of Cordingley's Ninth International Automobile Exhibition draws near the interest of the trade and public alike increases. Already more than 250 exhibitors have taken space, and the success of the display is fully assured. Now comes the intimation that once again the Automobile Club's name will be associated with the Exhibition. At the meeting of the Committee of the A.C.G.B.I. on the 18th inst. it was resolved—we quote from the official record in the minutes—"That the Club do give its patronage to the ninth Automobile Exhibition, to be held at the Royal Agricultural Hall, Islington, from Saturday, March 19th, 1904, until Saturday, March 26th inclusive, for the year 1904." This decision will be welcomed by motorists as a recognition of the good work done for the movement in the preceding eight exhibitions, and as setting the seal of official authority on a thoroughly representative show, which will eclipse in general interest any previous display held in this country.

THE discussion on "The Cost, Upkeep and Care of a Motor-Car," to be introduced at the Western Section of the Scottish Automobile Club by Messrs. J. Hunter Steen and John Adam, has been postponed to February 29th.

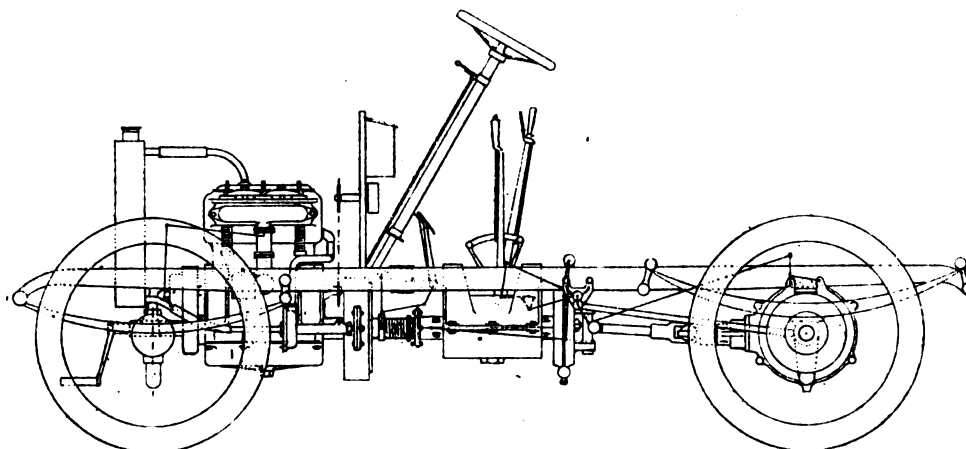
AT the moment of going to press we learn that the Automobile Components, Limited, have withdrawn the charge against Mr. E. H. Jones, of Canonbury. The company have agreed to pay £375 in discharge of the defendant's claim against them, and Mr. Jones, on the other hand, has agreed to allow the goods which were now in possession of the police to be returned to the company. Mr. Bros, the magistrate, in allowing the case to be withdrawn, was understood to say that the defendant appeared to have acted under the belief that he had a title to the property.

THE business of the Blieriot lamps for Great Britain and the colonies, carried on at 54, Long Acre, W.C., has been bought by the English firm of C. Weldhen, makers of carriage lamps and coach benders and platers, of 36, Seymour Place, Marble Arch, W., who will carry it on under the style of Weldhen and Blieriot. Messrs. Frank Ward and William Ward, the directors of C. Weldhen, will continue to devote their time to the new undertaking, while Mr. Charles Weldhen will manage the works. The services of Mr. Norbert Chereau, who has brought the Blieriot lamps so prominently before the British public during the last twelve months, have also been retained.

THE "RYDE" PETROL CAR.

WE are this week able to give an outline illustration of a 14-h.p. petrol car which is being built by a new concern—Ryde Motors, Limited, of Ealing, W. The object of the designer, Mr. F. W. E. Ryde, has been to build a quiet, comfortable car of comparatively light weight, with ample power, having a motor balanced as far as possible, with a regular turning moment or series of impulses and great flexibility; the gearing to have ample tooth surface and arranged for medium speeds with a view to practically all the running being on top speed. The frame is of pressed channel steel stiffened with cross members and gusset plates, the ends being shaped to form horns. No underframe is employed, the engine and gear box being supported from the main frame. The motive power is supplied by a vertical three cylinder engine. The cylinders are 4 in. diameter by 5 in. stroke. The inlet and exhaust valves are mechanically operated and interchangeable, arranged on either side of the cylinders and set so that the crank shaft receives an impulse every two-thirds of a revolution. The engine is rated at 14-h.p. but is stated to develop 15.8-h.p. The crankshaft runs in four long bronze bearings. The cam shafts are enclosed in the crankcase, which is bolted to the main frame and so arranged that

are made of hardened steel, are all $1\frac{1}{4}$ inch wide on the face; they are arranged on short shafts running in long bronze bearings. The gears are enclosed in a dustproof oil-containing aluminium case, which is provided with a large inspection door. From the gear box to the rear live axle the power is conveyed by a cardan universally-jointed shaft and bevel gear. The propeller shaft is of strong construction, having universal joints with large wearing surfaces. The brakes are of the metal to metal double-acting external type. The brake shoes are easily adjusted, interchangeable, and are supported by special non-rattling brackets. The body is suspended on long flat springs hung on low shackles, the rear springs being outside the frame. The front axle is of the dropped variety with open forged ends supporting the steering pivots at top and bottom; the top ends, which take the weight, have ball bearings, with a view to easy steering. The rear axle runs on plain phosphor-bronze bearings and ball thrusts. The road wheels are of the artillery type with steel hubs and flanges, all being 32 in. diameter shod with $3\frac{1}{2}$ in. tyres. The standard speeds of the car are seven, fourteen and twenty-one miles per hour at normal engine speed, the maximum, with the motor accelerated, being thirty-two miles. With this ratio of change speed gearing practically all the driving is, the makers state, on the top speed, this conducing to silence and great ease of running. The



Outline Elevation of "Ryde" Petrol Car.

the bottom portion can be removed, and, if necessary, the big ends of the connecting rod disconnected and pistons removed without disturbing the crankshaft or main bearings. The engine, which is fitted with a special automatic carburettor and is governed on the throttle, runs at a normal speed of 750 revolutions per min.; it can, however, be accelerated to 1,200, or retarded to 180 revolutions. The carburettor and pump, &c., are all mounted on the arms of the crankcase, so that, in case of repair, the engine and its accessories can be lifted out of the car intact without the breaking of a number of joints. The lubrication of the engine is effected by a sight-feed positive oil pump on the dash board. The ordinary high tension system of electric ignition is adopted, the sparking plugs being over the inlet valves. The commutator, which is on the dashboard, is of the internal wipe contact type, it is chain driven, and is so arranged that the contact may be instantly removed for inspection or cleaning without disturbing the timing gear. A combined radiator and tank fills up the front opening in the bonnet. It consists of two flat tanks connected by compound ribbed pipes. A fan is stated to be unnecessary, so is not employed, a rapid circulation being maintained by a centrifugal friction-driven pump arranged out of the way of road obstacles.

Coming now to the transmission, three speeds forward and a reverse with a direct drive on the top speed are provided. An aluminium leather-covered cone clutch transmits the power to the gear box. It is so arranged as to be easily adjusted, and, if necessary, completely removed on its short shaft without disturbing any other part. The change-gear wheels, which

engine will allow of much higher gears, if desired, necessitating, however, more frequent changing of the speeds.

MR. ALEX KENEALY has retired from the "Daily Express" and is now associated with Messrs. Harmsworth.

A NEW garage has been opened in Worcester Street, Gloucester, by Mr. A. C. Stretton. Stocks of petrol, oils, etc., will be kept.

SIR ANDREW NOBLE'S motor-car collided with a tramcar in Newcastle the other day. The latter was uninjured, the former lost its front wheel in consequence.

THE contest committee of the Automobile Club of America has fixed March 15 and 16 as the dates for the second annual test of commercial motor vehicles.

FOR the second time within a few months Judge Emden, the judge at the Lambeth County Court, has declared how useful in his legal work has been the experience of traffic he has gained as a motorist.

SIR GEORGE NEWNES has taken a great interest in the class for drivers at the Battersea Polytechnic, and, as the result of a generous offer on his part, the institution has been able to acquire a large car for the purpose of giving driving lessons.

MR. JAS. MILNE, of Inverurie, N.B., has brought out an arrangement for illuminating the rear number plate at night. It consists of a combined rectangular lamp and number plate which, when lighted, shows the numbers in white on a black ground. The red rear light required by law is also shown.

CONTINENTAL NOTES.

THE first house dinner of the 1904 season of the German Automobile Club was held in Berlin on the 14th inst., among those present being Prince Frederic Charles of Hohenlohe and the Duke de Ratibor. During the evening Herr Levin gave an address on the state of the automobile pastime and industry in Germany, and referred at length to the forthcoming Gordon Bennett race. In this connection he stated that most careful arrangements were being made for the safe carrying through of the race, and that a series of precautionary measures were being prepared and which would be strictly enforced. As in Ireland, Westrumite is to be laid at the corners on the route to lay the dust. Work has already been commenced at Saalburg on the widening of the road near the starting point of the race.

ALTHOUGH nothing definite has yet been settled regarding the course for the German eliminating trials, it is reported that the three German De Dietrich cars will be driven by Messrs. Mathis, Bugatti, and De Beukelaer; the two Benz cars by Messrs. Barbaroux and Ricordi; the Dürkopp car by Dr.

MORE than ever does the automobile form a predominating feature of the season in the South of France. Just now Nice, Mentone, and Cannes are crowded with visitors from every country in Europe, and powerful cars are flying about in all directions. The Grand Duke Nicolas Michailovitch of Russia is one of the recent arrivals, bringing with him a 60-h.p. Mors. The Promenade des Anglais, at Nice, which has been closed to motor traffic for some time, has, at the instance of the Nice A.C., been provisionally re-opened to motor-cars, with the condition that a moderate pace shall be maintained, in order that no dust may be raised or to prevent the public making any reasonable complaint. The Nice Club has just had posted in all the local garages a notice drawing attention to the concession of the local authorities and asking all drivers to conform fully to the regulations which have been drawn up.

AN Odessa correspondent reports that the automobile movement is making steady progress in that city. At present there are about thirty motor-cars and cycles in the district, mainly of French origin, the favourite types being Peugeot, Darracq and



In a recent issue reference was made to the fact that a 20-h.p. Stoecker car was driven from Stettin, North Germany, to Paris, a distance of 1,362 kilometres, conveying two members of the firm of Messrs. Stoecker Brothers to the Salon, the journey being done, in easy stages, in six days. We now learn that the return journey was safely made in five days. The above illustration shows the vehicle which performed this long journey, with Herr Bernhard Stoecker, jun., at the wheel.

Lehwess; and the Protos car by Herr Fuchs. The entry fee has been fixed at £150 for each firm, irrespective of the number of cars entered, the limit, however, being three vehicles.

THE question of the hour in France is as to where the French eliminating trials shall be held. The Circuit des Argennes, in the French Ardennes, is first favourite, but the consent of the Government has yet to be obtained. During the past week quite a number of well-known motorists, including M. Rene de Knyff and several A.C.F. officials, have been over the course, which starts from Flize, and returns to the same spot *via* Chemery, Beaumont, Carrefour de Stenay, Buzancy, Carrefour de Vouziers, Le Chesne, Carrefour de Poix, a total distance of about 130 kiloms., through sparsely populated country.

It is now announced that Messrs. Rene de Knyff, Henri Farman, and Teste will drive the three Panhard cars and Baron de Forest one of the De Dietrich cars in the French eliminating trials.

Decauville. Recently, however, a few cars of German, Belgian and American make have made their appearance.

THE death occurred last week of M. Henri Lachambre, at whose works at Vaugirard, one of the suburbs of Paris, the balloons of practically all the modern airships in France have been constructed, including those of Santos Dumont and the late Baron Severo and M. de Bradsky.

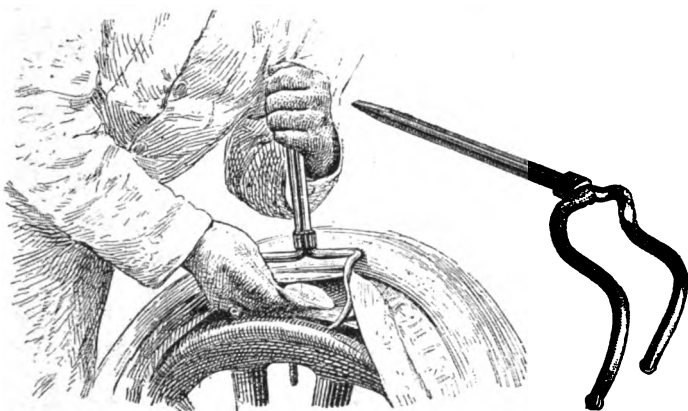
THE court at Chateaudun has concluded the hearing of a case arising out of the Paris-Madrid race. In the course of that ill-fated event the car occupied by Mr. Leslie Porter and Mr. William Nixon, of Belfast, broke down in taking a turning at the level crossing at Bonneval. The petrol reservoir of the car caught fire, and Nixon, who was acting as mechanic, was caught and pinned down under the vehicle and burned to death. Mr. Porter, who was charged with homicide, caused by recklessness, was sentenced to pay a fine of 200fr., the Berenger law to apply, which virtually means that no blame attached to him.

THE Automobile Club of Cannes proposes to organise a touring competition to be held from the 13th to the 29th March next. It is also arranging for a tour to Turin in connection with the exhibition which is to be held there next month. The distance is about 190 miles.

THE Austrian-Daimler Motor Company, of Vienna, have lately completed and despatched to London some petrol motor-wagons to the order of the British War Office.

THE latest competition which "Le Velo" proposes to hold is one intended for motor-carriage body builders, the object being to improve the design of bodies for touring cars.

ONE of the novelties shown by Messrs. Michelin, the makers of pneumatic tyres, at the Paris *Salon*, was the tyre lever illustrated herewith, which has been designed to overcome the two difficulties which have hitherto presented themselves—fitting the security bolts in position, and putting the air valve in its place without damaging it. The two prongs of the fork are made of suitable lengths and shapes, according to the size of tyre, so as



to enable the security bolt to pass through the prongs. The method of using the fork to replace the bolt in the rim is shown in the left illustration, and requires no description. The fork will also be found useful in replacing the air valve, which is generally a matter of some difficulty. The handle of the tool is tapered off so that it can be used as an ordinary lever in removing the outer cover.

THE third International Automobile Exhibition in Brussels opens in the Palais du Cinquentaime on Saturday, the 23rd inst., and promises to be a brilliant success, there being about 150 exhibitors. In connection with the *Salon*, which will remain open until February 4th, a number of competitions are being organized, notably an international one devoted to anti-skidding devices.

A NEW Swiss company to take up the construction of petrol motor vehicles for commercial purposes is the Automobil-Fabrik Orion Gesellschaft, of Zurich, whose cars are about to be introduced into England by Mr. W. C. Moss, of London. While testing a single-cylinder car on Friday, last week, Mr. Moss, with M. Zurcher, the designer, and a workman passed the foot of the Netliberg mountain. An attempt was made to see how far the car could be driven up the hill, not in the least expecting to reach the top (873 metres) owing to the bad condition of the roads from the snow and frost. However, the car with its load managed it, and arrived safely at the station on top of the mountain. In view of the fact that the roads were narrow and covered with frozen snow, through which the driver had often to pick a way to get a grip for the driving wheels, and at sharp corners to prevent skidding over the side and reaching the bottom again by the quickest possible road, the performance is certainly a creditable one for the new vehicle. At certain parts of the ascent the party had to take it in turns to handle the pick and shovel borrowed from one of the stations to dig a way for the car. The gradients were very steep all the way up,

and at some of the corners exceedingly difficult and bad. No trouble was, however, experienced beyond the slipping on the snow. We understand that, in addition petrol motor-wagons, the Orion are at work on a motor-bus intended for service in London.



The "Orion" Petrol Lorry ascending the Netliberg Mountain.

THE Italian Minister of Public Works has appointed a Commission to consider what modifications are necessary in the regulations for the circulation of automobiles, and the means to be taken for the establishment of motor-car services in districts where railway facilities are lacking. The Presidents of the Italian Automobile Club and the Italian Touring Club will sit on the Commission.

IN connection with the international exhibition to be held in Vienna from the 16th April to the 31st May next, under the auspices of the Austrian Automobile Club, two competitions are being organised, one for passenger cars using alcohol or benzine as fuel, and one for motor-omnibuses and delivery wagons.



The "Orion" Petrol Lorry at the summit of the Netliberg.

THE Dutch Mechanics' Union has just been formed at Grafenhausen, Holland. Among its objects is to give diplomas to motor-car drivers who successfully pass the Union's examination.

THE Lake District Road Traffic Company, Limited, has been registered with a capital of £25,000. to carry on the business of carriers and hirers of motor-cars and wagons. The first directors are Messrs. W. P. J. Fawcus, R. Rig, F. Fowkes, R. Bounass, T. Taylor, J. S. Harker, A. Jackson, and J. Cowperthwaite.

THE MOTOR CAR ACT.

In our next issue we propose to publish answers to several queries received with regard to the operation of the Act, questions of licensing, etc. Readers who experience any difficulties in interpreting the provisions of the new legislation are invited to communicate without delay.

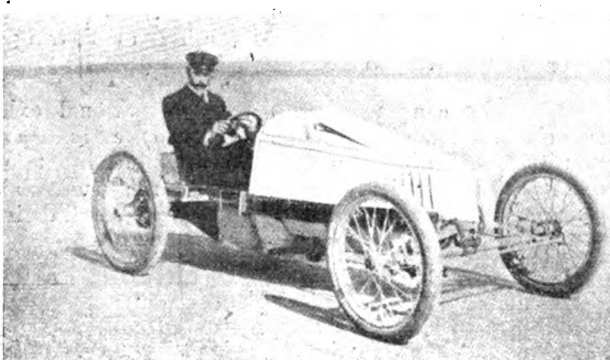
The Works Committee of the Edmonton District Council has instructed its engineer to specify alleged dangerous places within its area, and recommends that the limit of speed for motor-cars within the district be restricted to ten miles per hour. We would urge all local motorists to unite in an attempt to prevent such an order being made.

The different attitudes with which various local authorities are viewing the operation of the Motor Car Act are interesting, ranging from the intolerance of Winchester to the common sense shown by the Derbyshire County Council. The Winchester Rural District Council have passed a resolution protesting strongly against any additional charges being imposed on the public for the purpose of carrying out the Motor Car Act, and declaring that motorists should provide the whole of the

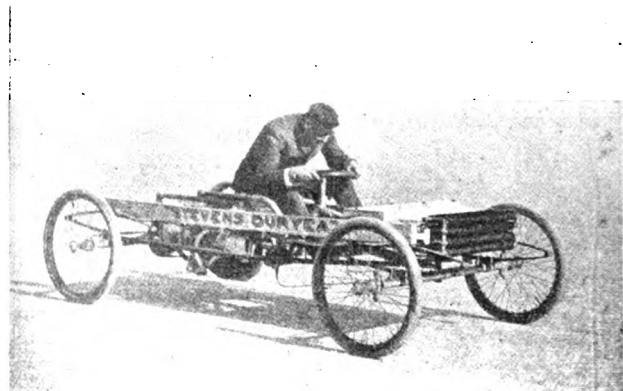
Returns have been received from all local authorities within the jurisdiction of the Lancashire County Council, pointing out where signposts are, in his judgment, necessary. These have been considered by the county surveyor, and, after careful deliberation by his committee, have been referred back for further consideration, with a view to their reduction in number, and consequent saving of expense, which appeared likely to be no less than £2,000.

The Middlesbrough Corporation has decided to ask its Hackney Carriage Committee to reconsider the regulations it had drawn up in connection with the Motor Car Act, with a view to the prohibition of automobiles from certain streets in the town.

The Surrey County Council have written to the district councils within their area stating that the Committee charged with the duties under the new Motor Car Act have recommended the Council not to advise any speed limit upon motor-cars, at all events for the present, upon any of the Surrey roads, having decided "to rely upon the provisions of Section 1 of the Act of 1903, which made the driving of motor-cars recklessly or negligently, or at a speed in any manner dangerous to the public, punishable with heavy penalties." Further, at present no steps are to be taken to prohibit the use of motor-cars on any



Schmidt on the Packard-Gray Wolf, on which he lately covered a mile in 46 2-5 sec.



Netman on the light Stevens-Duryea, which has done a mile in 57 1-5 sec.

RECORD BREAKING ON THE ORMOND-DAYTONA BEACH, FLORIDA.

[Motor Age.]

necessary money for the purpose. Seeing that the Act was adopted by the Legislature in opposition to the wishes of more motorists than was generally supposed, the idea that they should pay for the ordinary services rendered by the local authorities is absurd. Signposts for travellers have always been a common charge, and so must be the warning boards to motorists. If those responsible for the roads had done their duty in the past, such signals would have been unnecessary.

In pleasant contrast to such a suggestion is the decision of the Derbyshire County Council, which, upon the motion of Colonel Cavendish, has decided to rely wholly upon Section 1 of the Act with regard to fast driving. In the discussion Mr. Waddington, of Glossop, said his local council had decided to apply for the ten mile limit, but the County Council proved wiser than the Glossop local body and would have none of such restrictions. Mr. F. Strutt then expressed the hope that the Council would see to the erection of danger posts and signals, pointing out that Derbyshire was the centre of England, and travellers from one large place to another had most frequently to pass through the county. It was explained that this matter was already in the hands of a sub-committee, and that the subject would have careful consideration.

Surrey highways. The letter adds that the matters of dangerous corners, cross roads, and the erection of sign posts are under consideration.

On Sunday morning the Cobham representatives of the Surrey police, under the direction of Inspector Marks, of Hersham, commenced their operations against automobilists under the new Act. The energetic inspector took up a position from which it was alleged that it was possible to time a car from the moment it passed a certain point on the Fairmile. Mr. S. F. Edge, who happened to be coming along on a 6-h.p. De Dion, immediately stopped on seeing a car drawn up at the side of the road, with a police guard standing round, and after enquiring innocently enough what the trouble was, did his best to convince the timekeeper that it was hardly possible to time a car when he had to look round a bend in the road to see the Fairmile at the commencement of the measured stretch! It is said three or four cars were stopped and names and addresses taken. There is a strong feeling amongst the leading residents that to pay 3½d. in the £1 for police who appear to have little else to do now but parade on the main road, is somewhat of a waste of money. It is clear that if the local police en masse are out motor chasing on Saturdays and Sundays, there can be no protection for the villagers at night.

THE "SHARPE" SILENCER.

IN our last issue we briefly referred to a new silencer which has been devised by Mr. N. Sharpe, and which is being put on the market by the Imré Engineering Company, Limited. We have since had an opportunity of inspecting the device and seeing it in operation on a 12-h.p. Boyer car, on which it is fitted side by side with the original silencer. By means of valves the exhaust can be made to pass into either, and we are bound to say, from the demonstration afforded us, that the exhaust emerges from the Sharpe arrangement with but only a tithe of the pressure compared with the other; and while in the latter it is extremely noisy, little or no noise can be heard in the new form.

The arrangement of the new silencer will be seen from the accompanying illustrations, Fig. 1 of which gives a longitudinal sectional view of the apparatus, while Fig. 2 is a cross section through A B. The object of the designer has been to produce a silencer in which the gases shall have every facility for expansion without meeting with obstructive baffle plates. For cars from 8 to 12-h.p. the silencer takes the form of a cylinder 21 in. long by 6 in. diameter. Within the cylinder, which is made of seamless brass, are three hollow aluminium bulbs fitting closely together by means of flanged faces, and held to one another by the bolt seen in the illustration (the latter shows the three bulbs in one piece, but they are being made singly as above described). The exhaust pipe terminates in a nozzle, in which are 20 5-16 in.

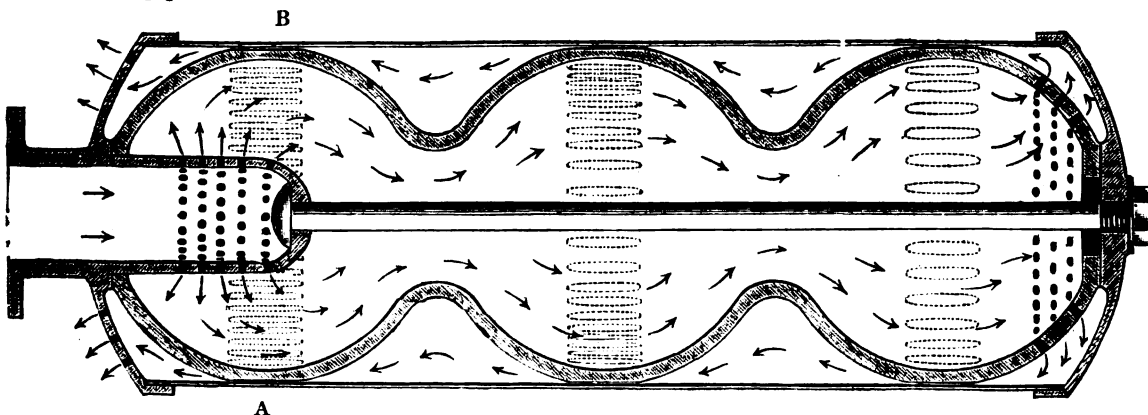


Fig. 1.—Longitudinal Section of Silencer.

holes, inside the first bulb. The latter fit tightly in the cylinder, but at the point of contact with the latter short narrow grooves are cut in the outer surface of the bulbs, these forming the passages between the cylinder and bulbs shown in black in the cross section (Fig. 2) and indicated in dotted lines in Fig. 1.

Coming now to the action of the device, the exhaust emerges from the side holes in the nozzle into the first bulb, where they undergo a first expansion; to be again contracted ere passing into bulb No. 2. A further expansion here takes place followed by contraction and then expansion in bulb No. 3. From the latter the gases emerge through the holes into the space between the bulbs and the cylinder and then pass through the channels formed in the outer surface of the bulbs. This process of expansion and contraction alternates until the gases pass into the atmosphere and through the holes in the nozzle end of the cylinder with little or no pressure and without the usual obnoxious odour and noise. Not the least useful feature of the apparatus is the facility with which it can be taken apart for cleaning purposes. After disconnecting the exhaust pipe the two ends of the cylinder can be removed by unscrewing the nut on the end of the bolt removed, when the nozzle and three bulbs can readily be withdrawn. We may add that the new silencer is also being made in sizes suitable for motor-cycles.

SIR THOS. FRAKE has recently purchased a 35-h.p. Panhard car from the British Automobile Commercial Syndicate, Limited.

THE EFFICIENCY OF THE FAN.

WHEN the fan as an auxiliary to the water cooling apparatus of petrol motor-cars was first made use of many criticisms were levelled at it. The first charge was that it was unnecessary as well as inefficient. Next, it was asserted that it was unmechanical, inasmuch as it imposed extra labour upon an already overworked part—the engine. With the latter charge we shall not deal, further than to remark that in this case, as in so many others, theory is apparently not borne out by practice. If the regular cooling apparatus does not perform its function properly, and the engine becomes overheated in consequence, a remedy of some sort must be provided, and while a fan may be unmechanical in principle, it is undoubtedly, if it performs the duty allotted to it, a highly important adjunct and vastly better than no remedy at all.

The thing to determine, therefore, is whether fans are necessary with some cars. It is self-evident that no maker would fit one unless he felt apprehension that the ordinary method of cooling the water, be it by cellular or tubular devices, would on occasions fail to keep the water down to the desired temperature. In all probability he knows that such is the case. What is of most importance, therefore, is whether it successfully accomplishes the task set it. There is some data touching on this point available, sufficient to almost conclusively establish the contention of the advocates of fans, authenticated cases having

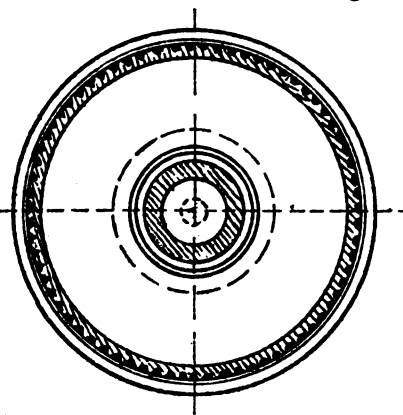


Fig. 2.—Cross Section of Silencer through A B.

been instanced where heating of the water in the cooler proved, upon investigation, to be due to the stoppage of the fan in consequence of some disarrangement of its operating gear. The cooling apparatus performed its other functions in a normal manner. The water was conveyed to the water jacket of the engine, thence returned and cooled so far as this could be done without the aid of the fan. But the latter having stopped, the water did not cool, and the engine heated and gave trouble. It is to be regretted, remarks the "Horseless Age," that a more exhaustive examination of the subject—through observations of a number of fan-equipped cars—is not possible. Perhaps in time it will come about, in which case probability will give way to certainty. But our present knowledge is sufficient to prevent any further talk of the dismissal of the fan as "unmechanical."

MR. JOHN MALCOLM has opened a garage for automobiles at Bilsden, Cockburnspath.

THE Century Engineering Company have acquired the entire business and works of the Century Engineering and Motor Company, Limited, at Cumberland Park, Willesden Junction, W. Mr. R. W. Leader will manage the concern.

THE Roots 5-h.p. oil car, which so successfully carried the heavy mails between Newcastle and Sunderland at Christmas, has been engaged nightly for four months in the postal service in the north. Thus far, it has travelled 14,400 miles with satisfactory results to the authorities, a severe test of reliability.

THE ELECTRICAL FITTINGS OF CARS.

By R. W. BUTTEMER.

IN the early days of automobilism—which some of us yet look back to with a feeling of regret—the question, when we went out, as to what would happen before we returned, was a perennial source of interest. But now, if anything happens (and we seldom admit it does) it is, in nine cases out of ten, due to tyres, ignition, or police; and if the latter be barred, the odds are on the ignition. This, in fact, including under that head all the electrical appliances necessary to it, is more unfamiliar, in the absence of special training, to the average motorist than the mechanical details of a car, which must be my apology for the following rather elementary collection of notes and hints on the subject.

As ignition by accumulators and coil is far more universally in use than that by magneto generators, I will confine my remarks for the present to this form. And first as regards accumulators. These are at best somewhat fragile and tender articles, and it is really surprising how satisfactory they are under very far from ideal conditions of work and attention. The majority are of the pasted-plate type, and vibration combined with irregular charging is apt to lead to the separation of the active material from the plates. As long as this has room to settle, as powder, at the bottom, little harm is caused, and it would be advantageous if more clear space were left below the bottom edges of the plates for this purpose; but if this powder, or larger fragments, succeed in making contact between two plates, short-circuiting and consequent running down is the result.

The only remedy is a thorough cleaning out, fresh acid, and recharging, which generally involves removal of the plates, though sometimes in celluloid-cased ones it can be managed without.

The acid should always be kept above the level of the top edges of the plates; neglect of this, more frequent in those cells in which a gelatinous electrolyte is used, leads to sulphating. In stationary accumulators the loss of liquid is chiefly due to evaporation, so water alone is needed to make up the level; but on cars, the chief loss is due to splashing, and fresh acid is required. This may be made up by mixing one part of sulphuric acid—pure “brimstone” acid, *i.e.*, acid made from sulphur, and not from iron pyrites, should alone be used—with about four parts of water. The specific gravity of the mixture should be 1.18. Convenient hydrometers for testing this, enclosed in a pipette, can be got from most instrument makers for about four shillings.

If an accumulator is left long uncharged, it is sure to deteriorate; and as it runs down gradually by leakage, it should, even if not used, be recharged every month or six weeks, as a rule. If a cell charges all right, showing the necessary 2.2 to 2.5 volts per cell, but soon runs down, it is either due to internal short-circuiting unless external ditto exists, which should not occur, *i.e.*, generally to loose paste falling between the plates, or else, and perhaps this is more common, to sulphating. The outward and visible sign of this, when the plates can be seen, is a white scale on them, which enormously reduces their capacity. There is no cure but, in mild cases, frequent and repeated charging, or, in bad ones, removal and scraping of the plates; but the addition of ten grains of washing soda to the pint of acid solution is to some extent a preventive of it.

It is perhaps superfluous to remark that the terminals and top of cell should be plentifully rubbed with vaseline to prevent corrosion and creeping of acid, and where the cells are in a metal case, as often on cycles, blotting-paper soaked in washing-soda solution and subsequently dried is a useful packing round them.

Coils now are of such good quality, as a rule, that there is little to say regarding them. A large proportion are furnished with one or other form of quick-break trembler, and sometimes these, especially the B. and M. type, give some trouble in adjustment. In the case of this latter, it is generally due to the black

soft iron armature being a little too far from the end of the ore, which is only adjustable by careful bending; while in one case that came under my notice it was due to some of the numerous little rivets uniting the parts of the trembler not being riveted up tightly. Of course one should be assured that the adjustment of the trembler screw fails utterly to mend matters before setting to work on the trembler. The wiring of cars is generally better carried out than it used to be, but too often the wires are carried in positions where oil is thrown on them from the mechanism. This should always be avoided, or some additional protection given them, as oil ruins the rubber covering. Perhaps the neatest is vulcanised fibre tube, which can be obtained in suitable sizes, and allows of some bending by the aid of moist heat.

As to plugs, their name is legion, and whereas most of them are good, those that have a large extent of surface between the two sparking points, obtained by a cavity or ridge in the insulator, such as the Oleo and Pognon, are particularly useful where an engine persistently soots its plugs.

A most useful electrical fitting is a four-volt lamp with a yard or so of flexible connection, which, besides serving to some extent the purpose of a voltmeter, is most handy for inspection purposes at night. Such a lamp uses about four-fifths of an ampere, and an ordinary thirty-ampere hour accumulator would therefore light it for about thirty-seven hours. Under these circumstances, and considering the propensity of the common tail-lamp to go out or leave its bracket for a journey on its own account, it may be considered whether an electric tail-lamp of this kind may not be worth adopting under the new regulations, and one might hint that a suitable, not too high, resistance, capable of being switched in or out of circuit, might be added to cut the light down to the very lowest limit that a decent respect for the law permits.

THE Austrian Automobile Club has appointed a committee to arrange for a club tour from Vienna to Homburg on the occasion of the Gordon Bennett race.

MESSRS. THORPE AND SALTER, 235, High Holborn, W.C., and St. George's Works, Eden Grove, Holloway, N., have equipped themselves for the repair of motor-cars, etc.

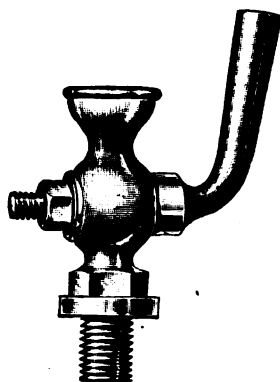
GOODALL'S AUTOMOBILE AGENCY has been appointed sole agent for London and the Home Counties for the “Achilles” cars of Messrs. B. Thompson and Co., of Frome, Somerset. The cars are being built in various sizes, including 6, 8, 9, and 12 h.p., every part, with exception of the ignition equipment and tyres, being of the firm's own construction.

MOTORISTS are always interested in any new departures which will tend to lessen their pneumatic tyre bills, and therefore some particulars of the products of the Glasgow Motor Tyre Company may not be out of place. This concern claim that they have got over the difficulty of punctures with Cassell's non-puncturable band, in conjunction with a special corded fabric with which they line the tyre; they go so far as to guarantee tyres provided with these to be as reliable as solids, and claim that the band and lining does not in any way affect the resiliency and comfort which are the distinguishing benefits of pneumatic tyres. They have sent us two sample sections, one of the fabric of a beaded-edge tyre showing that the tyre is rebuilt from its foundation; the other is a section of the tyre built up in the Glasgow Company's special way. First there is a thick tread of para-rubber; next to this is a whitish insertion; this is asbestos, preventing the inner tube heating; then comes the canvas lining of the tyre, after which is the non-puncturable fibre-band vulcanised in position; next and last is the inside lining of the special-corded fabric, which is said to stand a pressure of 300 lbs. to the square inch. This lining is brought round the beaded edges of the tyre, thus preventing, it is claimed, side bursts, in addition to strengthening the bead. We have not so far tested the band and lining ourselves, but from various sources we have evidence of it having proved successful in practice.

HERE AND THERE.

THE Local Government Board have advised the Oswald-twistle Urban Council that under their present powers they cannot purchase motor omnibuses for passenger traffic.

MESSRS. G. T. RICHES AND CO., of 4, Gray's Inn Road, W.C., are introducing the useful little fitting for petrol motors illustrated herewith. It is a combination compression release tap and paraffin valve, the top being cup-shaped to enable a small quantity of paraffin or petrol to be injected into the cylinder to unstick the piston rings. The tap is provided with the De Dion thread.



THE Board of Agriculture inform us that the Ordnance Survey have recently issued a folding pocket map of Saffron Walden and the surrounding district. This is one of their useful series of maps of certain areas in England and Wales on the scale of two miles to one inch, to which appreciative reference has already been made in these columns.

THE date of the first meeting of the Motor Van and Wagon Users' Association has been provisionally fixed for Wednesday, the 24th prox.

MESSRS. R. REYNOLD JACKSON AND COMPANY, of Knightsbridge, are removing, after the 1st prox., to 11 and 13, High Street, Notting Hill Gate, W.

A PUBLIC motor service across the island of Porto Rico, from Ponce to San Juan, has lately been established. Connection is to be made with the steamers from the United States, and the Government mail carried.

FORT RINGGOLD, a U.S. military post in Texas, which is seventy-five miles from Hebbroville, the nearest railway station, is to be supplied with fresh vegetables and other perishable necessities by means of a motor-wagon.

THE value of the exports of motor-cars and accessories sent from the United States during the eleven months ending with November last is returned at £283,896 as against £205,216 in the corresponding eleven months of 1902.

A PHOTOGRAPH that has reached us illustrates what some agents can do in the way of handling motor-bicycles even in mid-winter. It depicts a consignment of twenty Rex motor-bicycles which had just arrived outside the premises of Mr. H. Garner, Nantwich, Cheshire.

MESSRS. JOHNSON, HURLEY AND MARTIN, Gosford Street, Coventry, make a speciality of launch and high-powered motors. In going through their works we recently noticed a four-cylinder 24-h.p. launch-motor under test and a four-cylinder 34-h.p. motor for railway trolley work in course of construction.

THE Coventry Motor Fittings Company, Coventry, have removed to larger and more commodious premises, situate in Lower Ford Street, their old factory being too small to cope with the growing demands of the trade. This firm make a speciality of radiators, lubricators, bonnets, etc.

THE Milnes-Daimler omnibus which the Brighton and Hove Omnibus Company intend running between Brighton and Portslade has arrived at the popular seaside resort. Apparently there will be more motor-buses on the road before long, the company's motor shed at Hove being built to accommodate four.

A VERY complete catalogue of the latest models of the Chenard and Walcker cars has been issued by the Weston Motor Syndicate. The various novel features of these vehicles, notably the valve control, radiator and carburettor, reference to which has already been made in these columns, are fully described and illustrated.

THE Aix-les-Bains "automobile week" is this year to be held from 22nd to the 31st May next.

MR. A. G. MOFFAT was the first Swansea motorist, and the machine he rode in January, 1899, is still running.

ON the Daytona Beach, Florida, on the 2nd inst., Mr. Charles Schmidt, with the Packard "Gray Wolf" racer, established a number of new speed records. The American mile record was reduced to 46.25 seconds; the American kilometre record to 31.15 seconds, and the five mile American record for cars under 1,800 pounds to 4 minutes 21.35 seconds.

L'AGENCE GENERALE DES AUTOMOBILES FRANCAISES, LTD., has been registered with a capital of £15,000 to carry on the business of wagon, carriage, motor-car, cart, and cab builders, etc., builders and manufacturers of and dealers in launches, yachts, ships, or boats, and to construct, on the Thames or elsewhere, a dock, with patent and other slips, workshops, buildings, machinery, warehouses, and other conveniences.

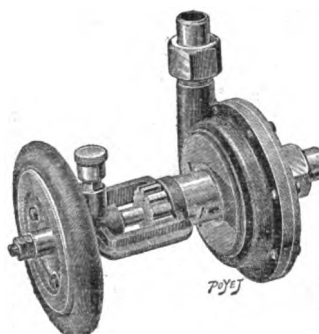
THE Columbus Motor Vehicle Company, of Columbus, O., U.S.A., has entirely departed from its previous practice in the design and construction of its cars, and for the 1904 season is bringing out a light touring car driven by a four-cylinder vertical air-cooled motor of 20-h.p. placed under the conventional bonnet. The makers claim that the engine has an unusual amount of radiating surface on the cylinders, each of which is said to have 650 square inches of cooling area.

SATISFACTORY trial trips with the motor-battery wagon and forge built as an experiment for the U.S.A. Army, and illustrated in a recent issue, have been made in Washington. Officers have driven the machine up and down all the steep hills in the vicinity of the Capitol, while at Fort Myer a practical demonstration of its value as a travelling forge was made in the manufacture of horseshoes. It is intended to send the wagon with a battery of field artillery on a practice march through the country in the spring.

IN view of the recommendation by the Local Government Board requiring powerful acetylene head lights to be provided with some means of diminishing the brilliancy when driving in crowded thoroughfares, Messrs. J. G. Statter and Company ask us to mention that some months ago they brought out a head light provided with an arrangement meeting this requirement. The screen which lessens the light is controlled from the driver's seat, and the arrangement has, we understand, given great satisfaction in practical working.

MESSRS. GROUVELLE AND ARQUEMBOURG, of Paris, who make a speciality of fittings required in connection with the water circulation of petrol motors, have recently introduced the centrifugal pump illustrated herewith. It is made in three sizes

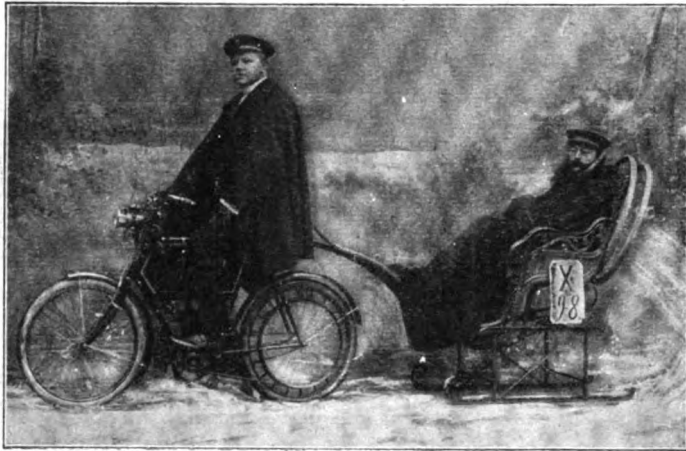
suitable for engines of from 6 to 30-h.p. The pump, which is fitted with a chrome leather or rubber-covered friction wheel, is intended to be driven off the fly wheel of the engine, and, in the case of the 6-h.p. type, will deliver thirty-nine litres of water per minute at a speed of 3,000 revolutions.



THE other day we had an opportunity of going over the extensive premises of Messrs. Friswell, Limited, in Albany Street, N.W. It is some time since we made a tour of the building, and in the meantime many alterations have been made. One department has been beautifully fitted up as a show room for motor clothing, while, in addition to the garage, auction room, and accessories department, there are departments for mechanical repairs of all kinds, carriage body painting and upholstering, etc. The building is lighted throughout by electricity, which, by the way, is generated on the premises.

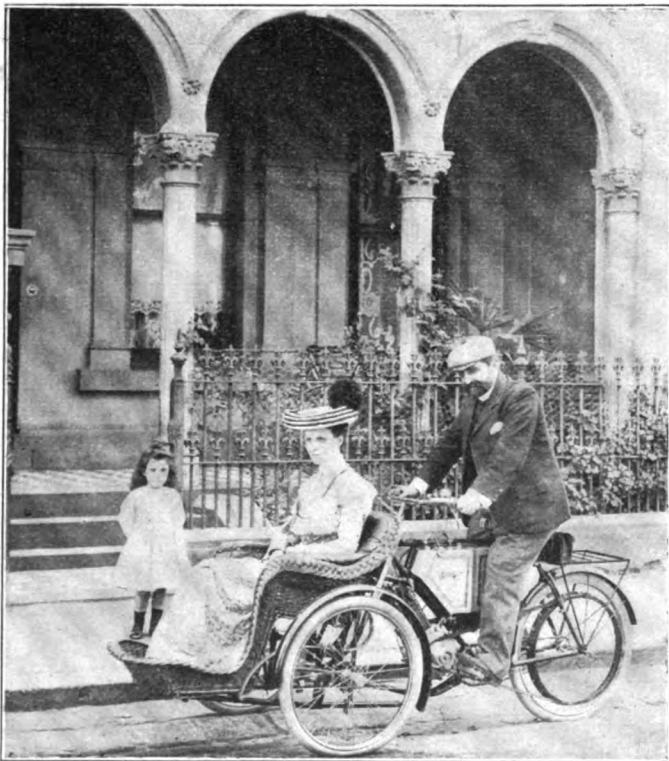
MOTOR-CYCLING NEWS.

At the last meeting of the Kildare County Council a discussion took place in connection with the regulations under the Motor Car Act. After a lengthy debate as to the powers of dealers to allow customers to use their identification marks, the Secretary said he had an application the other day from a man



A German motor-cyclist—Herr J. Smeddinck—has recently devised the novel combination of motor bicycle and sleigh depicted above, and with which he is stated to have recently made the journey from Munster, in Westphalia, to Amsterdam. Judging from the two wheels carried behind the trailer it would appear that the sleigh under-carriage of this can be removed and the wheels fitted in their place whenever desired.

whose motor-tricycle weighed four cwt. That was as heavy as a small motor-car. He thought when over 3 cwt. it ought to be registered as a motor-car, because the power of that must be four or five horse power. The matter was referred to a committee.



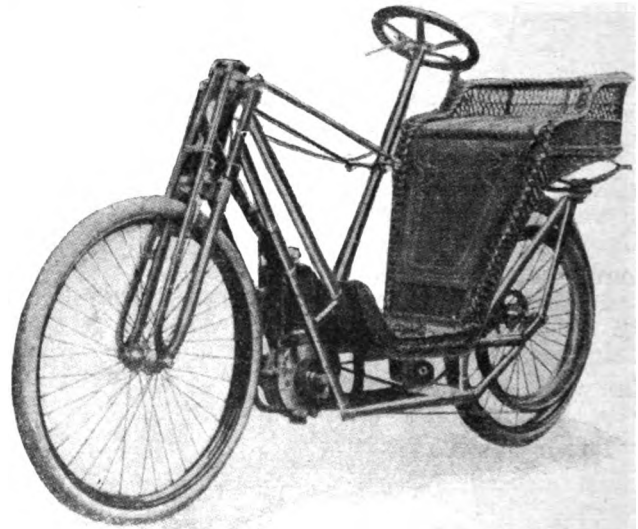
ONE of our Australian readers, Mr. E. Phillips, writes us as follows:—"In semi-tropical or tropical countries pedalling a cycle up-hill in the hot months is too fatiguing. The photo sent you under a separate cover shows an 'Excelsior' in Australia. It was a present to the writer who is in the saddle, and

Mrs. Phillips in front, from his brother in London. In this country of vast distances such a means of conveyance is of inestimable value. Though Australia's bush roads are not as flat as a pancake, yet the 2½ h.p. machine photographed will take some of the roughest without panting."

MESSRS. JOHN C. FULLER AND SON, of Bow, E., are bringing out a new size of their mercury-bichromate battery specially intended for the recharging of the ignition accumulators of motor-cycles. The capacity of the new set is equal to charging a couple of 20 ampere-hour accumulators, or an equivalent number of spare accumulators, in succession, without itself requiring to be recharged. It is supplied complete with the necessary materials for charging, and requires no attention while the process is going on.

THE motor-bicycle has found a welcome among the natives of Ceylon, who appreciate the rapidity with which it can "swallow" distance. Mr. G. Thain Davidson, of Morawak-korale, who lives fifty miles from a railway station, finds his machine extremely useful.

A NOVEL form of motor-bicycle has recently been completed by M. Meijer, of Velp, near Arnhem, Holland. As will be seen from the accompanying illustration, the rider, instead of having to mount a saddle, is provided with a comfortable spring-supported seat and footrests, available for a lady or gentleman.



The frame is of strong and rigid construction. The wheel steering connections are clearly shown in the illustration; the accumulators and coil are located under the seat, while the petrol tank is behind the basket-work piece between the seat and foot-board. The power of the motor is transmitted to the rear wheel by a belt, in conjunction with which is a jockey pulley controlled by a hand lever. In addition to enabling the belt to be held clear of the basket work, the jockey also permits of the belt being kept at the requisite tension, and to allow a free engine. Thus the motor can be started by a handle before mounting. The maker claims the machine to be as easily controlled as an ordinary motor-bicycle and at the same time much more comfortable.

WHEN ignition wires are cut exactly to length and fitted in position the ends should be twisted up tight, and sweated up solid with soft solder, using resin only as a flux. All the wires on the top bar, when connected to the two-way switch, should be screwed very firmly, lest the screws might work loose through vibration.

IN accordance with the resolution of the Bloemfontein Convention, a tariff preference of 1½ per cent, on British motor-cars is given.

OUR DIRECTORY OF "NUMBERS."

[ALL RIGHTS RESERVED.]

Below is our second instalment of Motor Car Numbers. This List will be continued weekly, and Motorists who have not yet communicated with us are invited to forward their Names, Addresses and Numbers, with any observations they can offer as to the working of the new Act.

Newlyn, Henry, J.P., Royal Exeter Hotel, Bournemouth...	E.L.	1
Neill, John, Keills, Lochgilphead	S.B.	2
Nye, F. H., Broadwater, Worthing	C.D.	1
Newington, Frank E., Ticehurst, Egerton Park, Rock Ferry	C.M.	4
Newall, Capt., Liphook	A.A.	272
Neame, Gerald T., Kilshane, Cole Park Road, Twickenham	H.	163
Neame, Harold B., Kilshane, Cole Park Road, Twickenham	H.	117

Ogston, A. G., Ardree, near Aberdeen	S.U.	1
Oswald, George H., Winsley Chase, near Bradford-on-Avon	F.B.	36
Ogston, Dr. Alexander, 86, Rosemount Place, Aberdeen ...	R.S.	11
Orton, Dr. G. H., 7, Campden Hill Road, Kensington, W.	A.	48
Owen, William, Wolverhampton	D.A.	11
Onions, J. T., Wolverhampton	D.A.	31

Price, T. E., Upwell, Wisbech	E.B.	3
Parker, W. F., 68, St. Giles, Oxford	F.C.	26
Pickford, J. H., Clerk to Rotherham Rural District Council	E.T.	1
Plunkett, T. S., D.L., Portmarnock House, Baldoyle ...	I.K.	1
Pearce, Dr. A. Channing, Chartham, near Canterbury	F.N.	1
Preston, E. U., Shirley Hurst, Shirley, near Croydon	B.Y.	1
Parry, Mrs. Branksome, Palatine Road, West Didsbury ...	N.	175
Pinder, William, The Avenue, Linthorpe, Middlesbrough ...	D.C.	2
Phillips, J. A., Mansfield Villa, Stoke, Coventry	D.U.	8
Pughe, Rev. K. U., Drigg, Holm Rook, Cumberland ...	A.O.	11
Peake, C., The Sycamores, Whitkirk, near Leeds	U.	33
Portwine, John, 25, Lancaster Road, West Norwood, S.E.	A.	76
Perry, H. A., 22, Western Road, Brighton	C.D.	6
Price, A. E., Wolverhampton	D.A.	2
Parker, W. Howard, 2, Wellfield Road, Cardiff	B.O.	21
Parry, E. Morant, Caldicott, Mon.	A.X.	61
Plumbridge, A., Wheathill Lodge, Croydon Road, Anerley	D.	651
Powell, George Herbert, 79, Lemon Street, Truro, Cornwall	A.F.	21
Pickup, W. R., Scholes Bank, Horwich, near Bolton ...	B.	207
Parkinson, Mrs. E. K., 3, Havelock Street, Spalding ...	D.O.	10
Plummer, W., 16, The Crescent, Maidenhead	E.Y.	19
Pattison, B., 294, Kennington Park Road, S.E.	A.	1088
Pattison, C., 294, Kennington Park Road, S.E.	A.	1089
Pattison, F. C., 294, Kennington Park Road, S.E. ...	A.	550
	A.	551

Roberts, Capt. W. J., Oak House, Dudley	F.D.	1
Rhodes, S. R., Wolverhampton Automobile Club	D.A.	1
Ramsay, W., The Bungalow, Dyce	S.A.	1
Robertson, D., 1, Hermitage Place, Leith	W.S.	11
Rawson, Lt.-Col. R. H., Woodhurst, Crawley, Sussex ...	B.P.	15
Richards, G. B., Ashbridge Road, Leytonstone, E. ...	F.	290
Ryman, G., 20, Devonshire Street, All Saints, Manchester	N.	314
Rich, Harry, Helford Villa, Redruth	A.F.	9
Rich, William, Trevu, Camborne	A.F.	31

Robinson, H., 318, Harrow Road, Paddington, W. ...	A.	345
	A.	655

Robinson, J. Hedley, 31, Percy Gardens, Tynemouth ...	X.	4
Robinson, Joseph, Ingleside, North Shields	X.	42
Robinson, Walter, Addycombe Villa, Rothbury	X.	46
Russell, Earl, Raymond's Buildings, W.C.	A.	1
Reading, G. F., Bridge Street, Burton-on-Trent	F.A.	1
Russell, T. W., Holmfield, Ripon	C.	71
Rogers, J. G. F., High Street, Malpas, Cheshire	M.	105
Roberts, John and Sons, Bridgwater	Y.	28
Rodger, Dr., Yeltielin, Kelso, N.B.	K.S.	2
Ronaldson, Dr. J. B., Ennerdale, Haddington	L.S.	1
Robinson, M. A., Richmond Street, Londonderry ...	U.I.	1
	U.I.	3
Rogers, W. E., Rugeley	E.	27
Rhodes, Mr., Halifax	C.P.	9
Roberts, Dr., St. Albans, Herts.	A.R.	57
Rowe, W. F., Cliff House, Penzance	A.F.	35

Street, F. 23, High Street, Hitchin	A.A.	15
Somerville-Large, P. T., Carnalway, Kilcullen, Co. Kildare	I.O.	1
Smith, C. A., The White Lion Hotel, Cobham, Surrey ...	A.	576
Smith, Edwin, Avenue Bank, Kirkdale, Sydenham, S.E.	A.	14
Smith, H. B., Ferndale Cottage, Cliftonville, Margate ...	D.	87
Searle, A. H., Canterbury Villa, Flitwick, Ampthill ...		
Stent, A. L., Havant, Hants	A.A.	108
Stent, A. and Sons, Havant, Hants.	A.A.	137
	A.A.	138

Scott, A. T. H., 18, Rylett Crescent, Shepherd's Bush, S.W.	A.	63
Scott, Henry, Brentwood, Rochdale	D.K.	8
Stainthorpe, W. W., M.D., J.P., "Lulworth," Saltburn ...	A.J.	9
Sylvester, Rev. W. C., Chitterne Vicarage, Codford, Wilt.	A.M.	61
Simpson, Robert, Pettigrew, Ardmore, Sligo	E.T.	1
Sheldon, P. J., County Surveyor of Essex	F.	1
Streatfield, Capt. H. S., Ryhope Hall, near Sunderland ...	V.	1
Sandwich, Earl of, Huntingdonshire	E.W.	1
Smith, A., Midland Road, Thrapston	B.D.	1
Scrutton, Councillor C. E., West Ham	A.N.	1
Smith, R. J., Hon. Sec. Scottish Automobile Club, Glasgow	G.	1
Smith, Harold, Netherheys, Colne, Lancs.	B.	2
Stanton, H. V., 41, North Street, Dudley	F.D.	2
Smith, S., 20, King Edward's Road, Birmingham	O.	78
Shaw, W. P., Keewaydin, Prenton Hill, Birkenhead	M.	20
Stent, H. C., Acton Engineering Works, Acton Vale	H.	175
Spanton, W. D., Chatterley House, Hanley	E.H.	5
Storey, J. A., Underfell, Lancaster	B.	59
Smith, P. Caldwell, M.D., Dryburgh House, Putney, S.W.	A.	125
Spowart, Rev. James, Lambourn, Berks	B.L.	70
	S.Y.	14
Stitt, Charles Alfred, Hornelen, Cluny Gardens, Edinburgh	S.Y.	2
	H.	87
Staley, Alfred E., 27, Duke's Avenue, Muswell Hill, N. ...	D.P.	3
Stansfield, F. W., M.D., 120, Oxford Road, Reading ...	B.J.	28
Smith, H. C., 154, Denmark Road, Lowestoft	A.E.	170
Smith, Graham, 38, Chesterfield Road, Bristol	E.X.	8
Shalders, C. E., 43, Northgate Street, Great Yarmouth ...	B.Y.	8
Smith, R. F. W., 20, Broad Green Avenue, West Croydon }	B.Y.	9
	D.A.	16
Scott, J., Wolverhampton	A.	1409
Slee, Arthur F., Rowanhurst, Atkins' Road, Clapham Park	F.	175
Swann, Arthur, Brunswick Hotel, Clacton-on-Sea	F.H.	55
Stretton, A. C., 4, Worcester Street, Gloucester	C.H.	15
Simkiss, James, Derby	I.K.	21
Sexton, William, Dublin	M.	38
Stubbs, Thos. J., Forton Bank, Winsford, Cheshire ...	E.	13
Stevens, W. H., Rugeley	C.P.	8
Sagar, E., Halifax		
	H.	189
Taylor, J. Hay, Bleak House, Wightman Road, Hornsey, N.	E.E.	1
Tickler, T. G., Grimsby	B.	180
Threlfall, A. P., Moorlands, Colne, Lancs.	B.L.	263
Theobald, Claude J. T., Sutton Courtenay, near Abingdon	A.N.	24
Tupper, H. F., 10, Gurney Road, Stratford, E.	M.	81
Taylor, Frank W., The Firs, Lingdale Road, West Kirby ...	H.S.	1
Todd, W., Lithgow, Drums, Langbank, Renfrew	H.	71
Thompson, Oscar, 17, Seymour Street, W.	C.P.	6
Thomas, Mr., Halifax		
	C.R.	31
Vincent, W., 4, Cavendish Grove, Avenue, Southampton ...		
	S.R.	1
White, A. M., Middleton, Friockheim, Forfar	A.R.	72
Wickham, Dennis, Ware, Herts.	A.E.	135
Willows, C. E., 92, Queen's Road, Clifton, Bristol	E.B.	1
Welchman, W. W., Upwell, near Wisbech	H.C.	9
Woodward, J. V., "Naimi-Tal," Belper Road, Derby ...	C.Y.	25
Williams, John, 71, High Street, Swansea	E.C.	16
Walker, B., The Grotto, Kirkby-Stephen	A.L.	75
Watson, Henry Norman, The Post Office, Tuxford, Notts	E.C.	1
	E.C.	2
Wilson, C. W., Rigmaden Park, Kirkby Lonsdale	C.B.	1
Woods, G. H., Vine House, Revidge Road, Blackburn ...	D.K.	1
Walker, Robert, Fairlight Villa, Spotland Road, Rochdale...	B.A.	1
Wheatcroft, Councillor F. W., Salford	A.B.	1
Walker, Lieut.-Col., Worcester	D.U.	1
Welch, C. K., Park House, Warwick Road, Coventry ...	C.P.	1
Wright, Dr. Crossley, Halifax	D.W.	1
Watson, Geoffrey L., Newport, Mon.	E.D.	1
Woods, Edwin, Longford Wire Co., Limited, Warrington ...	W.	13
Watts, W., Sheffield	E.K.	28
Walls, James H., Westby House, Hall Lane, near Wigan...	A.	1105
Walford, H. R. S., 120, Finchley Road, N.W.	K.I.	1
Waterford, The Marquis of, Waterford	H.	100
	H.	101
Wainwright, Dr., Pembury Lodge, Tottenham	E.T.	4
Woodman, J. U. S., West Leigh, Rotherham	C.M.	17
Warren, H. B. G., 12, Hamilton Square, Birkenhead ...	T.S.	1
Watt, Alex., Primus Villa, Arbroath Road, Dundee ...	F.	205
White, F. I., King Edward's Avenue, Chelmsford	C.W.	3
Watts, J., Burnley	A.	498
Wybrant, A., 56, Portman Mansions, W.	C.	23
Wadsworth, G. B., Bank View, Goole	O.	255
	O.	256
Wynn, W. Lea, 2, Barnsley Road, Edgbaston, Birmingham }	A.	2
	W.	135
Waterlow, David S., L.C.C., Spring Gardens, S.W. ...	C.P.	1
Whitehead, H., 94, Middlewood Road, Sheffield		
Wright, Dr. Crossley, Halifax		
	D.A.	3
Young, Trevor F., Wolverhampton	F.E.	20
Yeates, John, Carholme Road, Lincoln		

(To be continued.)

CORRESPONDENCE.

BENZ V. LIGHT CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with very great interest the letters in your *Journal* "Benz v. Light Cars," more especially Mr. Hay Taylor's. I fully endorse his remarks with one exception, *re* mechanically-operated inlet valves. Since I have fitted mine up I have experienced a great increase of power, especially on hills, and long slight gradients where I used slow speed my car will now take them on top speed. The fitting of a plate inside cylinder I strongly condemn as useless. I had one in my car when I purchased it, and as I seemed to be short of power I took it off to see the result without it, and the difference was so marked that I keep it now as a curiosity. I think the greatest fault with a 3½-h.p. Benz car is the crippled exhaust silencer; this is far too small, and I found this out as follows:—One evening, about eighteen months ago, I had a call to Selby, and on the way my silencer dropped off. Being in a hurry I did not trouble to pick it up, so on I went, and was rather surprised to find I had never run so easily before, and had such an increase of power, although more noise, which did not trouble me. I found the silencer on my return. I soon after set to designing another, which I still run with; it is 9 inch diameter by 15 inches long. Some will say, I have no doubt, a big affair, but it is not any more noticeable than the old one, and at the same time gives far better results, and with it my exhaust is hardly audible. I contend that a 3½-h.p. Benz is a useful little car, and, although slower than many others in a tour, it will often come home in good time, leaving others more powerful behind for repairs, etc. It is a case of "slow but sure wins the race."

The severest test I have put my car to was a 3½ days' tour through the Dales, starting from York in the middle of May last at 9 a.m. in pouring rain. I went by way of Wetherby, Harewood, Otley, Skepton, Settle, and Ingleton to Windermere, and by Sedburgh through Wensleydale by Askrigg, Leyburn, Bedale, and Borobridge to York, and it rained nearly the whole time. We covered 200 miles and reached home by 3.30 p.m. on the following Saturday, and should have done better, but one of the front tyres came off and we ran home from Bedale on the rim. Surely that was not bad for a Benz. I am an engineer, and my humble opinion is that under good management and with the engine kept in good repair (I do all my repairs myself), an old two-speed Benz without crypto is as reliable as any small car on the market, and if those who have already expressed themselves in your columns on the subject, and also other owners, will keep their cars in good order and take as much care of them as a groom does of his horse, I think they should be able to make as good runs as I do.—Yours truly,

ARTHUR WADDINGTON.

DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In a recent number of your paper you mentioned the difficulty of obtaining efficient drivers of automobiles, and I notice in your issue of the 9th inst. an experienced driver writes to you pointing out that this is a mistake, and that many good men cannot obtain situations. Now, as an employer of drivers, I think myself that what you stated was absolutely correct, and when one refers to good drivers one means naturally responsible men who carry out their duties in all ways in a reasonable satisfactory manner. There is no real difficulty in getting men who can drive and steer an automobile. That is fairly easy, but to get a man who is reasonable and who will drive it in a proper way and keep it so that it costs the least possible amount for up-keep, that class of man I find it very difficult to get.—Yours truly,

S. F. EDGE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your remarks regarding the above in your issue of the 9th inst. you mention that the motor mechanic should remember that he is the driver and not the owner of the car on which he sits. I might mention that there is always this class of men in every sphere of life, no matter what vocation they follow. If some owners were more considerate to the drivers, the men would show more respect. We all know that the life of the motor driver is not so bright as it looks. He may have a bad car and his people keep nagging at him when the cause is often neglectful work of the builders or repairers' workmen. I say this because I have experienced it more than once. When I have my employer's car at the shop for overhauling, I do part of the work myself and watch that others do not do slipshod work on the car.

I have seen masters who own some very good cars, and, let them have who they like as a driver, they could not be pleased. I know a case on hand here in Scotland. One owner has had no less than eight men (Frenchmen, Englishmen, Scotchmen, etc.), in ten months. Happily the exception does not prove the rule, and, thank goodness, there are car owners in this land of ours who are really gentlemen. In a good many cases a feeling exists among owners that the mechanic cannot wash and polish his car as well as an ex-coachman. This is a square case of six of one and half-a-dozen of the other. I have seen coachmen who

could show you how to wash a carriage and I have seen mechanics who could show a coachman how to wash a motor-car.—Yours truly,

SUB JUDICE.

[Evidently the point we raised is of general interest, and the views of both owners and drivers will be welcomed for publication. Our correspondent suggests more consideration on the part of the master; does not that exist already? As a matter of fact, there is a view of the relations between the motor-car owner and his mechanic not generally made public. The latter receives more consideration from the owner, and is more closely in his society than the coachman or any other servant. Hence the good feeling which is necessary for the owner's real enjoyment of motoring, and unless the man reciprocates the confidence shown the pleasures of travel are minimised. Mr. Edge's experience is extensive and coincides very largely with our own.]

RED HOT EXHAUST PIPE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be glad if you, or some of your readers, could tell me why the exhaust pipe of my motor gets red hot so quick. A new nipple was put on not long ago, but to no good, and the engine will only run on little or no air. The car is a 6-h.p.—Yours truly,

BERKSHIRE.

[This trouble is undoubtedly due to too rich a mixture in the case of "Berkshire," although on almost all engines this is likely to occur, more especially when the car is stationary. We should advise a thorough examination of the engine to see that the compression and ignition are in proper condition, as if either of these are not right it would necessitate a much richer mixture, which in this case is no doubt the cause of the trouble.]

DIFFICULTY IN STARTING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Allow me to congratulate you on publishing a most useful up-to-date journal, not the least interesting feature of which are the letters from novices. We learn by others' experience. I may mention one little thing that does not seem to be generally known. Some machines (mine among them), are sometimes rather difficult to start if they have been idle a few days. I have found that if I put the mixture and ignition levers in proper position, shake the float of the carburettor, hold the inlet valve open and give the starting handle two or three turns of the same time, then switch on, the engine will start with the next pull on the handle. Previous to finding this out I have often been half an hour, with quite a little crowd round me, trying to start my machine.—Yours truly,

A. SWANN.

TIMING A TWO-CYLINDER CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Suspecting loss of power from improper timing of explosion, can you tell me how to correct this? On the front of my car is a pinion with two electric connections like tremblers. Do you call these commutators? If so, please tell me if the platinum points ought to touch the steel spring during the whole revolution of the pinion or only when the eccentric portion of the pinion is approaching. Is it wise to keep altering the tension of inlet valve spring, by readjusting the nuts on pin, in order to get more power?—Yours truly,

SIMON.

[The two connections on the front of the engine, which "Simon" terms "like tremblers," are usually known as "contact blades," the commutator being an insulated disc fixed on the two-to-one shaft, but this is only used in the case of a wipe contact. The blades ought only to touch the contact screw when the cam lifts them and not during the whole revolution of the engine, otherwise there will be great waste of current and also premature firing. It is very unusual to alter the tension of the inlet valve spring, especially if giving good results. Of course if backfiring occurs in the carburettor the valve spring may be at fault.]

DRY BATTERIES AND ACCUMULATORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I can strongly advise J. F. Fox to go in for dry batteries. I have now used them for the last two years, although being laughed at by my motor friends and called old-fashioned. When using accumulators I was always in trouble with the ignition, and I have not the least hesitation in saying that more than half the stoppages on the road are caused by the accumulators having a little bit of fun on their own. My engine always starts readily, and a misfire or failure of spark I am a stranger to. I am now running with three cells in series, which give about 4½ volts, with every satisfaction. My last set of cells ran the car till they were thoroughly exhausted, lasting about a year. When using accumulators I always had to be cleaning the platinum points on screw and trembler, as they got badly burnt and spotty, but since using dry cells I clean them once about every five to six hundred miles, thus saving expense of new screws and tremblers, which became necessary after cleaning them two or three times.—Yours truly,

D.651.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to Mr. J. F. Fox's letter *re* dry batteries in the last issue, I have on several occasions tried these, but in each pair found them to fail, although they were perfectly new on each occasion. Owing to this I have had to return to accumulators. Undoubtedly, if the dry batteries were somewhat improved, they would do away with a deal of trouble. I have never had any trouble whatever from my accumulator, but always make a practice of carrying a spare fully-charged battery. I myself think that a number of the ignition troubles are due to dirty contacts, as many users of cars never think of cleaning the wires and terminals; this, of course, would be sufficient to need extra voltage.—Yours truly,

T. F.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Dry batteries, in the writer's experience, are expensive, uncertain, and tricky. The expense is out of all proportion to that of a good accumulator; they deteriorate considerably by keeping, so that one cannot be sure of one's spare set, while it is more difficult to estimate how much one has left in them. It is also generally easier to find a place where one can get an accumulator charged than one where a good new battery can be obtained, when on tour. I agree to some extent with Mr. Fox that rather more powerful ignition arrangements would often be an advantage; but some of the coils in the market will stand being run with three accumulator cells, and if one has both sets of accumulators run down it is generally possible to get home by coupling up three of the cells instead of two, a resource not of much use with dry batteries, owing to their high internal resistance. Sufficient care is not always taken that accumulators on a car shall be as much as possible protected from vibration; slenderly-supported accumulator boxes, with the cells wobbling about inside them, are too common, with resultant spilling of acid, loosening of paste, &c. It did not strike me that dry batteries were much in evidence at the *Salon*, but charging dynamos on the car certainly were. Irregular and casual charging is the principal source of accumulator troubles.—Yours truly,

R. W. B.

BAND BRAKES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 9th inst. one of your correspondents, who signs himself "X," complains of the brake leather on his 16-h.p. Gladiator getting worn out in a very short time. I note that he speaks of the leather lining of the brake. If leather is used as a lining for the brakes, it is only to be expected that it will wear; the lining which we use on Gladiator cars is not leather, and if your correspondent will kindly communicate with me I shall be very pleased to forward him some lining of the correct material. His trouble is no doubt due to having had his brakes re-lined with leather instead of with proper material.—Yours truly,

E. H. ARNOTT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I do not think that "X" will find hard wood blocks to be satisfactory as a lining for his band brakes, as, if the brake is kept on for long at a time, the drum gets hot and the blocks will char from the heat. If he will try lining his steel bands with Gandy cotton belting he will have no further trouble. The Wolsley and other car manufacturers use this material exclusively.—Yours truly,

J. K. B.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to a letter in your valuable *Journal* of the 9th inst. under the above title, I can strongly recommend "X" to try lining his brake bands with Gandy's belting. This material can be obtained from The Gandy Belting Company, Queen Victoria Street, E.C., and is sold in various breadths and thicknesses. It is fitted to the bands like leather, no alteration being necessary. This material is on the differential brake of my 14-h.p. Brooke car, weighing 19 cwt., and I have used it for eleven months, daily driving about town and country over 6,000 miles. I would suggest to "X" that when descending a long hill it is good practice to use first the side brakes, then to change to the foot brake, so giving each less wear and time to cool down. I might add that I have used this belting twisted round the tyres, and find it acts as an anti-skid, but damages the wood felloes and soon cuts through.—Yours truly,

CLAUD WOAKES.

SPEED LIMITS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I believe that in the majority of cases where demand has been made for the further limitations of the speed of motor-cars, the main purpose of those advocating it is to prevent the automobile frightening horses. While instances are reported every now and then in which the disregard of the public rights shown by some few individuals has brought about a desire for this further restriction in speed, yet these cases are comparatively few in comparison with the number of "foot passengers" and motor-cars involved. It is quite possible to run a motor-car too fast, even on an

open road, for the safety of the occasional other vehicles to be met with. Moreover, the temptation to drive too fast, given a fairly good road, is much greater in this case than in the city, because of the greater distances, the absence of cross roads and the smaller traffic. But, although the temptation is greater, it is a distinct misfortune that it should be yielded to. Driving at a speed which is made reckless or inconsiderate by the attendant conditions is not less reprehensible in the country than in towns, and it can do quite as much to damage the prestige and check the progress of the motor-vehicle. Again, it may be very likely true that a horse is frightened more by the rush of a vehicle past him at high speed than when a policy of delay is adopted. This does not appear to be proved, however; and many motorists claim that their experience has been directly the contrary, arguing that they get well past the horse before his terror has time to develop. Whichever course a driver of a motor-car has found to frighten the animal less he should feel morally bound to pursue in all cases where a horse shows alarm. It must not be forgotten that the horse is our almost universal beast of burden. Many people could not discard him if they would, and if they did they would not be able to manage a motor-vehicle. The horse is with us of necessity more than of choice, and while the motor-car owner may pity the horse owner, he is yet bound to treat him with reasonable consideration.

The point I wish to make, however, is the futility of a legal speed limit on motor-cars as a preventive of horses being frightened and running away. Who, to begin with, is prepared to say that the equine species will usually take fright at a car driven, let us say, at fifteen miles per hour, but will not take fright at one driven at ten miles? And if this, or something equivalent, were asserted, what would be done with the intermediate speeds? In a large number of cases of trouble with horses, especially in the country, the blame lies with the driver of the animal, who is giving more attention to the motor-car than to his horse. Certainly a reduction in the former's speed would not diminish the number of "accidents" such as these. In many cases the horse will take fright even at a standing car with quiescent machinery. Considered simply as a means of preventing horses being frightened, a speed limit is certainly as crude a device as could well be imagined.—Yours truly,

CONCORDE.

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—"Puncture Tired" asked for the experience of any gentleman who had tried both solids and pneumatics on the same car; I give mine. My car is of good British make, and well sprung, having elliptic springs back and front, and I cannot attribute my broken axles to anything but the solid tyres, and I am very well satisfied with the change I made. Perhaps "Experienced User" resides south, where, I believe, the roads have far better surfaces than ours more north. I might say that my solids were not the Buffer.—Yours truly,

SOLIDS TRIED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have watched with interest the correspondence on the above subject. I quite agree with "Medicus," "Solid Satisfaction," and "P." as regards the solid tyres, but I find the great drawback to their use on Wolsley cars is that they are the cause of broken balls in the axles sometimes. I would like to hear from your correspondents, through the medium of your columns (as I know that it will be of interest to more than myself), if they had any difficulty in the matter of ball races on back axle, fitted with solid tyres; if so, how they have overcome it.—Yours truly,

ROLLER BEARING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been greatly interested in the correspondence appearing in your journal with reference to solid and pneumatic motor-tyres.

Several of your correspondents appear to be quite satisfied with solids, and I shall be very glad to know if any of them have solid tyres fitted to cars constructed with tubular frames.—Yours truly,

TONNEAU.

PICRIC ACID AND PETROL MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is so long since anything was heard of using picric acid in conjunction with petrol that I thought the idea had been dropped. I



Slow Progress.

see, however, from the "Motor Cycling Notes" in your last issue, that this is not the case, but that a Liverpool firm is making a device for use on motor-cycles, in which the petrol to be carburetted is passed through picric acid "when more power is required." I should be glad to hear from any motor-cyclist who may have used the device if the advantages claimed are borne out in practice. In fact, I am sure that the experience of any motorist who may have used picric acid would be interesting to your readers.—Yours truly,

A. J. H.

EXPERIENCES WITH PARAFFIN CARBURETTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

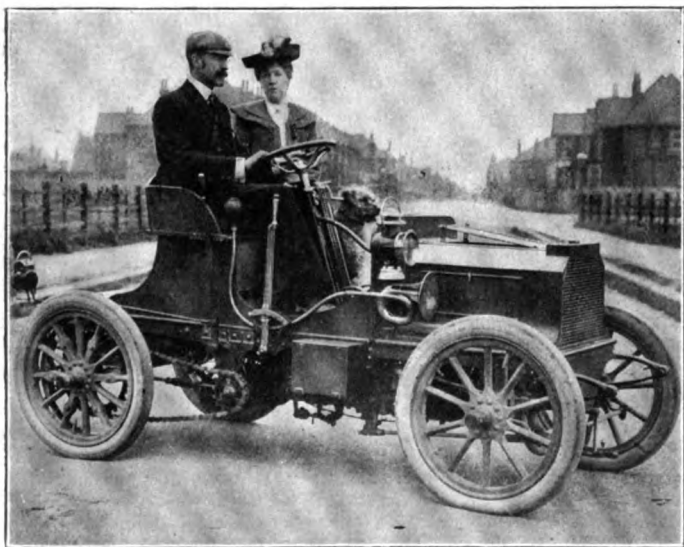
SIR,—I, like Mr. G. Maber, in last week's *Journal*, am thirsting for information respecting the "Trusty," or other paraffin carburettor. Perhaps the reader who is kind enough to reply will also say what the total cost of conversion would be, and the cost of running, compared with petrol? Also what would have to be done away with and the parts (such as tank, etc.) retained in a gear-driven Benz to effect the change from petrol to paraffin.—Yours truly,

A MAN IN BLUE.

AN AMATEUR-BUILT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I send you herewith a photo of my car H.23, which is of my own construction, and has a two-cylinder Aster engine and gear, tonneau body, the latter also built by myself. I ran the car 4,000 miles last year without one stop from engine troubles, the only delay being due to a burst tyre, which stopped me one and a half hours. I have always had a passenger



of one kind or another, and they can testify to the truth of this statement. I have long made a pastime of building model express engines; this gave me an idea to build a motor-car. I made the tubular radiator frame, steering pillar, brass tanks, bonnet, sprocket bearings, and fitted all parts with levers, etc., complete.—Yours truly,

W. BASHFORD.

SANDING ROADS IN AND AROUND LONDON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—No doubt many motorists, passing through London streets, have lately had cause to complain at the shameful way the authorities of the various boroughs, especially Marylebone and Westminster, have been sanding, or, I should say, stoning the roads during frosty or greasy weather. Instead of using a fine sand or crushed granite, as they have hitherto done, they have been using the coarse siftings of flint gravel, consisting of small flint pebbles, which when thrown down on the hard wood paving and asphalt splinter up into sharp, razor-like pieces under the iron tyres of buses and heavy vehicles. On returning from a half-hour's run, making calls round the West End, and covering not more than two miles, I abstracted not less than fifteen pieces of this flint from one set of tyres, which before leaving home were quite new. It is quite time steps were taken to stop this shameful practice; not only do motor-tyres suffer, but all vehicles, whether automobiles or horse-drawn, having rubber tyres on their wheels. I send a sample taken at random from the barrow from which the men were so-called "sanding the roads" in Great Portland Street, London, W., on Saturday, the 16th inst.

Anyone throwing glass, nails, or any other refuse likely to cause damage to horses or vehicles is liable by law to be prosecuted, and it appears to me that the borough authorities are causing equal offence in

this act. I trust your readers will do all in their power to oppose this. I, for my share, shall give in charge the next roadman I see throwing such material over the road outside my depot.—Yours truly,

E. J. COLES.

THE INVENTOR OF THE BAND SAW.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice that the invention of the band saw is attributed in one of your recent issues to M. Perin, of Paris. This is an error, as it was really the invention of an Englishman—one William Newberry, who, in 1808, patented a machine for sawing wood, in which an endless band or ribbon saw strung over two wheels was used. Owing to the difficulty, however, of obtaining saw blades that would withstand the strain put on them, the machine remained in abeyance for many years till M. Perin, about 1855, introduced a much-improved machine, on which he used specially tempered saw blades of French manufacture, and thus made the machine a practical commercial success.—Yours truly,

F. J. WILLIS.

ANTI-FREEZING MIXTURES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Since writing the article reproduced in your issue of the 25th ult., experience has not indicated any trouble from calcium chloride cooling mixture, except possibly in systems where considerable galvanised iron is used or where aluminium tubing forms a part of the circulating system, in which cases there might be a possibility of trouble. There is, however, no clear evidence of it, provided that the calcium chloride solution is maintained in a neutral or alkaline condition. Commercial calcium chloride is not always perfectly pure, and it is well to add a few handfuls of air-slaked quicklime in making up a solution. One of the important requisites in using this solution successfully is that any evaporation must be replaced by adding water, and not by additional solution, as the latter, of course, would result in making the solution gradually more and more dense, and, therefore, running the chance of crystallisation in the cooling tubes when the outfit is standing idle in low temperature. These crystals would clog up the tubing so that there would be no circulation until the crystals had been removed or dissolved. If evaporation is carefully replaced by pure water, and leakage replaced by additional solution, there will be no trouble. In some cars it is difficult to determine how much of the loss in the cooling system is due to leakage and how much to evaporation. In such cases it would be necessary to draw off a sample of the solution occasionally and measure its density with a hydrometer, so that the density at 60 deg. Fahr. can be corrected by the addition of calcium chloride or water, as may be necessary.—Yours truly,

E. E. KELLER.

RACING AT FLORIDA.—Replying to "A. F. B." all particulars of the races on the Ormond beach, Florida, can be obtained from Mr. W. J. Morgan, 1, Maiden Lane, New York.

REPLYING to the Sinms Manufacturing Company, Limited, the address of the Steel Ball Company is 832, Austin Avenue, Chicago.

STARTING HANDLE FOUND.—Mr. Herbert, 46, Clarendon Street, Harrow Road, W., found the starting handle of a motor-car in the Marylebone Road on Saturday, which he will be pleased to return to the owner.

NUMBERS WANTED.—Correspondents will oblige, when writing letters to the Editor, by adding the registered numbers of their cars for inclusion in our Directory of Numbers.

THE case against E. H. Jones at the Clerkenwell Court has been further adjourned.

MESSRS. WASS AND COCKS have been granted a licence to store petrol by the Ealing Town Council.

MESSRS. H. M. HOBSON, LIMITED, have been appointed sole British agents for the sale of the "Pognon" plug.

WITH reference to the rumoured adoption of a motor-car service at Rosehearty by the Great North of Scotland Railway Company, we are officially informed that the directors have not yet come to any decision in the matter.

WILLING'S "Press Guide for 1904" has been carefully revised, and the new issue continues the useful feature that has popularised this useful work of reference in past years. For all having dealings with newspapers this Guide will be most valuable.

MR. W. L. CREYKE presided over the second annual dinner of the Oxford Automobile and Cycle Agency last week, when about 120 gentlemen met round the festive board. Mr. Claude Rippon proposed the toast of "The Automobile Industries," to which Mr. W. H. Burgess and Mr. J. Newton responded. To the toast of "The Oxford Automobile Agency," Messrs. F. G. Barton and W. R. Morris made effective response.

CLUBS AND ASSOCIATIONS.

NEW SOUTH WALES.

The opening run of the Automobile Club of New South Wales was held recently. Although motoring is yet in its infancy in Australasia, the pastime is becoming popular, particularly in this State. The local Automobile Club, which was only recently formed, already has thirty cars affiliated to it, and of this number seventeen took part in the initial run. The cars as they were lined up in Moore Street, Sydney, prior to the start, and as they wended their way through the principal streets, attracted great attention. The procession was headed by Mr. A. Jones, the president of the club, with his 8-h.p. De Dion car. The following were also present:—Mr. J. Gibbs, who drove a 10-h.p. Darracq; Mr. A. Hunter, on a similar car of 9-h.p.; Mr. J. Nolan, 4½-h.p. De Dion; Mr. J. A. Daley, 6-h.p. Knowles run-about; Mr. W. E. Fisher, on a Darracq car of 18-h.p.; Mr. H. J. Vale, 6-h.p. Benz; Mr. R. Empson, 9-h.p. Darracq; Mr. G. C. Hamilton, 4½-h.p. Locomobile; Mr. Starkey, 6-h.p. De Dion; and Mr. I. Phizackerley in a 6-h.p. car made locally by himself. Mr. Harrie Skinner's De Dion car was at the disposal of the press. On arrival at the Centennial Park, the cars drew up at the Kiosk, where afternoon tea was served. They were there joined by Mr. Mark Foy in his De Dion car. The president of the Club, in a short speech, referred to the progress made by the Club since its formation, which was undoubtedly due to the energy of the officers, and he was of the opinion that the Club would continue to go ahead. After a short spin in the park, the cars went for a run to Coogee.

The officers of the club are:—President, Mr. A. Jones; vice-presidents, Messrs. J. J. Macken, Harrie Skinner, H. J. Vale, Dr. C. W. MacCarthy, and Mr. A. J. Knowles; hon. secretary, Mr. W. E. Fisher; treasurer, Mr. O. Lane.

NOTTINGHAM.

The first Automobile Ball was held under the auspices of the Nottingham and District Automobile Club on the 15th inst., at the Victoria Station Hotel, Nottingham. It is gratifying to the gentlemen responsible for this venture to know that their efforts were crowned with success, and a matter for congratulation to the Club to be able to feel that their hon. secretaries (Messrs. W. D. Wells and R. Harbidge) are untiring in their endeavours to further the interests of the Club, socially as well as officially. The secs. acted as M.C.'s, the stewards being Messrs. H. Belcher, R. Sutton Clifford, jun., B. Winter, H. Bowden, A. Ward, P. Huskinson, J. D. Morrish, and R. Cripps.

WOLVERHAMPTON.

The Wolverhampton Automobile Club held its third annual dinner at the Victoria Hotel, Wolverhampton, on Thursday of last week. Mr. E. Lisle presided over a numerous company, among whom were Mr. J. H. Cooke (Town Clerk of Bridgnorth), and Captain Burnett (Chief Constable of Wolverhampton). After the loyal toasts had been honoured,

Captain Burnett proposed "Success to Automobilmism." The automobile business, he said, was increasing very greatly in Wolverhampton, while motor-cars made in England were not only holding their own in this country, but were making their way on the Continent also. It happened to be part of his duty to give licenses, and he was very much surprised that, while there were a great number of local applications, people had applied to him from Leicestershire, Devonshire, and Yorkshire, to register their cars. He associated with the toast the Wolverhampton Automobile Club.

Mr. S. R. Rhodes, hon. secretary, in replying, remarked that notwithstanding pessimistic prophecies the club had grown far beyond the most sanguine expectations of the most enthusiastic member. In 1902 the club numbered twenty-six members, owning seven cars of an approximate value of £1,300. At the present time they had seventy-six members, owning forty-six cars, of an approximate net value of £14,420. Every one of the committee had been most assiduous in the discharge of his duties. The local police had always taken a very common-sense view of things, and although he was bound to say many of the members of the Club could have contributed to the borough funds had the police thought fit to enforce the regulations, it was gratifying to know that in the past year no member of the Club had contributed in the shape of fines to the borough fund. Motorists ought not to rest content till the anomalies of the new Act were done away with. "Our Visitors" was given by Mr. Osmund Evans. Mr. J. H. Cooke responded, and in the course of his speech said the only reasonable communication between Bridgnorth and Wolverhampton would be by a service of motor-cars. The concluding toast was that of "The President and Vice-Presidents," which was proposed in a witty speech by Mr. W. Owen, and responded to by Mr. E. Lisle.

During the evening Mr. J. H. Cooke presented the prizes, those for cars being Messrs. G. H. Evans, E. B. Bayliss, W. Clarke, T. Cureton, J. Lisle and P. S. Bayliss; and those for cycles going to Messrs. E. Lisle, C. F. G. Boyes, and H. W. Jenks.

SHEFFIELD.

Mr. S. E. Fedden, general manager of the Sheffield Corporation Electric Light Department, has given a lecture at the Wharnccliffe Hotel, Sheffield, to the members of the Sheffield and District Automobile Club,

on "Electrical ignition, as appertaining to the motor-vehicle." Mr. E. F. Coupe was in the chair, and amongst those present were Messrs. H. Parton, A. Clarke, W. James, B. Brown, J. Savage, J. R. Wade, and F. B. Cawood (secretary.)

Mr. Fedden said his desire was to lay before the members the elementary principles of electricity and magnetism and their application to the electric ignition of internal combustion engines as applied to motor-cars, bicycles, and launches. With one exception his car had never been "hung up" in the 5,000 miles he had travelled except by defects in electrical ignition circuits. He illustrated by diagrams the working of electricity, its measurement, and the resistance which was of such vital importance. Going into details, he placed on the board other diagrams illustrating the mechanism of a motor-car and the working of its electrical appliances. The battery, according to its size, would fire a certain current. If that rate of charge or discharge be exceeded it would get hot or break down. In no case should the charging current be exceeded, or injury would follow, and exactly the same result would follow if the discharge was made at a too rapid rate. Again, storage cells should never be run down too far, or sulphating would set in. Short circuits were a source of great annoyance to motorists, and were brought about by a habit which electricity had of taking the shortest or easiest path. The tendency to take a short cut became greater as the electrical pressure or voltage was increased. To deal with the annoyance caused by persons tampering with a standing car during the owner's absence for a few moments, he had devised a simple expedient, which he thought would effectually put a stop to the trouble. It consisted in coupling up to the ordinary battery a small so-called pocket induction coil. One end of the primary coil was in connection with the general ironwork of the car, while the other end was earth-connected by means of a few yards of copper wire, terminating in an ordinary iron meat skewer stuck into the ground. Mr. Fedden concluded by explaining what should be done in case of breakdown or accident, and at the close of his lecture displayed a number of diagrams showing the means that could be adopted by motorists when stranded.

After Mr. Fedden had been heartily thanked for his lecture, Mr. J. R. Wade was presented with a watch, in recognition of his services as secretary of the Club. The following certificates were also given:—For 40 miles non-stop motor-cycle run, Messrs. G. Lee, J. Thompson, J. T. Thompson, W. S. Gilder, W. James, A. T. Dewhurst, and W. B. Davy. For the 50 miles car non-stop run, Messrs. B. Hind, J. E. Evans, J. H. Pickford, and Brook Shaw.

YORKSHIRE.

The fourth annual general meeting of the Yorkshire Automobile Club was held under the chairmanship of Mr. T. E. King, at headquarters on Thursday, the 14th inst. The chief business was the election of officers for the ensuing year, which resulted as follows:—President, Earl Fitzwilliam; vice-presidents, Messrs. A. W. M. Bosville, Bridlington; T. E. King, Harrogate; H. R. Kirk, Leeds; Harry Briggs, Bradford; and W. Penrose Green, Leeds; committee, Messrs. E. Faiers, Herbert A. Jones, R. Winn, Walter Jackson, Thos. Whitaker, Edward Hepper; hon. solicitor, Mr. Alf Masser, Leeds; hon. secretary, Mr. Alf W. Dougill, Leeds; hon. treasurer, Mr. L. Hey, Leeds.

A hearty vote of thanks was proposed, seconded, and unanimously carried to the retiring officers.

It was also resolved that a programme should be drawn up for the coming summer, and that weekly meetings be arranged.

Mr. Faiers then gave a lantern display illustrating automobile progress.

YORK.

The new York and District Motor Club, which has only recently been formed, is now in full working order with a membership of nearly sixty. The second general meeting of the members has just been held, under the chairmanship of Mr. J. E. Gibbs, at the Black Swan Hotel. Alderman Edwin Gray was elected president, and a general badge for the members was decided upon. The arms of York constitute the centrepiece, these being surmounted by a motor-car. The officers are:—Secretary, Dr. Angove; treasurer, Dr. Noel Hood; committee, Messrs. J. Bellerby, J. E. Gibbs, T. Smith, Thos. Horsley, R. P. Garbutt, T. Lumb, W. Rain, W. R. Coates, H. W. Sowden, A. E. Pearson, and A. D. Jackson.

WEST SURREY.

During the absence of the secretary, Mr. R. W. Buttemer, who is about to visit Italy, communications for this club should be addressed to Mr. J. F. Ponsford, Shackleford, Godalming, who will act as secretary, *pro tem.*

PETROL ENGINES.

A MEETING of the Institute of Marine Engineers was held at the London Institution, when a paper on "Marine Petrol Engines and Motor Launches" was read by Mr. O. Sumner, who said that the marine petrol engine was, for all practical purposes, a self-contained gas engine. The petrol used with those engines had a specific gravity ranging from .68 to .72; in other words, the weight of petrol was from 6.8 lb. to 7.2 lb. per gallon. The lower the specific gravity the more rapidly would the petrol volatilise, and the quicker would be prepared the charge of gas. Atmospheric conditions affected the vaporisation of the petrol, and the mixture of petrol and air with an atmospheric temperature of 40 degrees

Fahr. would not be the mixture suitable for a temperature of 80 degrees Fahr. Again, proportionately, more petrol would be required if the engine were to run at, say, 300 revolutions, instead of, say, 500 revolutions, because at the higher piston speed it was not possible for the whole of the volume displaced by the piston to be filled completely, owing to the indraw air being restricted by its passage through the vaporiser. He would like to make it clear that a lead pipe should always be used for the conveyance of petrol from the tank to the vaporiser. There were two types of marine petrol engines, known as the 2-cycle and the 4-cycle. The 4-cycle engine was unquestionably the engine for large craft, whilst the 2-cycle engine was suitable for any class of launch up to about 50 feet. A modern high grade motor launch could live safely in a sea which would swamp or capsize a steam launch of similar size, owing to the latter's heavy boiler and wash of water therein raising its centre of gravity considerably higher than that of the motor launch, with its squat, compact little engine. The motor launch rolled more, but it did it quicker, which was exactly the action wanted in a short, choppy sea.

The Chairman, Mr. W. C. Roberts, who opened the discussion, said that for use both ashore and afloat petrol motors seemed to be coming to the front, and were evidently going to stay. Mr. W. Gardner said that his firm, like the author, were also engaged in experiments with a rotary petrol motor, and although he could not at the moment say anything with regard to those experiments, they were hopeful that in the near future a successful rotary petrol engine would be evolved. Mr. W. H. Flood proposed a hearty vote of thanks to Mr. Sumner for his able paper, and Mr. J. Thom having seconded, the proposition was carried unanimously. A vote of thanks to the chairman, proposed by Mr. J. B. Johnston, seconded by Mr. W. McLaren, concluded the meeting.

REPAIRING A MOTOR-CAR.

At the Marylebone County Court, on the 15th inst., before Mr. Fitzroy Cowper, sitting as Deputy Judge, the Albany Manufacturing Company, Limited, of Willesden Junction, N.W., brought an action against Messrs. W. Arter and Son, Upper Kennington Lane, S.E., claiming £21 ls. in respect of goods supplied and work done.

Mr. Frederick Lamplough, manager to the plaintiff company, Mr. Arthur Herbert, a practical engineer in the employ of the plaintiffs, and Mr. George Smith, travelling representative to the company, gave evidence regarding work done to a motor-car sent to the plaintiffs for repair.

The defendant said that the work had been badly done; for instance, almost immediately after the plaintiffs sent the car back, the boiler-tubes began to leak, and several of the parts rattled when the power was turned on. In cross-examination, he said he had written a letter to the plaintiffs setting out his objections, but it was a fact that he omitted to mention some of the complaints which he now made. Mr. John Price, of J. Price and Company, Kennington, corroborated as to boiler tubes leaking, as described by the defendant, also as to the rattling, and to the ball bearings not being properly adjusted. Daniel McKella, the driver of the car in question, denied having "scorched" the boiler after it came back from the plaintiff's works. His Honour came to the conclusion that the plaintiff's charges were somewhat excessive, took off £3 10s., and gave judgment for £17 11s. 1d. with costs.

A QUESTION OF LIABILITY.

WILLIAM BRENCHEY, a tool gauge-maker, of Charlton Lane, Old Charlton, sued R. F. Carr, who said that he was engineer at the Lee Motoring Works, for £15 odd for work done and materials supplied. He disputed liability on the ground that he was only a servant of the company. He admitted ordering the goods, but not on his own account. They were for the company—for a man named Dennis. In explanation defendant said that Dennis, with others, formed a syndicate for the running of motor-cars between Lewisham and Eltham. It was "a sort of a company" which owned the motors, and he (defendant) was the manager. His Honour gave judgment for the plaintiff, and told the defendant that his remedy was, perhaps, against Dennis.

MOTOR TRAILERS and LICENCES.

At the Bridlington Police Court a cycle and motor agent, Mr. Sidney H. Brown, Bridlington, was summoned for having used two vehicles while licensed for the use of only one. Mr. Stanton, who prosecuted on behalf of the Inland Revenue authorities, said that the case was rather an unusual one. The defendant had taken out a licence for his motor-bicycle, but on September 3rd he had used a trailer attached to it, while having no licence for the trailer, which, he contended, was a separate vehicle. Mr. Holtby, solicitor, Driffield, argued that a motor-cycle and a trailer combined were one four-wheeled vehicle, and that, therefore, only one licence was necessary. The Bench held that two licences were necessary.

In the evidence it was shown that Brown had applied to the local postal authorities and to the Inland Revenue officer (Mr. Hunter) stationed at Bridlington, but that neither parties had known what to charge him for a second licence. He had obtained a licence for the trailer in October. The Bench dismissed the summons, being satisfied that defendant had shown no intention of avoiding the taking out of a licence.

ACTION AGAINST A MOTORING M.P.

AT Glasgow Sheriff Court proof has been led before Sheriff Fyfe in an action at the instance of Thomas Fitzpatrick, 14 years of age, against Mr. Cameron Corbett, M.P., for £500 damages in respect of injuries alleged to have been sustained by him through being run into by defendant's motor-car. Pursuer stated that on 20th April he was wheeling a barrow along Carlton Place when he was stopped at Glasgow Bridge by the constable regulating the traffic. While waiting for the constable's signal to proceed he was run into by Mr. Cameron Corbett, who collided with him in trying to save himself from a plunging horse which had been frightened by the motor-car. As the result of the collision pursuer sustained nervous shock, also injuries to his arms, legs, and hands, and was confined to the house for several weeks.

Mr. Cameron Corbett explained that when he purchased the car he obtained the services of an instructor, who taught defender and his coachman to drive the motor. The accident occurred while he was proceeding to a meeting in the offices of the Victoria Infirmary. When his car collided with the barrow he was not going faster than two miles an hour. He attributed the collision to a pure accident, and he did his best under the circumstances. He paid for the repair of the barrow, and he called on the parents of the lad to make sure that no loss was entailed on them as the result of the accident, but on the following day he received a lawyer's letter demanding £500, which he did not see his way to pay. Medical evidence to the effect that the boy's injuries were of a trifling nature was also given for the defence. His Lordship made *avizandum*.

REMINISCENCES OF THE ROAD

A MEETING of the Scottish Club (Western Section), was held in Glasgow on Monday evening, Mr. John Adam, of Larchgrove, presiding. He was supported by the Marquis of Ailsa, Mr. Edward Brook, younger, of Hoddam, Mr. Jas. Weir, Mr. A. R. Brown, Mr. Hugh Reid, Mr. H. M. Napier, and other prominent automobilists. There was a large attendance, over 100 gentlemen being present.

Mr. Charles Jarrott read a paper on his "Reminiscences of the Road." He observed that seven years ago it was the practice to start getting the car ready on the Monday morning if one wished to go out on the following Friday evening. New bearings had probably to be fitted into the automobile if the motorist had been out on it the previous week. He took away enough spare parts to make another car, and as a rule they were used up before the return. Motoring was a sport in those days. Tyre troubles were then far more exciting than now. Among the good stories told by the author was one to the effect that on one occasion a stop for lunch was made at a country hotel, when one of the leading hunts chanced to come up. On giving the handle two or three vigorous turns to start the car there was a roar and the whole thing was in flames. Apparently the carburettor had flooded, and the vibration from turning the handle had caused the flames to flash back from the burner and to set the carburettor and petrol on fire. The car was a roaring bonfire, the huntsmen rushed out to the rescue of their mounts, the hounds gave tongue, and Mr. Jarrott, in endeavouring to put out the flames with a bucket of water brought by a stableman missed fire and set his enthusiastic friend on the other side of the car dancing like one demented. On another occasion a tradesman supplied him with paraffin instead of petrol. Finding that the engine would not work, the useless liquid was thoughtlessly emptied into the stable yard, and the tank filled up with the genuine article. As a start was about to be made, however, an equestrian entered the yard lighting a cigarette. Without warning his discarded match descended on the stream of paraffin. Instantly the whole car was surrounded by flames. A stableman rushed up with a bass broom to beat them down, but they only sprouted out anew on the broom. At the time the covering bonnet of the motor was off, and as a last resource someone rushed on to the scene with sand, which he cast into, around, and on the top of the motor, which he thought was the real cause of the trouble. It took two days to get the pebbles out of the mechanism of the car.

In reply to a vote of thanks proposed by the chairman, Mr. Jarrott expressed his pleasure in having this opportunity of addressing the members of the Scottish Club, and following up some remarks of the chairman he emphasized his view that the future acknowledgment of the rights of automobilists lay for the next three years with themselves. He counselled careful caution in all towns and villages and consideration in meeting other users of the highway, who, he said, it must be remembered had equal rights with the owners of motor-cars to its use.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

THE Motor-Car Journal.

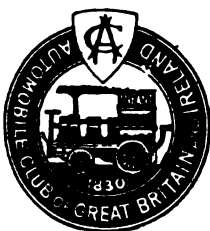
VOL. V.]

LONDON, SATURDAY, JANUARY 30, 1904.

[No 256.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



SINCE the announcement last week that the Ninth International Automobile Exhibition had been granted the official patronage of the A.C.G.B.I., Mr. Charles Cordingley has been the recipient of innumerable congratulations from trade and public alike. In fact, so many have been the felicitations on this important event that it has been found impossible to acknowledge them individually. Hence this opportunity is taken of thanking those who have expressed themselves delighted with the action of the Automobile Club in again recognising the exhibition which has so long been identified with the Agricultural Hall.

Motor Buses for the Suburbs.

ALL around the coast services of motor buses are being run in the interests of the public convenience, but London suburbs seem to have become so enamoured of electric trams, or rather have been so conquered by their advocate, that the chances of the motor-bus are small in comparison with the favours bestowed upon the cars that run on tracks. At the western and eastern extremities of the great metropolis, however, early developments may be expected. Motor-buses have lately been seen along the Edgware Road, and the East Ham Council has decided that its Finance Committee shall inquire as to the best way of raising £5,000 with a view to the purchase of five motor-omnibuses. This is a decided step forward, and one in which we wish the East Ham people much success.

Engineering Firms and Motor-Cars.

It is a matter for congratulation that British engineering firms are gradually awakening to the possibilities of the automobile, and that one by one our large concerns are taking up the construction of motor-cars. It has already been mentioned in these columns that the departure has been made by such well-known firms as Messrs. Willans and Robinson and Peter Brotherhood, while now it has to be recorded that Messrs. Crossley Bros., Ltd., known throughout the world for their gas engines, have entered the automobile industry. The "Crossley" car is what may be termed a joint production. In the first place Messrs. Chas. Jarrott and Letts, Limited, have for some time been contemplating the introduction of a car which should combine Continental experience with the excellence of British workmanship and material; a car of the highest grade for use on English roads, and to suit English requirements, and yet with many of the features incorporated in foreign models.

The "Crossley" Car.

THE design of the new vehicle is mainly due to Mr. J. S. Critchley, whose connection with the Daimler and Brush Companies will be remembered, and who, in addition, has had every opportunity of gaining a close acquaintance with the best Continental practice; while, needless to add, full advantage has been taken of Mr. Jarrott's vast experience of touring and racing

cars. The designs once ready, the next problem was to get some engineering firm of repute to construct the same, and, after negotiation, Messrs. Crossley were induced to enter the new field. The result was seen on Friday last week, when, at the invitation of Messrs. Jarrott and Letts, we, in company with a small party of the Press, visited Messrs. Crossley Bros.' extensive works at Openshaw, Manchester, to inspect the first car turned out. As a full description of the new vehicle is given elsewhere in the present issue it is not intended here to enter into details, but rather to briefly record some of the features which impressed themselves on our mind as we passed rapidly through the extensive works, under the guidance of Mr. W. Turner, the manager. Some idea of their immensity may be gauged from the fact that no less than 1,200 to 1,400 men are employed, and that one complete gas engine is turned out every forty-five minutes of the working day. There are always about 800 engines in course of construction, these ranging from the smallest size up to 700-h.p., one of the latter—for America—being seen in operation.

Care in Construction.

IN every department signs were not wanting of the care taken to produce none but the highest grade of work, the amount of money invested in gauges and jigs alone representing no small fortune. The visitors were shown the methods of production on the interchangeable system in all the various departments; here we saw cylinder castings being drilled, there cylinders bored, and here again crank shafts being turned, and so on. As an example of the accuracy with which the different parts are made, it may be mentioned, as one illustration only, that crankshafts and flywheels are produced in totally different departments, and do not come together until they reach the assembling department, when the two parts fit together perfectly. Many other points of interest were jotted down in our notebooks, notably the laboratories in which the raw material is all tested, to which pressure on our space prevents reference, but we have said enough to indicate that now Messrs. Crossley have taken up the building of motor-cars, their vehicles may be expected to quickly run into the front rank of British productions.

"Mean to be on Top."

AFTER the visit the party adjourned to lunch at the new Midland Hotel, in Manchester, where Mr. W. M. Letts, who was in the chair, gave in a humorous speech some particulars of the inception of the new car. Mr. Jarrott, who followed, expressed the opinion that the reason England had been behind in the motor-car industry was not so much due to Continental makers having had a start, but rather to the fact that British engineers had somewhat held aloof from the movement. With such firms as Crossley's and Willans and Robinson taking up the business, he had hopes that an example would be set to other large engineering concerns, and that England would soon begin to recover some of the ground it had lost. Mr. Critchley then explained that his object had been—not to produce an entirely novel car, but to design a vehicle incorporating the best features of Continental practice with good wearing qualities, one that should be capable of running 40,000 miles a year with a minimum of repairs and renewals. Mr. C. Cordingley, in proposing the

health of Mr. W. Turner, the manager, and a director of Messrs. Crossley's works echoed the sentiments expressed by Mr. Jarrott with regard to the British engineering firms having been slow in joining the movement, and congratulated Messrs. Crossley on their departure and on the high grade vehicle they had produced. Mr. Turner, in responding, gave some interesting details with regard to the works, some of which are dealt with above, and, while admitting that Messrs. Crossley were late in taking up motor-cars, added significantly, "We are, however, starting in earnest, and mean to be on the top."

Still Trapping.

THOSE who thought that the advent of the Motor-Car Act would rob the countryside of its police traps need have no fear. The police are still trapping—whether from force of habit or by order of the authorities we cannot say. But Inspector Marks, of the Surrey Constabulary, has acknowledged before the Kingston County Bench that the methods which have done so much to bring the police into disrepute are still being carried on, and that traps are laid on Surrey roads. Not only in Surrey but in the north of England as well, exaggerated views of motor-car speed are being accepted as reliable evidence.



A Reminiscence of the Southport Meeting. Mr. S. F. Edge and his Racer on the Promenade.

Alterations in Quotations.

THE recent publication of the reduction in the price of motor spirit has brought letters from agents in different parts of the country. Apparently some had fairly extensive stocks when the announcement was made, and the way in which clients suggested a lessened retail price rather startled them. Hence the suggestion that in future a longer notice of any contemplated change in price should be given, so that dealers may be prepared.

The Scottish Club.

It was a fully representative assembly that gathered together at Edinburgh on the occasion of the annual dinner of the Eastern section of the Scottish Automobile Club, reported on another page. The Right Hon. Sir J. H. A. Macdonald, K.C.B., presided, being supported by the Right Hon. A. Graham Murray, M.P., Secretary for Scotland, Colonel Duff, Chief Constable Ross, several J.P.'s, and many councillors. The apologists for absence were even more distinguished, including the Premier, two dukes, the Earl of Rosebery, three lords, a M.P., and several sheriffs. The Secretary for Scotland intimated how useful he had been to motorists when the Motor-Car Bill was passing through Parliament. He never spoke—a useful course,

he remarked, because so many who did not know anything about it did speak. Applying the economic theories of Micawber to the new speed limit, he pointed out that if they went at a pace of 19 miles 1,759 yards per hour the result would be happiness, whereas if they went over that, it might end in misery.

Leaving a Car Unattended.

AT the Kingstown (Dublin) Police Court, under the Locomotion and Highways Act, 1896, Mr. James J. Cahill, Donnybrook, has been summoned for allowing his motor-car to stand on the public thoroughfare, thereby causing an unnecessary obstruction. The evidence was to the effect that the vehicle was standing for some time opposite a public-house without anyone being in charge of it. For the defence it was proved that as a necessary precaution against the machine being put in motion, a plug had been removed which would prevent the car being started. Mr. Mahony, the magistrate, said he did not think that there had been any unnecessary obstruction. He did not think that under the circumstances a charge of obstruction could be sustained, as a man was entitled to leave his machine or locomotive outside a particular place for a reasonable time. That was what the defendant had done, and as for taking due precautions against his car being put in motion, the constable had admitted that a certain thing had been done which would prevent it. Without laying down any general rule he would dismiss the case, as he was satisfied that the requisite precautions had been taken. Evidently the Irish legal mind is more tolerant in its attitude towards motorists than are English magistrates.

To Kill 2.

VARIOUS have been the comments made on the numbers placed on automobiles, and not every bystander has clearly understood their significance. At Liverpool, the index letter is K, and the driver of K 2 has been regarded by a local poet writing in a journal of some repute as licensed to "Kill two." No sooner had he realised this fact than he rushed into print with twenty lines of verse. Verily the Motor Car Act is responsible for much more than its authors contemplated.

A Motor-Car Mishap.

A MOTOR-CAR known to fame as L. 15, the property of the Aberdare Valley Motor-car Company, was one day last week leaving the Aberdare terminus for Aberaman, when the petrol pipe broke, causing the front of the car to become enveloped in flames. In view of the celerity with which the fire spread, keen excitement arose among the passengers, all of whom, however, managed to get out of the car without injury. Great credit is due to the driver for the conspicuous presence of mind with which he set about extinguishing the flames, a task which he performed successfully. Just at the moment Inspector David happened to be coming from the direction of the Taft Vale Railway Station, and, having observed the car as it passed down along Cardiff Street, he instantly proceeded to his office, where he gave the alarm to the fire-brigade. Fortunately, the members of the brigade were going through their usual drill, and at once proceeded to the car. In the meantime a great crowd had come together, some of whom ran to the nearest houses to fetch water, by means of which the vehicle had been saved prior to the arrival of the brigade. The motor-car had, however, been considerably damaged, and was taken to the company's works in Gloucester Street by another car.

Wisdom in Winslow.

THE latest addition to the ranks of the Winslow Rural District Council—a locality in the county of Buckinghamshire—is a Mr. Missenden, who has been illuminating the darkness of his colleagues with regard to the intricacies of automobilism. At the last meeting of the distinguished body which now possesses him as a member he declared

that he would like "to see the license of the motor-cars raised to £100 a year, and that the drivers should hold a doctor's certificate as to their mental abilities, as he was afraid that some of them were rather deficient in that respect." Whereupon the other councillors laughed, although the report does not attempt to analyse the reason of their merriment. Possibly some oratorical gesture may have given more meaning to the sentence than appears in cold print. Otherwise the utterance strikes us as conspicuously inane. Rural District Councillor Missenden should understand that the licence applies to the driver and not to the car, and if he meant the registration fee, he should have known that that is not an annual charge, but merely a fee payable once. Probably there are motorists who would like to see a doctor's certificate as to the abilities of councillors, but they have never been so rude as thus to express themselves.

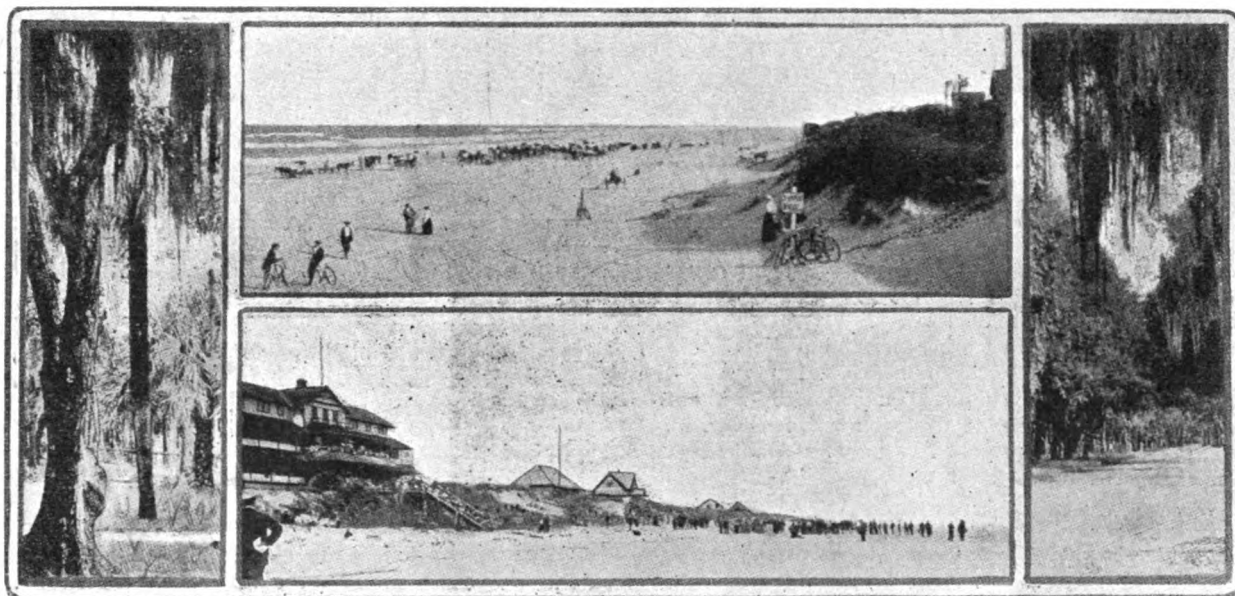
Two Witnesses.

IN the case heard at Kingston the other day, and reported on another page of the present issue, an important point arose. The Act provides that where evidence as to the speed of cars is given two witnesses are required. According to the ruling of the Kingston Bench, one of these can be "looking

the service of use to traders for delivery purposes. There was a possibility of the service being extended to Aveton Gifford and Kingsbridge, but it would be deferred until the Modbury service had been thoroughly established. The company had been registered for a capital of £5,000. Only £2,000 was now required, of which sum between £1,600 and £1,700 had already been promised. The directors had and would continue to work honorarily, and it was evident that they would have the hearty support of Devonshire people.

Technical Instruction.

MUCH interest has been aroused among those concerned with the work of technical instruction in London with regard to the complete plan of instruction now being carried out in Boston, U.S.A. This was outlined in a recent issue by the originator of the scheme, and is a good working basis. It is satisfactory to know that at Battersea, West Ham, Clerkenwell, and elsewhere within the Metropolitan area, those responsible for the engineering classes are not ignoring the automobile. We shall be glad to hear of similar enterprises in the provinces. Tunbridge Wells deserves credit as the first place outside of the



Automobile Racing on the Ormond-Daytona Beach, Florida.—The upper picture shows the Daytona, and the lower one the Ormond end of the Beach.

[Motor Age.]

both ways," and yet be regarded as an exact witness. Such points as these should be carried to a higher court, so that an authoritative pronouncement may be obtained without delay. In the case in question the witness with a stop-watch claimed a speed of twenty-seven miles an hour; the sergeant, who relied merely on his opinion, set the pace at twenty-five miles an hour. If witnesses are to give evidence they should both be similarly provided with watches, and their calculations checked by an independent observer. The issue of the first cases under the Act is certainly disappointing.

A Passenger and Parcels Service.

THE inauguration of the South Hams Motor Carriers, Limited, has taken place in truly British fashion—by a public dinner. This was held at Chubb's Hotel, Plymouth, under the chairmanship of Mr. Gerald Eve, one of the directors, who explained that the company had ordered two 20-h.p. Milnes-Daimler 'buses. It was hoped that these at an early date would run three or four times daily between Plymouth and Modbury, and serve all the villages en route as far as possible. The 'buses would be of such a character as to be used both for passenger and parcel traffic. It was thus hoped to make

Metropolis to recognise the need for technical instruction in automobile matters.

Lights at the Rear.

AT Farnham and elsewhere, motorists have been fined for not carrying red lights on the rear of their motor vehicles, and we would emphasize the danger of carts, vans, etc., being allowed on the roads without lights at the rear. This is a simple matter, and we would urge upon all the great delivery companies, and those who employ large numbers of vans for delivery purposes, to take the hint, in the interests of public safety.

The Prohibition of the Horse.

REPLYING to a question by Sir Joseph Dimsdale, at the London Traffic Commission, mentioned last week, Sir H. E. Knight observed that he would not prohibit the use of horses in the streets altogether, but where they occupied 25 per cent. of the space he would save that by making motor traction compulsory. Pressed as to whether Parliament would ever pass such a law as that he thought there would be no

difficulty if the public convenience would be greatly facilitated. He would not make omnibuses use motor traction immediately, but a law might very well be enacted that all new omnibuses should be constructed for motor traction.

A Hint to Horse Owners.

NOT often do we hear such advocacy of the automobile from one of the City Fathers, and it is significant of the change that is coming, or has come, over public opinion. Sir H. E. Knight's opinions are the most clearly expressed view of the subject we have heard from one in authority and should do much to cause leading London firms to give heed to the importance of the motor-van trials. For, after all, the problem of London's traffic is largely made up of two factors, the length of vans with their horses, and the slow-moving traffic that paces along the busy streets with funereal weariness. The substitution of motor traction would undoubtedly reduce the existing obstruction—and for that small mercy everyone in the City would be grateful. It would also be a convenience if arrangements could be made by which all the streets in a district need not be "up" at one time. The tangled maze of traffic converging at the junction of Shaftesbury Avenue with Tottenham Court Road is a fearsome thing—impossible to behold in any other place than London.

Earl Russell's Advice.

EARL RUSSELL'S views on the Motor Car Act are that test cases should be tried without delay on some of the legal conundrums which have been set. In that we agree, for some of the obscurities will probably be used by country magistrates against the interests of the industry. The power of appeal should also be extensively used, thus securing an opportunity for reviewing the decisions of prejudiced local benches by a more responsible body. No efforts should be lost to influence public opinion favourably towards automobilism both by consideration to other users of the road and by giving rides to people of local influence. Finally Earl Russell recommends that some attempt should be made without delay to formulate what amendments to the law are necessary, so that at the expiration of the present Act motorists may show their unity in a universal demand for more consideration from the Legislature.

Dealers' Marks.

LITTLE has been heard of the marks assigned to dealers under the new Act. The matter, however, is of such interest to the trade that we are preparing a Directory of Dealers' Marks on similar lines to the Directory of Numbers now appearing in the *Journal*. With a view of making the information complete, agents and manufacturers are invited to send us the marks assigned to them, together with particulars of the colours of the plates adopted by their respective councils, and the registration fees charged. On this latter point considerable variety is being shown by the authorities in different parts of the country.

Helping the Industry.

THE Committee of the Automobile Club, as mentioned on a previous page, has decided to give its patronage to the Ninth Annual Automobile Exhibition, to be held at the Agricultural Hall, London, in March. A decision has now been taken as to the application of any monies accruing to the Club from that object, and as a result of the consideration of the matter by the Executive Committee last Monday, they will be applied to the promotion of Dust Prevention and Side-slip Trials, the Investigation of Road Resistance, and generally to such purposes as promote and extend the usefulness of the automobile movement as distinct from the social organisation and development of the Club. This fact will give the trade increased interest in the success of the Exhibition.

Absent-minded Motorists.

HALF-A-DOZEN cases have already come before London magistrates under the new Motor Car Act, and it would appear that carelessness has been responsible for the majority. At Lambeth three cases were heard on Monday, in which the absence of identification plates led to fines. At the South-West London Court an owner was fined 20s. for permitting an unlicensed driver to drive his car, and at Marlborough Street a motorist was fined for not producing his licence when required to do so by the police. The period of grace has passed, and motorists must now recognise the power of the law.

The Parish Motor-Car.

In the Towcester Union some of the workhouse inmates enjoy a trip in a motor-car while the owner, a guardian of the poor, is deliberating with his fellow guardians as to their maintenance and welfare. North of the Tweed the idea is likely to be developed, for the Glasgow Parish Council is considering a proposal to provide a £500 motor-vehicle for the conveyance of the parish poor from one district to another. At present this is done by means of a horse and 'bus—a form of locomotion in vogue in the days of the Pharaohs. It appears that the 'bus has become weary of its travelling and a new vehicle of some kind is as necessary as a change in the weather. A new 'bus with equipment would cost £296, but the upkeep of the horses required for its performance of its work is £364, while Mr. Adam, the Convener of the Finance Committee, estimates that the upkeep of a motor-car for the same amount of work would be only £261. Thus by the adoption of the newer methods the cost per head in carrying the poor patients would be but 6d. as compared with the 9d. now expended. Seeing that this is a saving of 3d. per head, or body, the mere Southron would not have been surprised had the proposal been accepted on the spot. It was, however, decided to postpone a decision till the next meeting. Probably some of the Glasgow Parish Councillors were afraid of making the infirmary and the workhouse too popular.

THE Stafford Rural District Council has resolved to apply for the imposition of the ten mile limit.

THE Automobile Club of Avignon has fixed August 28th as the date of the annual hill-climb up Mont Ventoux.

THE Town Council of Blackpool are making application to the Local Government Board for authority to restrict the speed of motor-cars to ten miles an hour in the whole of the borough.

THE Executive Council of the County Councils Association has adopted the report of the Motor Car Committee and of the conference held on the 7th inst., between representatives of the County Councils and Municipal Corporations Associations and of the Local Government Board and Scottish Office, with the slight modification that the hollow triangle to be erected to mark dangerous places should be coloured red instead of green.

THE Duke of Westminster had a mishap with one of his motor-cars on Sunday evening. The vehicle collided with considerable force with a wall adjoining the Buerton entrance gate to Eaton Park. A portion of the wall was knocked down, and the car was badly damaged. Fortunately, the duke and the other occupants escaped with nothing worse than a severe shaking.

JUST as we go to press we learn that on Wednesday Messrs. Harvey Du Croz, Jun., and C. Sangster successfully drove a 15-h.p. Ariel motor-car, via the Mountain Summit Railway, to within a short distance of the summit of Snowdon, a drift of snow six to seven feet deep preventing further progress. The average grade of the cog wheel rack mountain railway is 1 in 7. It is hardly necessary to mention that this is the first occasion on which a motor-car has travelled up Snowdon.

The "Crossley" Petrol Motor-Car.

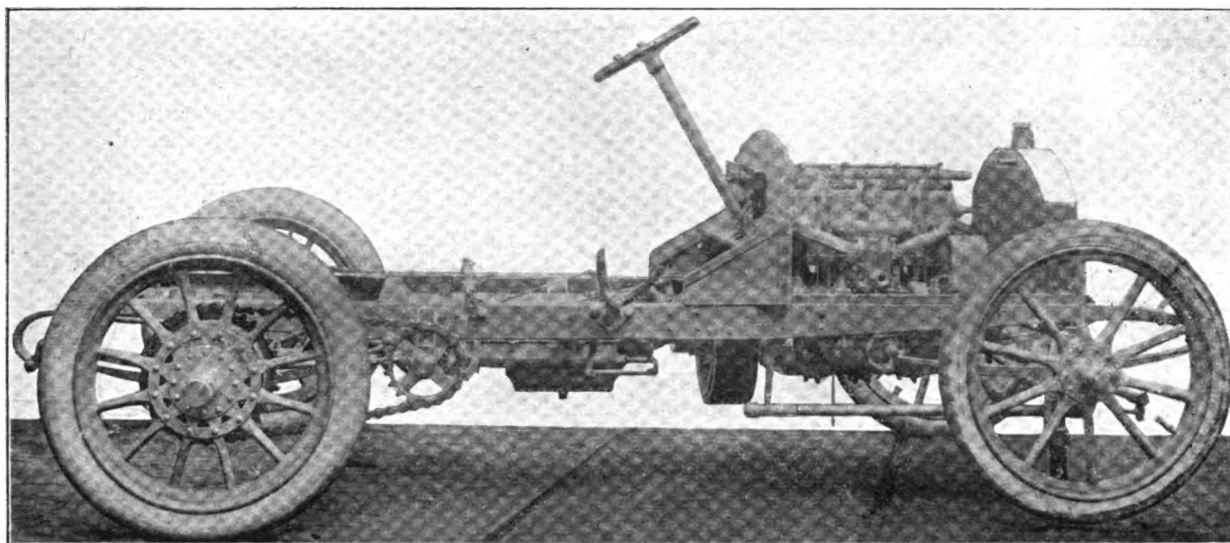


Fig. 1.—View of Chassis of "Crossley" Car.

As recorded on another page, the well-known engineering firm of Messrs. Crossley Brothers, Limited, Manchester, whose gas engines are known throughout the world, have taken up the construction of motor-cars. For the present they are confining their attention to one type of car only—a vehicle fitted with a four-cylinder vertical engine which, while nominally rated at 22-24-h.p., develops nearly 30-b.h.p. The object the designers and builders have had in view has been not to produce an entirely novel vehicle, but rather one combining the best features of Continental practice with the highest grade of British workmanship and material, the idea being to build a car which shall be second to none in quietness and steadiness of running, durability and reliability. Associated

to point out that whereas in the early days of the automobile movement it was almost impossible to obtain anything but a photograph showing a general view of the motor-car, nowadays drawings and photographs of the various components which go to form a complete *chassis* are much more readily supplied. In the case of the "Crossley" car this facility of clearly illustrating the details has been accorded to a most liberal extent, it being simply pressure on our space which prevents us from publishing several illustrations in addition to those given herewith.

As will be seen from Figs. 1 and 4, which show respectively an elevation and an outline view in plan of the *chassis*, the general arrangement follows what may be termed standard lines, the engine being set under a bonnet in the fore part of

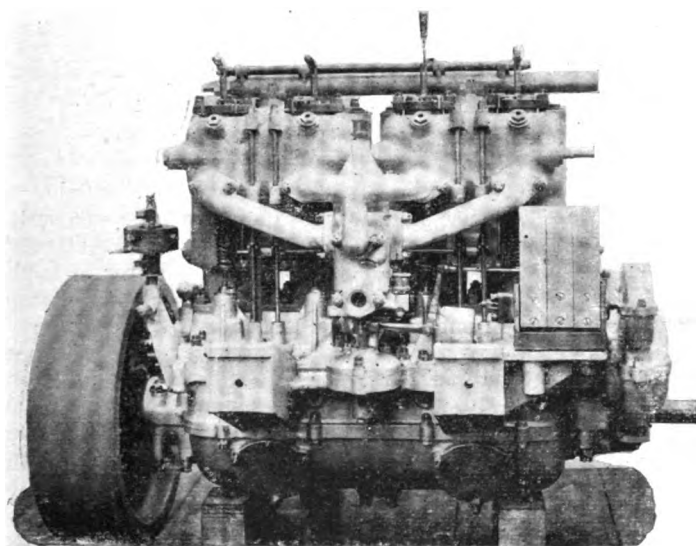


Fig. 2.—View of "Crossley" Motor—Inlet Valve Side.

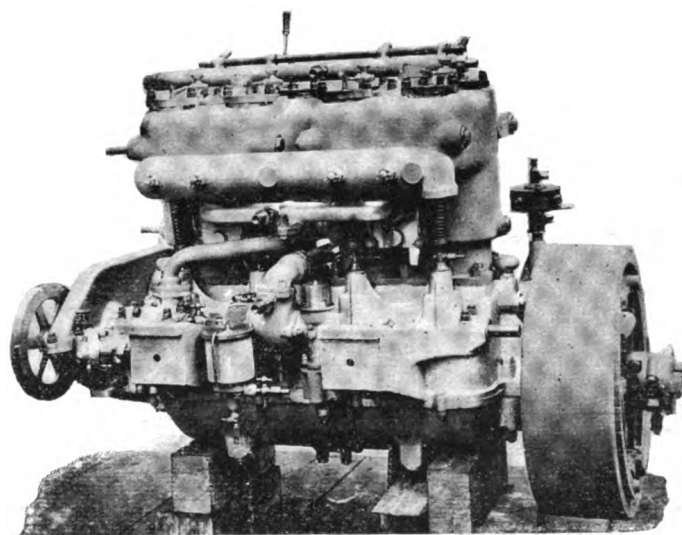


Fig. 3.—View of "Crossley" Motor—Exhaust Valve Side.

with the enterprise of Messrs. Crossley Brothers, Limited, are Mr. J. S. Critchley, who is responsible for the design, and Messrs. Charles Jarrott and Letts, Limited, who are putting the cars on the market under the name of the "Crossley." Before commencing a description of the new vehicle it may be interesting

the frame. The latter is of pressed steel, narrowed at the front to allow the front steering wheels to take a larger lock than is possible with rectangular frames. The motive power is supplied by a four-cylinder vertical engine, two views of which are given in Figs. 2 and 3. The cylinders with their water-jackets are

cast in pairs from a special quality of iron. The valves are all mechanically operated, and located on opposite sides of the engine, the inlets being on the right—looking from the driver's seat—and the exhausts on the left. The inlet valves are nickel steel, while the exhaust valves are made of a special quality of phosphor bronze, to which it is claimed no carbon will adhere, and which will withstand a high temperature without pitting. The cylinders are $4\frac{1}{2}$ in. diameter by $5\frac{1}{2}$ stroke, the engine running normally at from 900 to 1,000 revolutions per minute. The connecting rods are of mild steel, and the crank shaft is made from a solid nickel steel forging. In turning it up on the lathe it is held in the machine in a special way, so that there is no strain on the cranks during the operation, and consequently preventing any set or spring. The cranks for each pair of cylinders are set at an angle of 180 deg. to each other. Large phosphor bearings are fitted between each crank, the main bearing $4\frac{1}{2}$ in. long. The piston rings, of which there are five to each piston, are made in a special way on a machine of Messrs. Crossley's own invention, the object being to produce a circular ring with the necessary spring; instead of the usual angular split, the two ends are cut concavely thus (), a pin in the piston wall fitting in the opening thus formed in the rings, to prevent the latter from working round when the engine is in operation.

alignment of one hole to the other. The cylinders are bored for the piston on a special machine with a similar object; while, to ensure a perfect balance, the piston and connecting rods are identical in weight.

One of the special features of the car is found in the carburettor, which is of the automatic air-regulating variety, the suction of the engine being utilised to so adjust the supplementary air inlet of the carburettor that the latter furnishes a correct mixture at all engine speeds. The carburettor is seen in Fig. 3, but we hope to illustrate this interesting device in detail in a subsequent issue, when its method of operation will be more clearly understood. In the meantime, we may mention that, in addition to the usual float and spraying chambers, there is a third one, in the bottom of which is a quantity of mercury. The latter is divided into two parts by means of a little cylinder of a smaller diameter than the outer casing. The cylinder does not extend quite to the bottom of the latter, so that normally the mercury is at the same height on the inner and outer sides of the cylinder. On the surface of that on the inner side is a float connected by a spindle with the adjustable air-valve above. The mercury is exceedingly sensitive in responding to the variations of the suction of the motor, the level changing to a degree corresponding to the slightest fluctuation in the suction, and the float, following

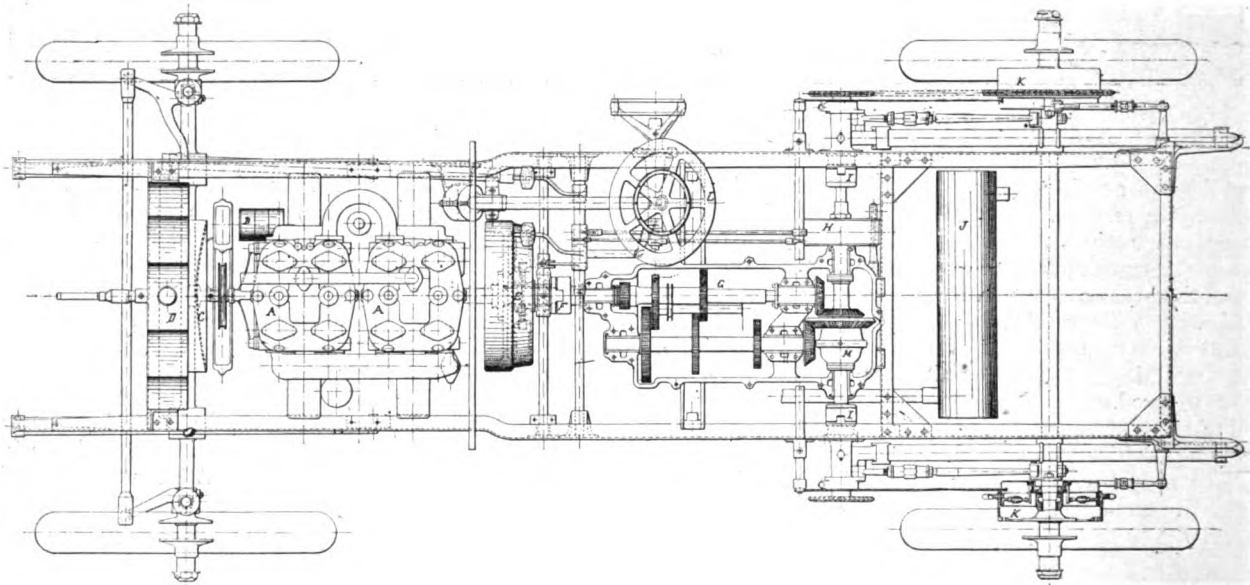


Fig. 4.—Plan View of Chassis of "Crossley" Car.

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|--------------------------------------|---------------------------------------|----------------------------------|-----------------------|
| A. Motor. | E. Clutch. | H. Differential Shaft Brake. | L. Steering Wheel. |
| B. Magneto. | F. Joint between Clutch and Gear Box. | I. Joints on Differential Shaft. | M. Differential Gear. |
| C. Fan. | G. Change Gear Box. | J. Silencer. | |
| D. Combined Water Tank and Radiator. | | K. Rear Internal Brakes. | |

Furthermore, to prevent any unequal expansion and contraction of the piston rings, the water jackets extend to the bottom of the cylinders, so that the piston and its rings in their travel do not get below the water line. The water circulation is maintained by a gear-driven pump and a combined honeycomb radiator and water tank; a belt-driven fan running at a speed of 1,500 revolutions per minute induces a powerful current of air through the tubes of the radiator. To prevent any slipping of the belt which drives the fan, unusually large pulleys are employed. The ignition is by means of a magneto, the gear wheels which drive this running on ball bearings. Provision is made whereby the usual high-tension system of ignition can be fitted in addition to the magneto, and the sparking plugs can be located either over the inlet or exhaust valves as desired. Extreme care is taken in drilling the pairs of cylinders, no less than sixty-five holes of different sizes having to be made in each pair for one purpose or another. To this end a casting, consisting of a pair of cylinders and their water-jackets, is rigidly locked up in a box. The latter is perforated with the various holes, and forms a jig, from which the casting is not removed until every hole has been drilled, thus ensuring perfect

the mercury, opens or closes the air inlet proportionately. To ensure ready vaporisation in all temperatures, the carburettor is provided with a water-jacket. In addition to the usual throttle-valve in the admission pipe close to the carburettor, a further means of controlling the engine is provided by a special arrangement by means of which the gas can be cut off at any part of the stroke of the pistons. This is a device which has given excellent results in Messrs. Crossley's gas-engine practice; it is located on the inlet-valve side of the motor (see Fig. 2), and is arranged to be controlled either by the governor or by hand from the steering wheel. The levers controlling the throttle-valve and ignition advance and retard are mounted on the steering wheel, as in the Mercedes and other high-grade cars. By means of the cut-off arrangement and the special carburettor, the engine can be run at any speed from 80 revolutions to the maximum, rendering the car not only very silent and economical in fuel consumption, but enabling the vehicle to be almost entirely driven on the top speed.

The two cam shafts, the governor, and the pump and magneto driving gear are entirely enclosed. Special attention has been devoted to the lubricating arrangements, a notice-

able feature of the lubrication of the engine and main bearings being that the oil is fed from below, instead of from above as usual. The exhaust gases are employed in keeping up a feed of oil under pressure. The oil tank is, however, not combined with the sight-feeds on the dashboard, but is separate from the latter. The sight-feeds, of which there are nine—three for the engine and six for the gear-box—are provided with a compartment through which a part of the engine-cooling water is made to circulate; in this way the oil is kept at a constant degree of consistency, enabling a steady feed to be maintained to the different bearings.

The engine and gear-box are supported directly from the main frame, no under-frame being employed. The gear-box is suspended at four points, but, to allow for any strain, joints, as will be seen from Fig. 4, are introduced between the clutch and the gear-box, and on the differential shaft. The friction clutch, of which a very clear view is given in Fig. 5, is of an entirely new design; it is of the metal-to-metal type, and consists of two shoes, which are brought into contact with the internal face of the fly-wheel by a central boss which forces out the two arms. Only a slight movement of the pedal is necessary to engage and disengage the clutch, while the spring employed is, as will be seen, but a light one, which can be readily adjusted. The gear-box is of large dimensions, to enable pinions of ample size and wearing surface to be employed. Four speeds forward and a reverse are provided, the drive on the top speed being direct. The two shafts are arranged side by side and on the same plane. From Figs. 4 and 6 it will be seen that each shaft in the gear-box terminates in a bevel gear meshing with corresponding pinions on the differential shaft. On the first three speeds the power is transmitted through the larger pair; for the fourth, the third speed wheel is advanced until a stepped clutch on its side meshes with a corresponding clutch connected with the smaller bevel pinion. The four speeds are estimated at respectively 11, 22, 35, and 48 miles per hour, with the engine running at a speed of 1,000 revolutions per minute. From the differential shaft, which runs on ball bearings, the power is conveyed to the

one being curved in its central part and the rear one cranked to allow of a low frame. The clutch and brake pedals are of the push-forward type. The rear brakes, actuated by a hand-lever, are of the internally expanding variety, entirely enclosed. Like the countershaft brake, which is of the metal-to-metal contracting pattern and operated by pedal, they act equally well whether the car be travelling in a forward or backward direction. The road

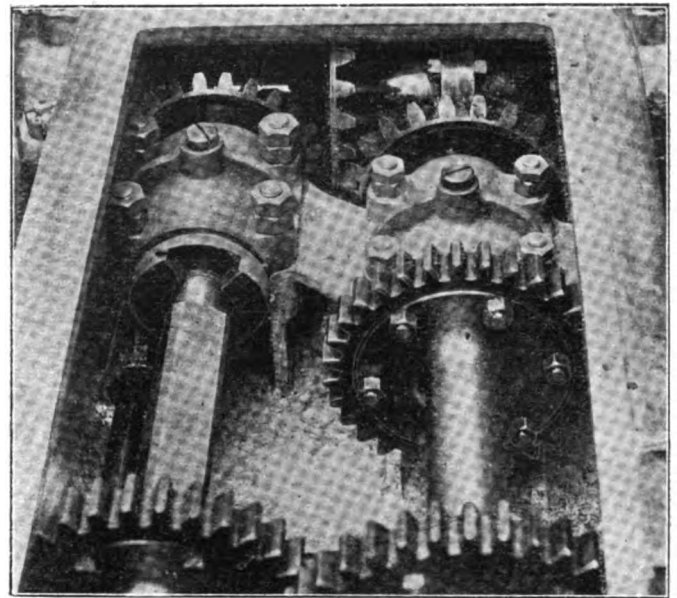


Fig. 6.—View of Change-Speed Gear Box on "Crossley" Car.

wheels are of strong construction, the front pair being 910 mm. diameter and shod with 90 mm. tyres, and the rear pair 920 mm. by 120 mm. The wheel base of the car is 8 ft. 3 in. and the gauge 4 ft. 9 in. The chassis weighs a little over 17 cwt., and is, of course, adapted to receive any kind of carriage body. Large phosphor bronze adjusting nuts are provided on the radius rods, these being impervious to rust, and so not affected by exposure to bad weather. A little detail, which adds much to the easy running of a car, is that helmet lubricators are fitted to the radius rods and all small bearings, such as those on the levers connecting the pedals and hand levers to the brakes, change gear, etc. Another little point to which attention may be drawn as illustrating the care which has been devoted to the details is that the plain parts of the bolts are square in section, and fit in correspondingly square holes, while all the nuts are of the Castle type and pinned. From the foregoing description it will be seen that the "Crossley" car is on up-to-date lines throughout, and reflects credit on all connected with its production. We are looking forward to a run on one at an early date.

PHANOMEN.

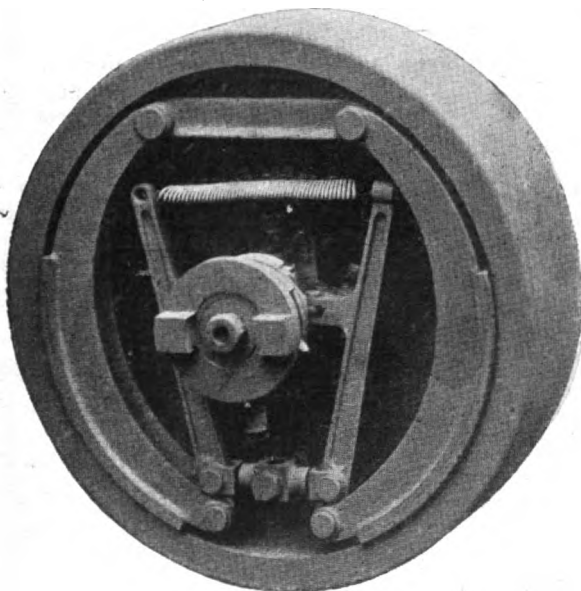


Fig. 5.—View of "Crossley" Clutch.

rear wheels through Renold roller chains. The steering is controlled by an inclined hand-wheel, and is of the worm and sector irreversible type; the steering rods, which have provision for adjustment, are of very large diameter, and have large special joints. The pivots of the front steering-wheels are supported both at the top and bottom, and run on ball bearings.

The frame is carried on long springs, those at the rear measuring 42 in. The axles are of H section solid steel, the front

To meet the demand for a popular-priced car, the Belsize Motor-Car and Engineering Company, Limited, are bringing out a 6-h.p. two-seated vehicle to be known as the "Belsize Junior."

A COMPANY has just been formed in Liege, Belgium, with a capital of £2,400, to be known as La Compagnie de Transports Automobiles.

AN Australian correspondent informs us that Mr. J. P. Wallace, of the Wallace Tyre Company, Melbourne, has lately imported a 12-h.p. Benz Parsifal car.

As many motorists have learned to their sorrow, the cost of repairs is an item of magnitude with some cars, and frequently acute dissatisfaction has been caused by their excessive nature. The Mobile Company, of San Francisco, have adopted a novel policy to lessen this dissatisfaction, a guarantee being given that repairs to cars purchased from them will not exceed an agreed sum per month, accidents excepted. Should the repairs be less than the guarantee the owner gets the benefit.

THE MOTOR CAR ACT.

SOME of the letters lately received with reference to the Act now in operation will be found in our Correspondence columns; the purport of others will be seen in the references which follow, in which an endeavour has been made to answer some of the inquiries addressed to us, and to explain some difficulties that have already occurred to motorists.

Licensing.

M. A. N. asks if a licence has to be taken out during the period of pupillage. Most certainly. While the intending motorist is a passenger only, no licence is, of course, necessary; but the handling of the steering wheel renders a licence essential. A good many relatives of motorists have already taken out licences in anticipation of becoming practical drivers—although at present they do not even own a car.

Dealers' Marks.

"Do you know of any county where dealers' general identification marks are obtainable at less than the maximum amount, viz., £3?" asks A. W. H. Perhaps our readers can enlighten our correspondent, who must remember, however, such marks can only be assigned by "the Council of any county or county borough in which the business premises of any manufacturer of, or dealer in, motor-cars are situated"—a clause which makes it impossible for any dealer to register the cars engaged in the ordinary way of business outside his own county.

E. S. asks: "I have had to pay £2 for registration. Is this right? If I let cars on hire, has each to be licensed?" The maximum fee for registration is £3, each authority being free to charge what it likes below that sum. Each car let on hire has to be registered and numbered in the ordinary way, a general identification mark not being applicable in such cases.

Fore-Carriages and Trailers.

A prospective motorist writes:—"I understood that a motor-bicycle and fore-car or side car, coupled, is regarded as one vehicle, but have been informed that the fore-carriage and motor-bicycle should each pay a separate duty. Which is the correct view, and what is the position with regard to trailers?" While the Act does not define a motor-cycle, it makes such a distinction with regard to the weight of cars and cycles that Councils can hardly be expected to register as motor-cycles any machines weighing more than 3 cwt. or having more than three wheels. A fore or side carriage with a motor-bicycle should be regarded as a motor-cycle—the trailer adds another wheel, so the combination may alter the conditions for revenue purposes. Care should be taken in registering automobiles that in the space for a de-

scription of the vehicle all its features are set forth. Regard must also be had to the provisions of the Customs and Inland Revenue Act, 1888, and from the Bridlington case, reported last week, it is clear that the authorities are inclined to regard a trailer as a separate entity. Thus a duty of fifteen shillings would be required for each. On the other hand, if a motor-bicycle and trailer were classed as one vehicle the duty would be £2 2s., such combination having four wheels. Thus comes the anomaly that, while one registration may suffice, two duties will have to be paid. Regarding the motor-bicycle with its fore-carriage as one vehicle of less than four wheels the Inland Revenue authorities should be satisfied with the fifteen shillings duty on such a combination.

Duties on Cars for Hire.

L. B. asks "If we keep a car for hire purposes only and obtain a hackney carriage licence, shall we require another licence at two guineas?" Provided that the light locomotive does not exceed more than one ton in weight unladen, no additional duty is imposed under the Motor Car Act, 1903. In such a case as mentioned by L. B. it would be liable to duty under section four of the Customs and Inland Revenue Act, 1888, which fixes the duty on hackney carriages with four or more wheels at £2 2s. and on vehicles with less than four wheels at 15s.

Foreign Motorists in England.

An Antwerp correspondent writes:—"I shall be very much obliged to know through your paper how the new Act will affect foreigners, as I intend touring in England for a week or so next spring. Shall I want a number plate or a licence, and if so, how am I to obtain same before or on landing? If I want a number plate my car will be a sight indeed, and it will be 'hard lines' on my car. A plate for Belgium, one for Holland, one for France, and one for England! And what about police traps? Supposing I am caught, fairly or not, and I give my correct address *here*, will I be tried on the spot or will I be summoned later, and have to go to England or to appoint a solicitor to avoid being judged by default? In case all this red-tapeism to which we here are used, or supposed to be, has to be complied with by any foreigner touring in your country for say a fortnight or three weeks, many will no more think of it, certainly not yours truly." In such a case it will be necessary to register the car and secure a licence, the latter only being obtainable in the district where the tourist makes his headquarters while here. Then he must drive carefully, should he wish to avoid the awkward consequences of police activity.

PRACTICALLY every motorist has his own idea as to the best way to illuminate at night the number plates on his motor-car or cycle. It would be exceedingly useful if readers would send, for reproduction in the *Journal*, particulars, together with sketches or photos, as to the various ways the difficulty may be overcome.

"SOME motorists are said to have adopted Roman numerals in place of ordinary figures. This will puzzle some of our friends in blue when they see a car go by with a good long line of letters on it instead of figures, as, for instance, 'F—CLXXV.'" This extract from a letter suggests some ingenuity but also an illegality.

UP to the 22nd inst. there had been registered in the borough of Leicester 58 motor-cars and 91 motor-cycles; 183 licences to drive had been issued. In the county of Norfolk the figures were 186 motor-cars and 48 motor-cycles, with 189 drivers' licences.

At the South-western Court, on Tuesday, Frank Fellows, of Offley Road, Brixton, charged with driving a motor-car after nightfall without the rear identification plate being illuminated, got scant sympathy from the magistrate. The defendant's plea was that he was unaware that the light was out, and explained that he had no means of ascertaining the fact without dismounting. Mr. Garrett said motorists must bear the responsibility, and imposed a penalty of 10s. with costs.



A Reminiscence of the 1903 Paris-Madrid Tour. Excitement of the Natives at Venta di Banos. Puzzle—Find the Motor-Car.

CONTINENTAL NOTES.

A LITTLE flutter of excitement has run through German motoring circles during the past week owing to a speech of Count Schlieben in the Upper House of Parliament, in which he raised the question of the danger to the public by automobile racing, and particularly during the Gordon Bennett race. The Minister of Justice, in reply, pointed out that a most strict enquiry was going on into the provisions being made for the public safety. The Duke of Ratibor, the president of the German Club, went to some trouble to explain the arrangements being made by the Club to this end. The incident closed by Count Schlieben announcing that his object in raising the question was not to raise a tempest against motorists but to draw attention to the speed excesses of a certain class of drivers and the dangers these present to the public. Messrs. Opel, of Russelsheim, the German licencees of Darracq cars, have entered three of these

single cylinder motor and has belt transmission. It is designed to carry a load of 15 cwt. at an average speed of $11\frac{1}{2}$ miles per hour. The electrical van (Fig. 2), which is used in the Parcels Post service, was constructed at the carriage works in Berlin of Herr C. Klemt; the electric motor is connected up to the front wheels of the vehicle. A battery of 42 accumulators furnishes sufficient energy to carry a load of a ton a distance of about 20 miles on one charge.

THE German automobile Club has fallen into line with the French and English Clubs by forming a motor-boat committee, which will at once make the necessary arrangements for the races it is proposed to hold at Kiel during the coming season.

DURING the course of the forthcoming automobile exhibition in Turin, a meeting of delegates of the various automobile clubs in Italy will be held, with the object of forming an Italian Automobile Federation.



Fig. 1.—The Alcohol Motor Van.

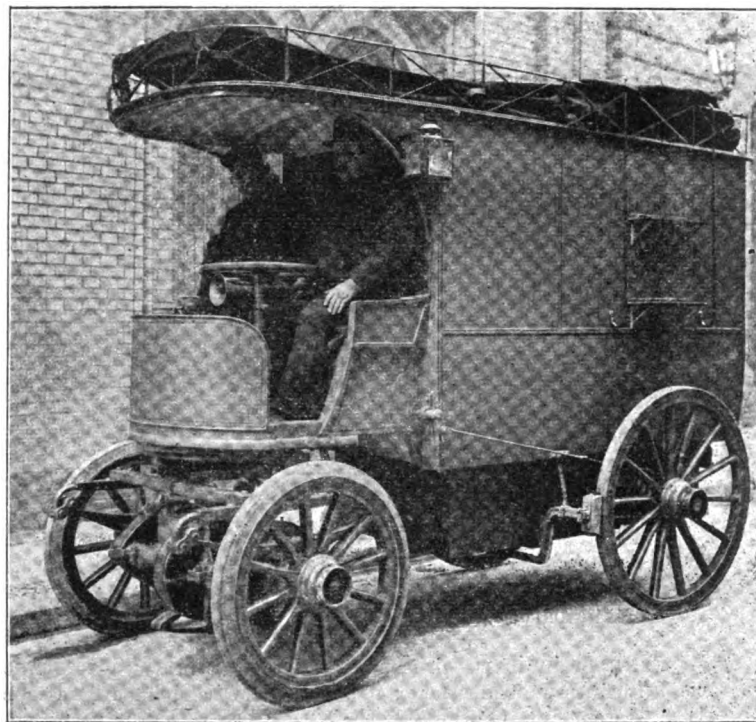


Fig. 2.—The Electrical Motor Van.

THE MOTOR-VANS IN USE BY THE POSTAL AUTHORITIES IN BERLIN. [Allgemeine Automobil Zeitung.]

vehicles for the German eliminating trials for the Cup team. It is stated that one of the Benz Parsifal cars will be driven by Madame du Gast.

A RUMOUR is current in Paris this week that M. René de Knyff has definitely decided not to compete in this year's Cup race, and that the Panhard team will consist of Messrs. Henri and Maurice Farman and M. Teste. Messrs. Panhard and Levassor are building six cars for the Gordon Bennett race, three for the eliminator tests and three for reserve in case of accidents. They are of an entirely new pattern, differing altogether from the vehicles that have so far been produced by this company. The three Austrian cars are to be driven by Werner, Braun, and Hieronymus, all drivers of repute.

As mentioned in a recent issue, two motor-vans are at present being used by the postal authorities in Berlin, one being propelled by an alcohol motor and the other by electricity. We are now able to give illustrations of the vehicles in question. The 5-h.p. alcohol van (Fig. 1), which is being employed for the carriage of mails between the G.P.O. in the German capital and the suburbs of Schöneberg, was built by the Berliner Motorwagenfabrik Gesellschaft, Tempelhof; it is fitted with a

A COMPANY has just been formed in Paris to be known as La Société des Transports Automobiles Varengeville-sur-Mer, Dieppe et le Littoral, to run a public motor-car service between the places named.

THE annual consumption trials known as Le Critérium de Consommation, organised by the "Auto," will be held on March 3rd, 4th, and 5th. This year, however, the classification will not be made on the consumption alone, but also on the speed. The trials will be open to the usual classes of cars ranging from under £200 to over £1,600 and for (1) industrial vehicles carrying under a ton and (2) for lorries able to carry over a ton. Times will be specially taken on the Picardie Hill over 500 metres. The marks will be allotted according to the following formula:—(1.) For the consumption per ton of total weight the marks will be the number of litres consumed divided by the total weight in tons and multiplied by the coefficient 10. (2.) For the consumption per ton of useful load the marks will be the number of litres consumed divided by the useful load in tons and multiplied by the coefficient 10. (3.) Regularity of running and mean speed. No competitor who covers the course in less than four hours (an average speed of 25 kilometres per hour) will be penalised, but every car that

D

maintains a lower average speed than 25 kilometres will be penalised as follows: the difference between the average speed of the vehicle and the minimum average speed demanded will be expressed in kilometres and multiplied by the co-efficient 25, and the resulting number deducted from the marks obtained. Already four Chenard-Walcker, three Creanche, and four Gillet-Forest cars have been entered.



A Snapshot on the German Gordon Bennett Course.

THE Belgian Automobile Club has issued a circular to its members urging them to conform to the police regulations with regard to speed, etc., and to insist on a similar observance of the rules on the part of their mechanicians.

THE preliminary programme of the Cannes "automobile week" has now been issued; it is to be held from the 13th to the 19th March next. On Sunday, the 13th, there will be a gymkhana on the new Albert Edward jetty; on the 14th the first part of the touring competition, consisting of a run from Cannes to Grimaud and back, will be held; the 15th will be devoted to hill-climbing trials; the 16th to trials of various accessories; for the 17th is fixed the second portion of the touring competition, the course being Cannes to Vince and back. A *rallye-papier*, or paper hunt, will be held on the 18th, followed by an exhibition and distribution of prizes on the 19th inst.

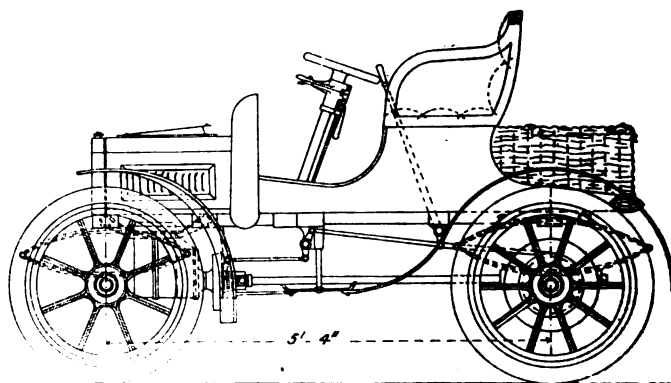
A NEW departure is being made by Messrs. Gillet, Forest and Company. It will be remembered that this French company has for some time made a feature of the construction of motor delivery vehicles. A separate company has just been formed in connection with the concern, the object of which will be to hire out to tradespeople motor-vans for the delivery of their goods and parcels.

At the last meeting of the French Chambre Syndicale de l'Automobile it was decided to adhere until the end of 1905 to the same basis of classification in motor-races as heretofore, viz., classification by weight.

FOLLOWING the example of England and France, a Belgian Dust Prevention League has just been formed in Brussels. It will receive the support of all the automobile clubs in the country, and will probably act in conjunction with the Ligue Contre la Poussière lately formed in Paris.

THE "HORBICK MINOR" CAR.

IN a recent issue we mentioned that Messrs. Horsfall and Bickham were bringing out a 6-h.p. two-seated car to meet the demand for a light motor-vehicle at a popular price. There are a number of special points about the new car, which, however, we are for the moment precluded from describing, owing to the question of securing patents, but we herewith give an outline view, together with a few general particulars. The motive power is supplied by a 6-h.p. vertical motor, set in the fore part of a tubular steel frame. The usual high-tension system of ignition, with wipe contact maker, is fitted. The water circulation for the cooling of the engine can either be by means of a pump or on the thermo-siphon system. It may also here be mentioned that the inlet and exhaust valves are interchangeable with those of the 6-h.p. De Dion motor; in this way the purchase of "spares" will be greatly facilitated. One of the special features of the car is the combination with the engine of a reducing gear, which transmits power through a secondary shaft at 700 revolutions per minute, or thereabouts, according to the sizes of the wheels used. From the motor clutch to the rear axle the power is transmitted by means of a rigid-shaft with a flexible coupling at the clutch end only. The change speed gear is combined with the transmission to the rear axle, two speeds and reverse being provided. The gear, which is always in mesh, is on the skew bevel principle, and claimed to be more silent than the ordinary bevel wheels. Furthermore, it obviates the necessity for breaking the shaft and rear axle where they cross each other, and where the strength is required. The engine is controlled by the throttle and ignition levers; and by means of these, together with the change gear, any speed from four to twenty-five miles per hour can be obtained. The wheel base of the vehicle is 5ft. 4in. and the overall width 4ft. 2in.; the approximate weight of the car is 7 cwt. Steering is controlled by an inclined wheel, while the foot and hand brakes are of the double-acting metal to metal type. Ball bearings are fitted to both the front and rear axles; the road wheels are 28in. in diam., shod with 2½in. pneumatics. The car is neatly upholstered and painted, and has ample room for the fitting of a



Outline Elevation of "Horbick Minor" Car.

third seat or a touring or a travellers' basket. The "Horbick" cars enjoy a well-merited reputation, which the "Horbick Minor" may be expected to fully maintain.

AN automobile club is to be formed for Huddersfield and district.

MESSRS. J. R. RICHARDSON AND COMPANY, LINCOLN, LIMITED, of Lincoln and Saxilby, have now got their new works at Saxilby in running order. The works cover an area of 10,000 square feet, and are fully equipped with the latest pattern machine tools of all descriptions. In addition to the manufacture of cars Messrs. Richardson are devoting themselves extensively to repairs to all makes of vehicles. There are three testing pits, and above the repairs bay runs an overhead travelling crane, by which a car can be easily stripped, the engine lifted out, or, if required, the car carried bodily to any part of the department.

SOME DRIVING HINTS FOR AMATEURS.

WE will imagine that you have passed through all of that kindergarten part of your novitiate wherein you have learned the mysteries of what the various levers, clutches, gears and such like are. You have attentively sat beside a not-over clean young man and been shown by him how near you can come to running into or being run into by someone else, and yet escape. All this and a lot more has been indiscriminately shovelled into your knowledge box, and mentally ticketed "automobile knowledge" by you. Proceeding now upon your matriculation at the Experience High School, you are alone in the car and are endeavouring to make use of some of the "knowledge" you have. You have duly "turned the crank," wisely examined and tested the sparking, lubrication, fuel supply, etc., and have finally got the car started. You are on the second speed, and as you do not desire to secure your stock of experience in large lumps, wisdom will tell you that for the first few times second speed should be your favoured one. As you go smoothly on your way, each moment gaining confidence and losing nervousness, gently press down the pedal occasionally so that you may grow accustomed to its use, and learn how much throwing out the clutch has to do with checking the speed of the vehicle. Be careful, however, to do this slowly, and do not let the car lose too much headway, since picking the second speed up again is not the best thing in the world for your gears.

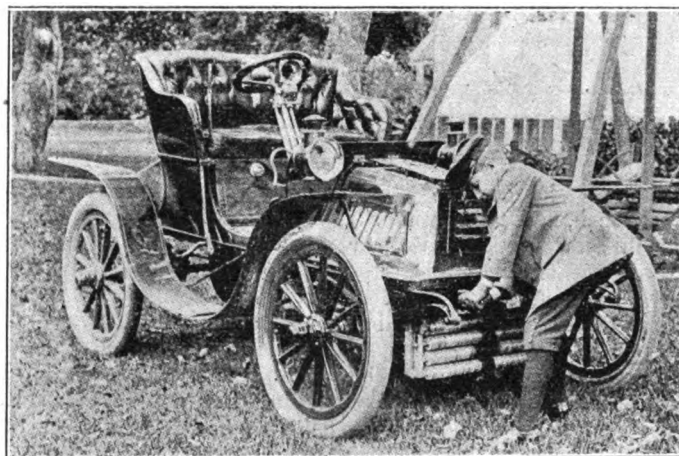
Press down the brake pedal from time to time, and learn how much stopping power it endows you with. When you feel thoroughly at home with the second speed, and realize that you have control of the car, change on to your third, but before doing so be sure to select a fairly good length of straight road to experiment on. The change is effected by pressing down on the clutch pedal; when this is done move the lever into the next notch, and when it is there, let your pedal come up gently. In practising changing speed, it is well to select a down grade, not a hill, but just a very slight incline, as then the car will run on, and you may be more deliberate about your pedal and lever movements. Throw out the clutch frequently, as before advised, and use the pedal brake gently to acquire a knowledge of the effect on your third speed. Practice this well, for by judicious use of the clutch and gentle applications of the foot brake it is frequently possible to slow up just enough to enable you to get through traffic without shutting down. "On my car," remarks Mr. T. B. Trenholme in the "Automobile Magazine," "I rarely use the second and first speeds except for starting, running through crowded traffic and hill climbing." There is, however, one instruction that should be given, and that is, when you have changed on to your third or top speed, you should have retarded or throttled down the engine speed, and by moving the accelerator have given the governor full play. It is not wise for the novice to drive at top speed right off the reel. You can accelerate gradually as you gain more confidence and feel more certain of yourself.

The next step in your education is hill climbing; and the foremost thing in doing this successfully is for you to acquire the trick of changing speed in conformity with the gradient attacked. This, indeed, can hardly be called a trick—it is almost an instinct. To begin with, wherever possible, it is well to put the car at a hill at its best gait on its top speed. It will rush up well at first, but gradually you will feel it slackening. You have the throttle wide open or the accelerator down already, and the only thing to be done in case the car will complete the climb on the top speed is to slow down the ignition. Mind and do this, or the motor will knock—indeed, too early explosions with the engine running slow have been known to break crank shafts. So slow down ignition as the car itself slows.

Eventually it becomes apparent that the car is not going to climb the hill on its high speed, and the throb of the engine becomes accentuated. This is the moment, or, indeed, rather before, but you will learn it as you go—the psychological moment to come down to a lower speed. Changing down is not so easy as changing up, and requires more practice. When properly done, grinding or groaning should in no way be in evidence, and there

should be no forward or backward jerk of the car, which should glide on as though nothing had happened, and you alone in the car should be conscious that any change has been made. To do this successfully, however, is an instinct that comes by practice—sooner with some, later with more, and never with not a few. So you have got to practice it until you have proven which of the three classes you are destined for!

Remember, when in your desire for less speed or more power you throw in the gear lower than the one you have been travelling on, that it is not necessary to withdraw the clutch wholly—indeed, some well-known drivers claim that, if the change is effected at the proper moment, there is no need to withdraw the clutch at all. The clutch should be withdrawn sufficiently to admit of it slipping, just how much varies with every car, and the knowledge of the exact amount will only come with practice. Do not delay until the last moment for coming down to a lower gear, but drive on that gear upon which you are running to the best possible advantage. That is to say, keep the engine running at its normal speed as long as possible by the manipulation of the throttle and sparking. When the speed of the engine begins to drop slightly below the normal, and you feel it labouring, then change, but not before. In passing over the top of a hill, do not be in too great a hurry to change to high speed again. The man who bangs in his second or his third before the engine is ready shortens the life of his vehicle, besides laying up a store



A Young Amateur. (Motor, New York.)

of trouble for himself. If you succeed in surmounting the hill on your first, wait until you hear the engine cut out before you change on to the second speed, and then wait again until the cut out comes before you once more slip in the third.

In coming to a stop learn early to avoid using the brakes. The man who rushes up at full speed to his destination and then jams on brakes should have his car taken away from him. There are times, of course, when the brakes must be used for a sudden stop; but for all ordinary slow downs the clutch pedal should be depressed and the car allowed to slow naturally and easily without being brought up with a bang as though it had run into a wall.

THE British Motor Fittings Company of Birmingham have just brought out a new 6-h.p. single-cylinder vertical high-speed motor. The cylinder dimensions are 4-in. bore by 4-in. stroke, the engine developing about 7½-h.p. on the brake.

"HAZELL'S Annual" now ranks among the reference works regarded as authoritative volumes. As is well known, the plan of the work is alphabetical, and current subjects are brought thoroughly up-to-date, e.g. the fiscal questions, to which 29 pages are devoted. Several new articles have been added, while the figures have been obtained from official sources. Altogether "Hazell's Annual" for 1904 well sustains the reputation gained by earlier volumes.

MOTOR-CYCLING NEWS.

A NEW motor-cycle engine has recently been introduced by Messrs. White and Poppe, Limited, of Foleshill, Coventry. Fig. 3 gives a general view of the motor, which comprises several distinct and advanced features in combination with excellence in workmanship. The cylinder is 80 mm. bore by 85 mm. stroke,

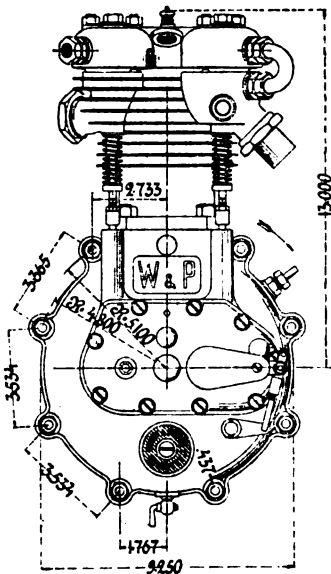


Fig. 1.—Front Elevation of Water-cooled Motor.

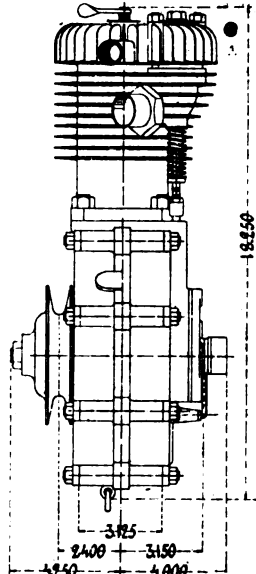


Fig. 2.—Side Elevation of Air-cooled Motor.

the compression being $4\frac{1}{2}$ atmospheres, or about 64 lbs. to the square inch, and the normal speed 1,800 revolutions per minute. The inlet and exhaust valves are mechanically actuated and are interchangeable. An interesting departure is the detachability of the valve seatings (Figs. 4 and 5), the inlet valve and its seat as also the exhaust valve and seat being so fitted that they can be removed for purposes of grinding or examination, a convenience which will be appreciated by those who have had experience of grinding in exhaust valves. Each seating is held by two bolts and lock nuts, and there

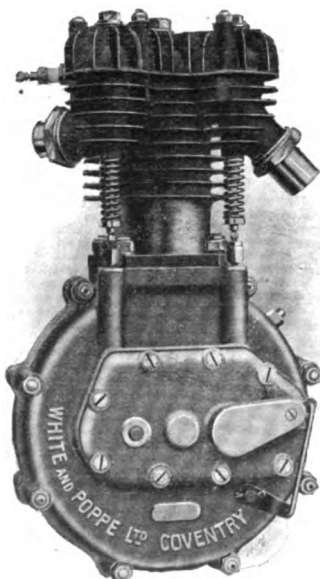


Fig. 3.—General View.

is no asbestos joint to be broken and remade. Provision is made for adjusting the valve lift stem, so that the total length from cam surface to valve seat is maintained, irrespective of wear. This is obtained by forming the valve lifter on rather stouter lines than usual, and into the top of this screwing a

square-headed hardened steel bolt, which may be turned in or out to maintain the desired lift of valve and the correct timing. Large diameter heavy flywheels are used and ample provision is made in the way of bearings, which are of hard phosphor bronze. The engine, which is made both in the air-cooled form and with a water-cooled head (Fig. 1), is fitted with wipe contact for trembler coil, but in this matter some latitude is allowed individual purchasers, whilst the combustion head is so arranged that the sparking plug may be placed centrally over the piston, or directly over the inlet-valve at the side.

A 150 KILOMETRE motor-race was held between Barcelona and Ignatada, Spain, on the 17th inst. Of the fifteen starters only four finished, owing to the bad state of the roads. The event was won by Sr. Abadal, who on a $3\frac{1}{2}$ -h.p. Werner covered the distance in 3 h. 21 min.

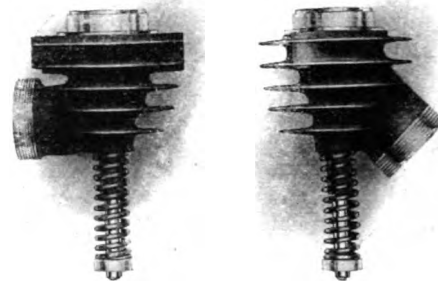


Fig. 4.—Inlet Valve and Seating Fig. 5.—Exhaust Valve and Seating removed from Cylinder.

OUR French contemporary, "L'Automobile," in its last issue gives several illustrations and a long description of a steam motor-bicycle which has lately been completed by M. d'Espugols. The machine is of 2-h.p., the engine being supported on one of the back stays of the frame and driving on to a spur wheel connected with the hub of the rear wheel. The water and fuel tanks fill the upper half of the opening in the frame, the boiler, which uses paraffin as fuel, being located in the bottom half. The machine complete with fuel and water weighs 105 lbs.

THE German Cyclists' Union has fixed June 5th for the start of its motor-cycle reliability trial from Frankfort-am-Main to Berlin.

THE Auto-cycle Club de France proposes to hold a race for motor-cycles from Paris to Bordeaux during the coming season.

At the annual meeting of the Bristol Bicycle and Tricycle Club it was decided to alter the title, so that the club will now be known as the "Bristol Bicycle and Motor Club."

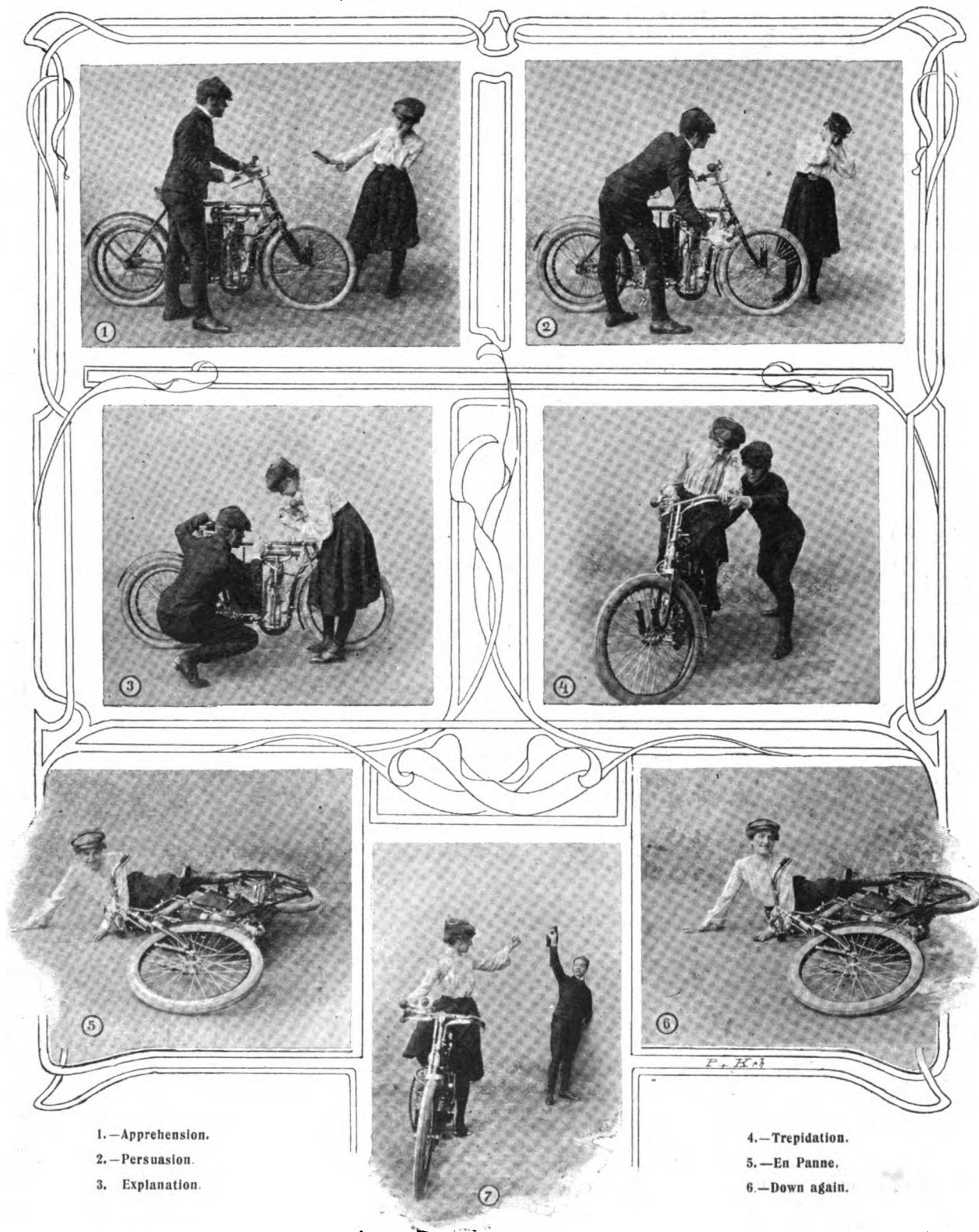
THE second annual meeting of the Liverpool Motor Cycle Club was held last week, when it was decided to admit owners of motor-cars to the club, and to change the title to "The Liverpool Motor Club." The secretary's address is 80, Gloucester Road, Bootle.

A GERMAN firm, the Cyclon Maschinenfabrik, of Berlin, has recently introduced the novel motor-carrier tricycle shown below.



As will be seen, the engine—of $2\frac{3}{4}$ -h.p.—is located in the old Werner position and drives the front wheel by means of a belt. The makers state that, in addition to the rider, the machine can easily transport a load of 4 cwt.

The Ups and Downs of Motor-Cycling.



1.—Apprehension.
2.—Persuasion.
3. Explanation.

4.—Trepidation.
5.—En Panne.
6.—Down again.

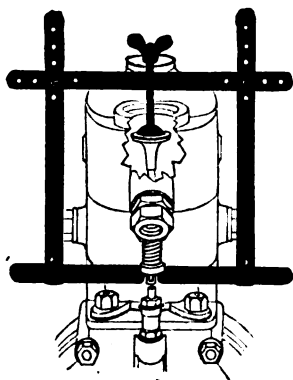
7.—Off at last.

[Allgemeine Automobil Zeitung.]

SOME USEFUL NOTES.



A USEFUL little tool to facilitate the removal of exhaust valves has lately been put on the market by Messrs. Bransom, Kent, and Co. It consists of a light metal frame work; in the centre of the top cross-bar a lug is fixed, in which an endless thumb-screw works. At the bottom of the thumb-screw a bucket washer is fitted, and shaped in such a manner as to make it adapt itself to the head of the valve. At the bottom end of each side of the frame the metal is turned over to form a loop,



in which a bar is made to slide. At one end of each sliding bar is cut a notch, which fits in the recess of the under part of the washer or collar which keeps the spring in position. It will be seen from the illustration that the three operations performed by this tool at one time, namely, holding the valve down, lifting the washer or collar, and compressing the spring, enable the operator to have free use of both hands for extracting the cotter. It is adjustable to fit any size of De Dion type engine, and folds into a small space when not in use.

HAVING had a few cases in which the hoop wire has not been occasionally cleaned and greased, thus allowing rust to set in, the Parsons Non-Skid Co. have now adopted a high grade of nickel steel for the stranded wire forming the hoop. Although this is less prone to rust, it is always advisable to examine and grease the hoop occasionally when reversing the Non-Skid upon the tyre, for the purpose of the wear alternating on each side of the chains. Naturally, if, when adjusting the coupling, the screwed ends of the hoop are allowed to turn, some unstranding of the wire might take place, and therefore a handy twin spanner is now supplied, the use of which absolutely avoids any trouble in this direction.

It does not seem generally recognised that by turning the Non-Skids inside out occasionally the reverse side of the chains can be made to take the wear, and if this reversing is done at intervals, the life of one set of chains in the Non-Skid is quite doubled. The Parsons Company have issued a card of instructions and hints with regard to the use of the Non-Skids, from which we take the following:—Don't pump the tyres too hard when the Non-Skids are in use. If, after prolonged use, the Non-Skid is much too loose when the coupling is adjusted right up, take a link off every other chain, that is, all those sloping in one direction. If still large, serve the remaining chains, sloping in the reverse direction, in the same manner. When inserting renewal chains, or refixing shortened ones as above, do so one at a time when the Non-Skid is upon the wheel, and, after attaching one end of the chain, twist it up as much as reasonably necessary to cause it to lie flat upon the tyre, and not on edge, and then fasten the other end.

STARTING cars, especially large ones, in the cold weather, frequently causes trouble. Now, a very good plan is to fill up the water supply with hot water, as this will greatly facilitate the starting. Another method is to place rags round the inlet pipe close to the carburettor and pour hot water on them; if this is done, the engine will probably start about the second turn of the handle.

THE BRUSSELS AUTOMOBILE EXHIBITION.

THE third Salon de l'Automobile organised by La Chambre Syndicale de l'Automobile de Belgique, under the patronage of the A.C.B., is at present being held in the Palais du Cinquantenaire, Brussels. It was opened on Saturday last, when over 50,000 people visited the show, which is by far the largest so far held in the country. With one or two exceptions the bulk of the large cars are similar to those exhibited at the recent exhibition in Paris. La Société "Belgica" is building cars of 12, 16, and 24-h.p.; these are on standard lines, the four-cylinder engines have both the inlet and exhaust valves mechanically operated off one cam shaft. Noticeable among the vehicles on view is a 16-h.p. chain-driven landaulet, the engine being located under the driver's seat. A new car is the "Baudouin," made in two sizes—15-h.p. and 25-h.p.—by the International Motor Company, Limited, Brussels. A feature of the four-cylinder motor with which they are fitted is that both the mechanically-operated inlet and exhaust valves are located in the head of the cylinder. Only one cam shaft is employed, and the cams controlling the inlet valves are of a special form, and free to be moved on the shaft to give a variable lift to the valves. The governor has been discarded, the speed of the motor being controlled by throttling the gas, this being done automatically when the clutch is disengaged.

The Pipe Company, which will represent Belgium in the Gordon Bennett race, have on view cars of 12, 15, 20, and 30-h.p. La Société de Construction des Ateliers Danneels, of Ghent, which has secured a licence to build Rochet cars for Holland, Belgium and England, shows a 12-h.p. vehicle and an 18-h.p. chassis of this type. La Société La Locomotrice, of Liege, have an interesting exhibit of cars built under licence from the Rochet-Schneider Company. The "Excelsior" cars made by the Société des Automobiles Excelsior range from 6-h.p. to 14-h.p., the two-seated popular vehicle with cardan shaft transmission having an attractive appearance. The Germain Company are well to the front, their exhibit comprising the Hardt two-cylinder two-cycle motor introduced at the Paris Show. La Société de la Transmission Lorenc shows a car fitted with a novel system of transmission, in which neither differential nor change-speed gear is employed.

La Société La Metallurgique of Marchienne au Point display four types—7-8 h.p. and 10-12-h.p. double cylinder and 14-h.p. and 20-h.p. four-cylinder,—the three largest sizes having mechanically-operated inlet valves. The vehicles have pressed-steel frames, and are either driven by chains or cardan shaft as desired; a feature of both is the introduction of a spring arrangement to take up any shock between the engine and gear-box. Les Ateliers Vivinus have one of the features of the Show in the shape of a new 10-h.p. car fitted with a four-cylinder engine, the cylinders being 85 mm. diameter by 110 mm. stroke. In addition, 14-h.p., 16-h.p., and 24-h.p. vehicles are also displayed. Among other petrol cars exhibited, particulars of most of which were given in the report of the Paris Salon, are the Berliet, Cudell, De Dion, Henriod, Delahaye, Talbot, Darracq, Panhard, Linon, Fiat, Mercedes, Oldsmobile, Prosper Lambert, Decauville, Renault, and Georges Richard.

Steam cars are shown by M. Chaboche, of Paris, and M. J. Miesse, Brussels, the latter's vehicle being fitted with four-cylinder engines and chain drive. A big display is made of motor-cycles, these including the Minerva, F. N., Sarolea, Red Star, Antoine, N.S.U., all of which are already on the English market. Anti-skidding bands for tyres on view include the Samson-Hutchinson Company and "Perfecta," the latter being made by M. T. Houben, of Verviers. Similar devices are shown by Messrs. C. Durand and Co., Paris, and M. G. Desclée, Jemeppe-sur-Meuse; the latter's arrangement consists of a chrome leather band, on the tread of which are fixed thin steel plates of such a shape that they form a continuous strip; the band is held in position by straps at intervals round the rim. The Exhibition closes on February 4th.

HERE AND THERE.

THERE are now 1,973 licensed motor-car drivers in Chicago.

THE Watford Engineering Works have started a garage and repair depot for motor-cars.

MR. BULLER, of Bridge Street, Denbigh, is preparing his premises for the repair of motor cars.

THE Automobile Club's Exhibition at the Agricultural Hall, London, in March, will be most brilliantly lighted, sixty arc lamps supplementing the usual means of illumination.

CALLING in at the depot of the Farman Automobile Company the other day we had an opportunity of inspecting a 10-h.p. Argyll car which has been built for Mr. Justice Romer. The body is on novel lines, and is so different from the usual type that it is difficult to give it a name; it is of the covered variety, and, rising flush with the dash board, encloses all the seats, as well as the steering and control levers and

MRS. ROWLEY, of Sylvan Park, Kells, was the first lady in Ireland to obtain a motor-car driver's licence.

AT a meeting of the Western Section of the Scottish Automobile Club on Monday, the 1st prox., Mr. R. Drummond will read a paper on "The Evolution of Roadmaking in Scotland."

THE Humber Company have brought out for the 1904 season a Royal Humberette fitted with a 6½-h.p. governed engine, three speeds and reverse. We understand that the London agents, the Victoria Carriage Works, Limited, have one of the new vehicles available for trial.

A DIFFICULT tour has been undertaken by Colonel W. C. Greene, of Phoenix, Arizona, who recently purchased a French touring car, and has undertaken to drive it from La Cananea, Mexico, where he owns extensive copper mines, to San Francisco. The distance is about 1,000 miles, much of it over arid desert country, which will test the capabilities of the vehicle to the utmost.



The 10-h.p. Argyll Car built for Mr. Justice Romer.

pedals. In fact, it is a kind of enlarged brougham, with a large glass-panelled front. Access to the car is by means of a door located close to the dashboard; within is a single bucket seat for the driver, this leaving ample room to get to the rear seats, which will accommodate three persons. We understand that Mr. Justice Romer intends to drive the car himself, hence the novel arrangement of the seats.

BOATS at sixpence per hour, said Mr. J. Piggott, L.C.C., in the course of a lecture at the City of London College, Moorfields, E.C., have been placed on the lakes in Finsbury, Battersea and Victoria Parks, and at the latter two places motor-launches ply at a penny a trip.

THE Tideswell Parish Council have put forth a scheme for making a new road at Miller's Dale (Derby). The proposal is to make a new road beginning at the foot of Miller's Dale bank, and proceeding behind the church to the station. The gradient of the proposed new road would be one foot in twenty-three, whereas the gradient of a portion of the existing road is one in eight—a dangerous point for motorists.

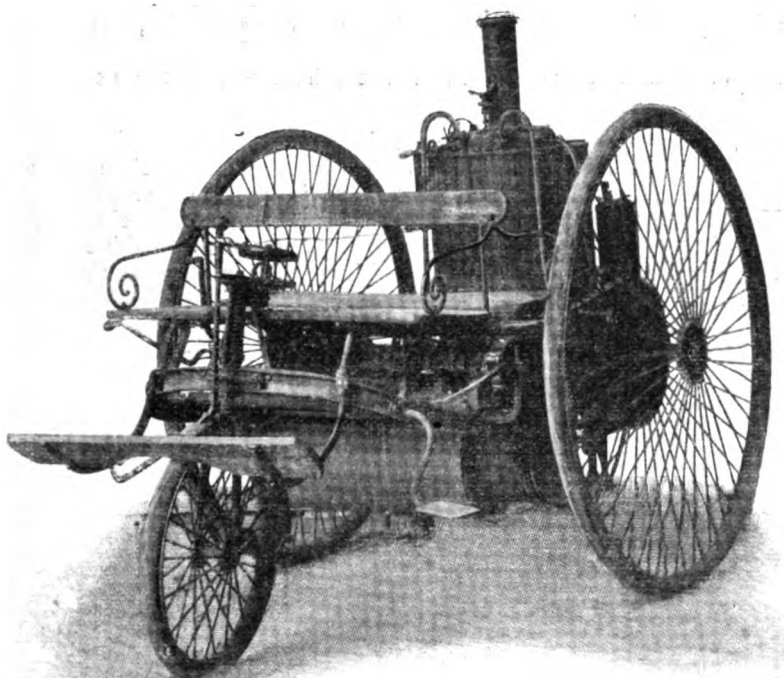
THE Parish Council of Langtoft—six miles from a station, and the same distance from Driffeld—at its last meeting resolved to petition the North-Eastern Railway Company for a service of motor 'buses from that village to Bridlington, via Kilham.

MESSRS. PETO AND RADFORD, LIMITED, have been registered with a capital of £40,000 to adopt two agreements (1) with Messrs. Peto and Radford, Limited, and (2) with the P. and R. Storage Battery Company, Limited, and to carry on the business of manufacturers and dealers in electric meters and any other electrical instruments.

MESSRS. G. DAVENPORT AND COMPANY, of Hatton Garden, E.C., send us a circular description of a new combined stop-watch, speed indicator, and minute recorder they are introducing into this country. It is known as "Le Chauffeur," and while of the size of an ordinary watch, it performs three different functions, showing at a glance—1, the ordinary time; 2, the time occupied from any given point to another; 3, the time occupied per mile, and the speed per hour from mile post to mile post—from 12 to 150 miles per hour.

It is suggested by the General Purposes Committee of the Oxford City Council that the ten-mile limit should be applied to the whole of the streets of the city.

Up to the 10th inst., no less than £443 had been taken by the Birmingham Watch Committee for registering automobiles and licensing drivers.



Quite a number of ancient steam cars have lately been brought to light. The accompanying illustration shows a steam tricycle built in 1881 by M. Rene Thury, the chief engineer of La Compagnie de l'Industrie Electrique et Mecanique, of Geneva. With it he was able to attain a speed of 25 miles per hour—a record for the period.

A NIGHT shift has been organised at the works of the Hozier Engineering Company, Limited, and facilities thus obtained for the production of fifteen Argyll cars per week.

MESSRS. ALFRED RUSSELL AND COMPANY, of Walsall, have brought out a patent shutter for motor lamps. The reflector of the lamp is made to shoot in front of the light, destroying the dazzling effect when desired, and in its normal position remains in the same way as the ordinary fast reflector. The firm have also patented a ventilating tube for paraffin side-lamps, which is being subjected to a severe test on fast cars.

MR. DONALD MENZIES left Cape Town for Matjesfontein recently on a 7-h.p. Panhard and Levassor car, belonging to the Hon. J. D. Logan, M.L.C. He arrived at Matjesfontein after an absolute non-stop run from Cape Town to Worcester of 7½ hours, and from there to Matjesfontein in 6½ hours, making a total running time of 14 hours from Cape Town. This car is the one which did such admirable work for Mr. Logan during his electioneering campaign, covering over 6,000 miles in less than three months.

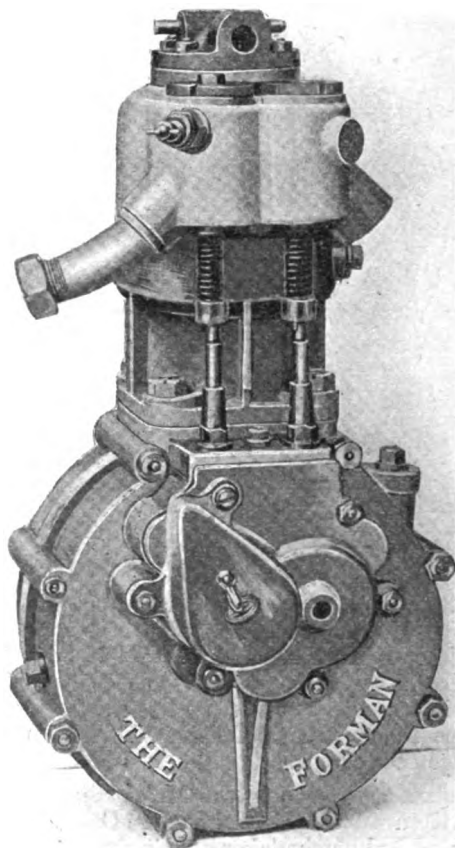
WE learn from the Sirdar Rubber Company, Limited, that twin tyres are not only being adopted on the driving wheels but also on the steering wheels of public service cars; for instance, at Hastings, where the double-deck omnibuses had single tyres, they now have twin 2½ inch tyres on the steering wheels, and twin 3 inch tyres on the driving wheels. We may also mention that the Sirdar Company are now prepared, under certain conditions, to contract to keep public service motor-cars and omnibuses in tyres per 10,000 miles. The rate charged depends upon the route over which the 'buses travel, the speed, the weight of the vehicles, and the number of passengers they carry.

THE first automobile registered in Paisley was a motor-lorry belonging to Messrs. A. Bell and Sons, Limited, of the Gleniffer Laundry, Paisley.

"WHO'S WHO" for the current year is again published by Messrs. A. and C. Black. This has become an indispensable work of reference and can be relied on for the accuracy of its biographies of leading men and women in every department of life. Within its 1,700 pages are notes on all the names that appear with any frequency in the newspapers, while in the companion volume, "Who's Who Year Book," is presented the tables which have formerly appeared in the larger volume.

BEFORE Mr. Justice Wills and Mr. Justice Kennedy, in the King's Bench Division of the High Court, the case of "Gilmore v. Slack" has been heard. The plaintiff appealed from a decision of the County Court Judge of Cheshire. He was the owner of a motor-car, and brought his action against the proprietor of a dogcart to recover damages for injury to his vehicle caused by a collision. The defendant counterclaimed for damage which he had suffered by the occurrence. After hearing arguments, Mr. Justice Wills did not see that the Court could overrule the conclusion at which the County Court Judge had arrived, and the appeal was dismissed with costs accordingly.

THE illustration given herewith shows a new petrol motor, which has been specially designed for use on motor-cycle fore-carriages and small two-seated cars, and the propulsion of motor-boats, by the Forman Motor Company, Limited, Coventry. The engine, which develops 5-h.p. at a speed of 1,200 revolutions per minute, is extremely light, its weight being only 90 lbs. The cylinder is 90 mm. bore by 90 mm. stroke, while both the inlet



and exhaust valves are mechanically operated. The motor is made so that it can be fitted in any position on a cycle frame, either vertically or obliquely. It will be noticed that the top of the cylinder is fitted with a special fixing, by means of which the engine can be slung diagonally, while if the motor is required to stand vertical in the frame the four bolts of the crank chamber are easily adapted.

CORRESPONDENCE.

DRY BATTERIES AND ACCUMULATORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am interested in the letter on dry batteries in the last issue. May I point out a fact which is not generally known, and that is that every user of dry batteries should have an ammeter to test his cells? It is not a voltmeter that is needed, although this is thought to be the instrument one should have. It is a fact that there may be to all appearances a spark strong enough to do good work, while there is not amperage enough to jump the current through the mixture when under compression. I have seen a battery on a motor-cycle that would show a good spark when testing by making and breaking the circuit, but when testing with the ammeter the battery would not have any effect on the meter. If you have an amperage of from 6 amperes and upwards, you may be sure that you will have the proper voltage to do good work. The amperage is the volume of force, and the voltage is the pressure under which the current flows.—Yours truly,

F. L. EDMUNDSON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the letters on this subject in the *Journal*, I have had considerable experience with dry batteries and am strongly in favour of them. I have used them almost daily for nearly five years, in fact ever since my machine caught fire in the days of tube ignition. (See *Motor-Car Journal*, March, 1899). The battery I now use consists of four "Ideal" cells. Each is enclosed in a cardboard case, and the whole in an india-rubber envelope. After packing them carefully in the battery case, you need not trouble about them for the next six or eight months. The batteries should be tested when new. I don't know the exact number of amperes they should give, as my ampere-meter only registers to ten, but it should be well above this, and they should continue to work well until they are down to two or three amperes. Care should be taken, in testing, to only momentarily close the circuit as using an ampere-meter is practically short-circuiting the cells and would waste considerable current if continued for any time. I think it is a great comfort to know that you are sure of having a good store of electricity with you for some months, and that you need not trouble about testing each time you start out.

If the batteries are giving out after five or six months, you will have warning by occasional misfiring, and you may have to lessen the distance between the points on the plug, but you will always be able to get home. When these symptoms appear, and you find on testing that there are only about three amperes of current it is time to order a new set, and in the meantime the old ones can be considerably revived by boring a hole through the pitch at the top and putting in a solution of sal-ammoniac or even common salt.—Yours truly,

GEORGE A. E. ROBERTS.

THE MOTOR-CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I, for one, wish to protest against the regulations in connection with the new Motor Car Act, on the ground that it is not only unfair but a very serious matter to compel a reversing gear to be adopted on cars already running. It might safely be left to the makers for the future. It will put many cars on the scrap heap, and the worst is they are mostly owned by persons not able to replace them.—Yours truly,

B.N. 9.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Whilst learning the art of driving a car is it the law to take out a licence during the time you are a pupil? therefore giving freedom to, perhaps, a reckless youth to drive about the streets at any pace covered by this legal document, which he can produce at any time and profess to be an expert driver; perhaps an expert driver to the common danger of the public. Therefore is it fair to grant a licence to a person who is only learning to drive and cannot take charge of a car? It is this kind of driver who chiefly creates all the trouble by having accidents owing to ill-judgment and reckless driving. The careful, considerate driver is tarred with the same brush at once.

Should like to be enlightened upon this point. Do you have to take out a licence before or after you can drive?—Yours truly,

M. A. N.

PICRIC ACID AND PETROL MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to "A. J. H.'s" letter in the last issue, there is no doubt that picric acid does under certain circumstances, more particularly with small and high-speed motors, increase the power obtainable. I have known, however, of objectionable corrosion in the cylinder following its use, and, to all appearances, due to it. It is fairly soluble in petrol, and therefore it would seem undesirable to use any method of pication in which the proportion dissolved was not definitely fixed, such as passing the petrol over a receptacle containing solid acid. It does not undergo complete oxidation readily unless mixed with an

oxidising agent (as is usual when employed as an explosive), and hence the evolution of secondary products which may be injurious to the cylinder is possible, more especially if the amount passing with the petrol is not under definite control. It may be advisable to point out that picric acid is made highly explosive by mixture with any nitrates, chlorates, or even some metallic oxides, and even a trace of lime may have this effect. Part of its effect in a motor, and probably an important part, is almost certainly due to its increasing the rapidity with which the explosion is propagated through the mixture, an effect which might also be obtained by the preferable method of a more energetic ignition, or more than one pair of sparking points for the same.—Yours truly,

R. W. B.

THE "SPYKER" CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to D. H., I have driven my 20-24-h.p. Spyker 8,000 miles during the last six months. I had one of the first of the cars that came into England. Personally, I think it equal to any car in the market, and cheaper than most. It is well built, very simple to drive, reliable in every way, silent, and equal to a maximum speed of thirty-eight miles on the level. I have gone up long, steep hills, one in 5 and 6, with five up.—Yours truly,

J. W. BROADHEAD.

BENZ v. LIGHT CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having owned and had a deal of experience with a 3½-h.p. Benz car, I have found one very effective way of increasing the power is to fit a crank with a longer stroke; this not only increases the compression, but, of course, draws in more gas.—Yours truly,

A. ALBRIGHT.

THE FATAL 13.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As you have published the names of the proud possessors of No. 1 under the new Act, it would be interesting to have a list of those who registered under No. 13, and also a list of troubles which have accrued owing to their having accepted such an unlucky number.

Personally I accepted it without any feeling of superstition, and all would have been well had it not been for an unfortunate note in your issue of the 9th inst. in which you drew attention to the fact that in Salop no one would have number 13. Since then the female portion of my community refuse to go in the car till the number is changed; the facts that we have all had influenza, that the clutch seized one day last week, the rubber ball of the horn was lost on a trip, that our donkey will not pull its cart any longer, are all attributed to this number.—Yours truly,

A. K. 13.

EXPERIENCES WITH THE PARAFFIN CARBURETTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Two of your correspondents ask for information re the "Trusty" paraffin carburettor. I will give mine in short:—I bought one about five months ago and spent three weeks over it trying to make it work. Twice I was successful and it worked all right, only with clouds of smoke. I tried altering the lift of the valve and everything but could not do anything with it. I had a sleeve fitted round the exhaust pipe and the carburettor attached quite near the pipe and engine (2 ins. off), but could get no satisfaction from it. The carburettor was finished off in a very poor manner. Aluminium joints! What good are these? The carburettor was full of sand, which was most difficult to get out. The joints leaked and the threads had small blow holes which were most difficult to find. I believe the carburettor has since been somewhat improved on. I consider it very expensive even if it had worked well. I add my name out of fairness to the makers and to justify my opinion.—Yours truly,

W. WINDHAM, LIEUTENANT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to Mr. Mabey, and "A Man in Blue" re the "Trusty" carburettor, I purchased one of these some little time ago and am using it on an old 7-b.h.p. stationary engine I have had in use about seventeen years. Formerly it worked with slide and lamp ignition, using benzoline; this I have done away with and employ electric ignition. I bought the carburettor really for a 16-b.h.p. Crossley oil engine, but I had not the time, nor the engine at liberty to thoroughly test it, so I tried it on the one mentioned. At first I could not get any good results, but I found it was owing to the needle valve having too much lift; this I altered, and since then I have had no trouble. I believe the makers are altering or doing away with the trouble I had with the valve. When starting up I use benzoline or petrol. I do not run more than a couple of minutes on this, when I change over to a mixture of benzoline and paraffin; sometimes it is half and half, and sometimes it is more paraffin.

But when I want more oil in the tank I put paraffin, and up to now the engine runs well, and with no disagreeable smell. I have run six hours to-day without a jolt. My opinion, however, is that the consumption on paraffin is a little more than on benzoline, but that is nothing compared to the saving in the end. I have not tried a "Trusty" carburettor on a car, but should like to know results if any of your readers have had any experience with one, because, if the carburettor will not work satisfactorily on a car engine, I think I am in a position to make it. I may say that under certain conditions the carburettor will not work on my engine on paraffin alone, but this may be owing to the carburettor being too large for the size of engine, or a fault of the engine valve. I cannot say at present whether it is either of these; perhaps in a week or two I may be able to tell you more about it. I trust the foregoing remarks will help your correspondents. I may add that I have no interest in the carburettor other than its services to me.—Yours truly,

TALBOT C. CLIFTON.

THE REPAIR OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In connection with the letter in your issue of the 16th inst. regarding motor repairs I would be glad to have the opinion of some of your readers as to a few items in an account just sent in to me. My car is an 8-h.p. tonneau. Some of the items in account are shown below.

	£	s.	d.
New piston head, cast, turned and bored ...	3	0	0
New gudgeon pin ...	7	6	
Making and turning back spring studs ...	1	2	0
Casting and turning and boring bushes in crank case, with use of engine and lathe ...	18	6	
3 bronze bushes casting ...	12	6	
1 new commutator ...	1	2	6
Time 18½ hours to back axle ...	18	6	
To cutting 4 new gear wheels ...	3	7	6
To fitting back axle together ...	19	0	
To fitting engine and axle to car, time 18½ hours ...	18	9	
To making a wheel (19 hours) ...	19	0	
New hub, cups and bolts ...	1	5	0
Spokes and fellows ...	15	0	
Hoop wheel ...	3	6	
2 Continental covers, rims and bolts ...	21	1	4
Putting new rim in hind wheel, repairing tube and cover, 18½ hours (rim paid for) ...	18	6	

Is it customary to charge for the use of the repairer's gas engine and lathe, this item amounting in all to several pounds? I may say that these are what seem to me rather glaring instances of overcharging. The total amount is close on £100 for less than six months' work. The opinion of some experts on these items will oblige.—Yours truly,

CHIRURGEON.

NAME WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be glad if you would kindly help me in finding the name and address of the driver of motor-car No. A. or B. 179, a 10-h.p. M.C.C., who was driving through Tottenham on the 19th inst. at 3.10 p.m. He has probably ere this received the usual "blue slip." I shall be pleased to appear as witness in defence, as I happened to witness the occurrence, and also noted the two police officers and actually heard their remark when the car passed.—Yours truly,

E. C. PRESTWICH.

[We shall be glad to place the owner of the car in question in communication with Mr. Prestwich if he will send his name and address.]

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to "Roller Bearing," if plenty of grease is used with the back wheels of the Wolseley, I do not think he will find solids affect the ball bearings. I have once found a ball split in the back axle, but I had that day driven eighteen miles over the worst and roughest road I have ever been fated to travel on. Since then I have never had any trouble with balls. I fill up the wheel cap with white grease (full up), and then take out the screw and give it half a squirt full of lubricating oil. This I find answers far better than putting in gear oil, etc.—Yours truly,

P.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should like to set the minds of your correspondents at ease on this question, as I have tried both pneumatics and solids, and there is no doubt whatever that the former afford considerably more comfort in driving.

I have noticed that one of your correspondents states that the pneumatic is unreliable and not worth a straw to business men. Allow me to advocate the process of the Glasgow Motor Tyre Company; by their

method, in conjunction with the Cassell's unpuncturable band, they guarantee pneumatics as reliable as solids.

I may say that after trying their process for at least six months I have never known a puncture or tyre trouble.—Yours truly,

R. M. R.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to the letter of your correspondent "Roller Bearings," I may say that my cars which are fitted with solids have ball bearings, but I have never broken a ball yet. I have known cars fitted with pneumatic tyres to break the balls, and the reason is easily understood; the ball races get worn, and, instead of being seen to, a channel is allowed to wear in them in which the balls get jammed and break, but it is an easy matter to examine the axles and put new collars on immediately there is any sign that the ball races become worn; the cost, I believe, is only a few shillings for a set for the Wolseley car.

In reply to your correspondent "Tonneau," I may say that one of my cars has a tubular frame, and that several of my friends have cars made with tubular frames, on which solids are running satisfactorily; of course, one must be careful to choose the right solid rubber tyre, and I may mention that I have the same solids that did so well in the 1,000-miles trials of last year.—Yours truly,

EXPERIENCED USER.

LIGHT CAR EXPERIENCES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "L.'s" enquiry appearing in the *Journal* of the 16th inst., I have pleasure in giving my experience of an Argyll car, which I hope may be of service. Two and a half years ago, after examining carefully the construction of all the cars in the market, I fixed upon an 8-h.p. Argyll, and after the machine had been in my possession a month I was so satisfied that I disposed of my horse and trap, and used the car for business as well as pleasure. At the end of a year I decided to go in for an increased power of machine, and ordered a 10-h.p. of the same make, which has also given me entire satisfaction. I may state that I now have occasion to be on the roads almost daily; my journeys average from 3 to 100 miles, and I invariably manage my calls well up to time, and from the beginning I have never lost time on the road through any breakdown. I feel certain that the Argyll will give "L." pleasure and satisfaction all through, and he may consider himself fortunate in fixing on this make out of the many cars now offered in the market.—Yours truly,

W. M. WALLACE.

FRIGHTENING HORSES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent "Concorde" rather favours the idea that horses are less frightened by a car rushing by than one driven slowly.

The motorist that "rushes by" neither sees nor cares for the fright that may be given the animal, nor the after effects of same, and apparently knows nothing of the difficulty of getting that horse past a motor when next they meet.

As I use both horses and motor daily, I must state emphatically that the man who "rushes by" is wrong, and ought to be heavily fined.

I was riding a horse that passed motors—driven carefully—without any trouble, but a month ago a motorist "rushed by"; the frightened animal jumped right off the road, and since that event she stops dead the moment she sights a motor, and is coaxed by with difficulty. Last summer a friend had a horse that was frightened by a car appearing suddenly, noiselessly, and without warning round the bend of a hill. She shied and fell the next time she saw a motor, then bolted and smashed up the trap; before this her manners were perfect and she passed motors with out trouble.—Yours truly,

M.R.C.S.

P.S.—I have used solid tyres for the past thirteen months; they give trouble by broken balls destroying ones—six new cones in the year. This might be remedied by plain phosphor bronze or gun-metal bearings.

DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Seeing that you invite correspondence on the above subject, I have thought it well to give you my opinion on the matter in question. Mr. Edge is undoubtedly right when he says "There is a dearth of good drivers." But is it not necessary to first know what constitutes a good driver, and it is with a desire to arrive at some conclusion that I write this letter. Let me tabulate the qualities which are absolutely essential. First, courage. Second, ability. Third, charity. Let us deal with these essentials in their order.

By courage I mean that the driver knows that the car he has under hand is liable to go wrong, that it is as yet a new science, and that he must face bravely every difficulty which is likely to arise; he must learn, and that truly, that there is a cause for everything, and that it is his duty to find that cause, and to patiently remedy any defect arising.

When anything goes wrong on the road, he must not lose his temper, and inwardly curse the thing, but, truly courageous, he must ever keep a good heart in his body, set to work quietly, and go about his work in a methodical manner. Courage also means that he must act coolly under all circumstances, remembering that the man who can keep cool always wins in the end. Who does not know the driver whose conception of courage is that it consists of rushing along at a speed calculated to knock the car to pieces in a very short time. He imagines that to drive at top speed is calculated to impress people with his daring, that it conveys to his master an idea that he is skilful, and that he has perfect control of his car. Poor mistaken, rash men. The careful, steady, courageous driver is he who knows that speed is not everything, and that true courage consists in an all-round watchfulness, ready to act instantly, should occasion arise.

Now as to ability. Driving does not consist in guiding; any child can steer a wheel, the thing is easy, and counts for nothing. A driver must have a perfect knowledge (or at least endeavour to reach that end) of the car he has under hand; he must make it his whole study; not only must he be a theorist, but he must have a practical grasp of the why and the wherefore. He must know the cause, and must never cease until he "knows how the wheels go round." Let him practice, practice, practice, until he can be trusted to remedy all faults while on the road. He must endeavour to show to his master that he is competent in every sense of the word, that he knows the thing, and that when commanded he is always ready. His master will then rest content in the knowledge that there is a man at the wheel who is to be trusted, and that when going on a journey he is trusting himself to one who has his interest at heart, and that "they will arrive."

With regard to charity the driver must always bear in mind that the car he is driving is not his, that it belongs to another who employs him to do all the work in connection with same. He must treat the car as if it were his own, and show in all things true economy. The foregoing virtues are capable of much expansion, but I am confident that the driver who embodied these into his work could command his own price. I am well aware that there is also the question, "What constitutes a master?" but this I leave to a master, and subscribe myself.—Yours truly,

A. K. 33.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Being a constant reader of your *Journal* and also a motor mechanic and driver, I have read with interest the letters re drivers. I have found it very difficult to obtain a respectable situation, and am still on the look-out for one. There are such a great many so-called driver-mechanics who obtain situations at say from 25s. to 30s. per week, that it does not give the practical man, who has served his time to the trade, a chance. I quite agree with Mr. S. F. Edge that the majority of men who represent themselves as driver-mechanics can only just manage to drive a car. Let them, however, get stuck miles from anywhere and then the owner will find out the inconvenience and expense incurred. A good driver must be capable of driving at the speed his employer wishes; if any breakdown occurs on the road, he must be able to rectify it quickly; he must be willing and obliging, and at all times he must have his car ready and in first-class order. Then I think any reasonable employer would appreciate his services. If a driver is a capable mechanic, it should not be necessary to take a car to a repairer's to be overhauled. The driver ought to be able to replace any part that may have become worn or damaged.

I find it difficult to get replies to advertisements if one does not live in or near London. The provincial man does not seem to have a chance of getting a berth in the south of England.—Yours truly,

H. HART.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to the point raised on the above subject, I should like to give my views as a driver. I have had six years' experience

driving commercial cars and trade vans. Eighteen months ago I thought I would like to try private service. The position I then had meant travelling throughout the kingdom from town to town, and, being a married man, I found it very expensive paying lodgings and keeping a home as well. I gave a month's notice to my employer and answered advertisements to try and get a position, but I could not do so, though I had first-class references and did my best to get work for two months. In the end I went back to the firm I left, where I am at present. I built the car I am now driving, and of course thoroughly understand repairing as well as driving. I know several first-class men in Liverpool alone who cannot get work, and yet there are boys that have a week's tuition (paid for) who get employment as soon as they can steer a car.—Yours truly,

DRIVER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should like to state my experiences as a motor-driver and mechanic. I am a thoroughly trained mechanic, and can do erecting as well as fitting, and also hold a public service driver's licence. Now, as a mechanic I can get £2 per week (54 hours), but as a driver I am offered the same or even less (never more) per week, Sundays included, and also never know when I am on duty or off. Now, as there are any amount of car owners who engage driver-mechanics at about 30s. or 35s. per week, the question arises, "are they really mechanics?" I contend that they are not, and not only do they keep good men out of work, but get them a bad name as well. Another point is this. Some employers think there is little work to do on a car, and consequently expect their drivers to do odd jobs. My experience teaches me that if one is conscientious, he can always find plenty of work to do on the car or in the car-house, providing the car is used pretty frequently, without wanting any other jobs found for him.

With reference to drivers taking their friends for rides on the car, I think if owners would let their driver, when they engage him, thoroughly understand they won't have it, it would stop what is undoubtedly a gross liberty for a driver to take. As for myself, I am thoroughly disgusted with a driver's lot, and intend in future to keep in the shops.—Yours truly,

CHAMELEON.

IRON CASTINGS.—Mr. H. R. Allan writes: "Can any reader let me know of a firm which makes iron castings for steam motor-car engines?"

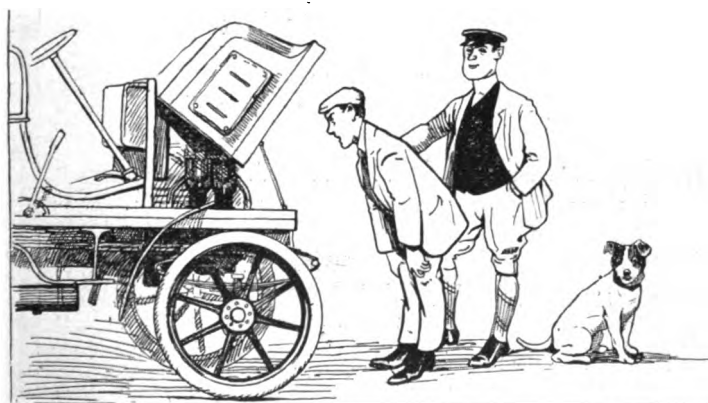
AN AMATEUR-BUILT CAR.—Mr. W. Bashford writes:—"I shall be glad if you will kindly note that the photo of the car which you so kindly published last week was taken while the car was on its trial runs, and the body was only a rough-built seat; since then the car has been fitted with its proper body and will compare with most cars on the market."

ALCOHOL FOR MOTOR-CAR USE.—A correspondent writes:—"I shall be glad to know whether alcohol, such as is produced in France for running motor-cars, etc., can be obtained in England." We do not know of any firm supplying alcohol in England. Should any of our readers have information on the point, perhaps they will communicate with us.

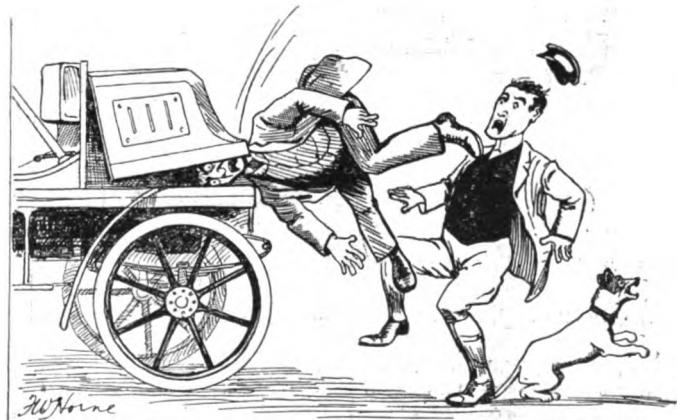
WINTER COMFORT writes:—Is there any firm making a set of connections to enable me to make use of the exhaust gases or cylinder-cooling water for heating the vehicle in winter?

CELLULOID.—"Storage" writes:—"Will some of your readers kindly give me the address of celluloid merchants who make a speciality of celluloid sheeting about $\frac{1}{4}$ in. thick, perforated, corrugated celluloid, celluloid tubing, and vent plugs, for small accumulators?"

MICHELIN TYRES.—In answer to "Simon" who asks "Will an 820 by 90 Michelin inner tube fit a 760 by 90 tyre?" there is no such size as 820 by 90, the size being 810 by 90, or 820 by 120. The tube in this size of tyre, if it is to be used with a 760 by 90 cover, should be cut down a matter of six inches, as, if it is put in at its present length, it might be liable to buckle up and burst.



Curiosity.



Bonneted!

OUR DIRECTORY OF "NUMBERS."

[ALL RIGHTS RESERVED.]

Below is a further instalment of Motor Car Numbers. This List will be continued weekly, and Motorists who have not yet communicated with us are invited to forward their Names, Addresses and Numbers, with any observations they can offer as to the working of the new Act.

Ashworth, Edmund, Shavington Avenue, Hoole, Cheshire...	F.M.	15
Altham, J. L., Burnley	C.W.	6
Atkinson, C., Burnley	B.	10
Arnot, James, M.D., Brampton, Cumberland	A.O.	56
Ambrose, A. R., Piddington, Northampton	B.D.	157
Asquith, J. H. S., Halifax	C.P.	22
Aberdare Valley Motor Car Co., Aberdare	L.	15
Baldwin, Mr., Halifax	C.P.	2
Burnell, G. W., Lower Brook Street, Rugeley	E.	9
Brown, G. H., Rugeley	E.	11
Burnell, H. E., Rugeley	E.	14
Boden, H. S., The Beeches, Sherborne, Dorset	B.F.	4
Brydges, J. K., Electricity Works, Eastbourne	A.P.	225
Beavers, F., Cuzgarth, Adel, Leeds	U.	19
Burnyill, J. R. J., Crowle	B.E.	38
Bush, H. E., Fore Street, Chard	Y.	111
Browne, Mrs. James, 98, Sandgate Road, Folkestone	D.	309
Brown, G. T., East View, Chorley, Lancashire	B.	205
Bishop, F. C., Wolverhampton	B.	253
Bashford, W. T., Ivanhoe, Walm Lane, Cricklewood	D.A.	17
Bentley, Walter, Wyke House, Ashleigh Road, Leicester	A.	23
Bellingham, H., Burnley	B.C.	28
Bolton, Frank, Uttoxeter	C.W.	18
Barnard, E. B., Grove Lodge, Sawbridgeworth	E.	50
Bamford, C., Beaconside, Lichfield	E.	51
Brady, Herbert, 8, Ashton New Road, Manchester	A.R.	233
Bridgman, G. S., "Courtland," Torquay	A.R.	234
Blewett, W. T., Hayle	E.	74
Baldwin, J. H. L., Halifax	N.	257
Baldwin, W., Northiam, Sussex	T.	30
Clarke, William, Wolverhampton	A.F.	40
Clark, Alfred, "Holton," Motcombe Road, Bournemouth West	C.P.	2
Clark, A. C., Ryde, Isle of Wight	A.P.	196
Glover, G. A., The Mill House, Kempston, Bedford	D.A.	19
Clements, G. H. H., Burnley	B.F.	33
Coop, J., 7, Mornington Road, Southport	D.L.	31
Cochrane, Wm., 304, Regent Road, Salford, Manchester	D.L.	32
Cox, Rennie, Colne, Lancashire	B.M.	36
Caldwell, T., Hampden Street, Bolton	C.W.	7
Clay, Mr., Halifax	B.K.	14
Clay, Mr., Halifax	N.	275
Crossley, C. W., Halifax	B.	120
Crossley, Edw., Halifax	B.N.	8
Clark, Douglas, 15, Landport Terrace, Southsea	C.P.	3
Cousins, G. S., Bury St. Edmunds	C.P.	4
Crossman, Mr., Uttoxeter	C.P.	5
Cammond, J. N., Ormsdale, Fortwilliam Park, Belfast	C.P.	7
Cornell, A., 3, High Street, Tonbridge	B.K.	39
Carver, A. D., Woodlands, Gorton, near Manchester	B.K.	31
Cheeld, Sydney, Chesham, Bucks	C.F.	74
Dixon, J. S., Wolverhampton	F.	53
De Gruchy, Thos. H., 781a and 787, High Road, Leytonstone	O.I.	6
Darke, F. G., Waterloo House, London Road, Sutton	D.G.	17
Dupuis, F. J., Rugeley	D.G.	18
Dee, F. Shapland, On Tour "Lady of Ostend" Co.	B.	698
Davey, F. E. R., Cranbrook Road, Redland, Bristol	B.H.	31
Davey, F. E. R., Cranbrook Road, Redland, Bristol	D.A.	15
Drake, W., Halifax	F.E.	15
Denton, F., Halifax	A.	718
Evans, William, Wolverhampton	E.	84
Eastbourne, Borough of	A.	2473
Evans, Osmond, Wolverhampton	A.E.	117
Evans, George, Wolverhampton	C.P.	11
Evans, W. H., Wolverhampton	C.P.	15
Evans, K. H., West End House, Ashburton, S. Devon	D.A.	23
Earnshaw, W., Halifax	A.P.	289
	A.P.	291
	A.P.	293
	A.P.	295
	D.A.	5
	D.A.	4
	D.A.	38
	T.	147
	C.P.	20

Earnshaw, W., Halifax	C.P.	21
" H. "	C.P.	24
Forrest, S. A., Abbeydore, 14, Chambers Road, Southport	B.	260
Friwell, C., Ealing	H.	216
Francis, W. J., 234, High Street, Barnet	H.	420
Fowke, Charles R., Billesdon Vicarage, Leicester	A.Y.	76
Feutiman, Alfred, "Westwood," Grove Crescent Road, Kingston-on-Thames		
Ford, Harry, Uttoxeter	E.	111
Fletcher, J., Llanfair House, Scunthorpe, Doncaster	B.E.	9
Firth, Alvernon F., Halifax	C.	198
Findlay, W. F., Halifax	C.	228
Fitch, H., Chatteris, Wisbech	E.B.	34
Fielding, A., Trentham, Stoke-on-Trent	E.	36
Garwood, Albert, 40, Oldhill Street, Stamford Hill, N.	A.	1083
Guest, Arthur, 23, Moreton Place, W.	A.	570
Grose, A. J., 6, Knatchbull Road, Cumberwell, S.E.	A.	184
Griffin, R. W., Highgate, Kendal	E.C.W.	6
Goldsmith, Albert, Church Cobham, Cobham, Surrey	P.	716
Gardner, H.C., Rugeley	E.	48
Garside, F., Brickwall, Northiam, Sussex	A.P.	205
	A.P.	207
Hickman, Sir Alfred, Bart., M.P., Wolverhampton	D.A.	8
Hope, John, Suburban Road, Anfield, Liverpool	D.A.	9
Holdsworth, J., 17, Otley Road, Bradford, Yorks.	K.	42
Hemsted, Dr. Henry, Bridge House, Christchurch, Hants	A.K.	17
Horn, George, Hempston Mills, Bedford	A.K.	3
Hudson, W. E., 1 and 3, Little Arnes Street, Norwich	A.A.	87
Hunt, T. F., 8, Oxford Road, Ealing	B.M.	35
Hull, H. A., Rugeley	C.L.	34
Hudson, R. S., Bank Hall, Liverpool	A.	343
Hughes, E. H., Portmadoc	E.	57
Hargreaves, John, Templecombe House, Somerset	K.	53
Highton, T., 22, Benyon Road, Southgate Road, N.	C.C.	38
Hickman, Alan A., 2, Lansdowne Place, Warwick Road, Coventry	Y.	19
Higgins and Chambers, High Street, Uttoxeter	A.	1819
Hockey, John, The Elms, Chard	D.U.	13
Harding, H. R., The Firs, Quennborough, near Leicester	D.U.	14
Hallam, William, Beckfoot, Kirkby Stephen	D.U.	15
Hirst, Rev. F., Kirklea, Serpentine Road, Poole	E.	44
Hartley, A., Stone Bridge House, Colne, Lancs.	Y.	126
Hackett, Dr., Halifax	A.Y.	8
Hunchcliffe, W. A. Simpson, Halifax	E.C.	4
Hannam, C., Silver Street, Lincoln	B.F.	99
Isaac, U. T., Union Iron Works, Portmadoc	B.	213
Jenks, A. E., Wolverhampton	C.P.	16
Jones, A. A., 99, Walters Road, Swansea	C.	48
Jessop, W. S., 4, Greenmount Terrace, Beeston Hill, Leeds	F.E.	37
Kingham, John, Wendover Road, Aylesbury	C.C.	22
Knox, Dr., Hillsborough House, Priory Park Road, Kilburn, N.W.	D.A.	26
Kenealy, Noel, Watford	C.Y.	13
Kingsley, John Vere, 1, Victoria Road, Bridlington	U.	24
Kenyon, Granville, 7 and 8, Ironmonger Lane, E.C.	B.H.	150
Lamsden, Major	H.	178
Lucas, F. G., 38, Gray's Inn Road, W.C.	A.R.	26
Leaves, Herbert F., Mount Pleasant, Heads Nook, Carlisle	B.T.	4
Lester, J. S., Furnace Lodge, Carmarthen	A.	3241
Lester, E. B.,	A.	2760
Lavelle, Selwyn, P.J., "F.C.S., Royston Villa, Ashby Road, Burton-on-Trent	A.O.	2370
Lawson, S., Burnley	B.X.	9
List, Albert, 45A, Carr Street, Ipswich	B.X.	8
Lea, W. Chater, Cransley Lodge, Dyke Road, Brighton	F.A.	11
Lees, W., Rugeley	C.W.	5
Lette, Norman A., Carleton, Sherwood Park, Sutton	D.X.	30
Lilley, C. E., Ware, Herts	C.D.	70
Lopez, M., Halifax	E.	12
Mills, Tom T., Wolverhampton	P.	207
Marten, John R., 40, London Road, Brighton	A.R.	71
Mumford, John J., The Poplars, Kettering	C.P.	23
Morley, J. H., Hove	D.A.	7
Matthews, L. F., 88, Ha lam Road, Bishops Cleeve	C.D.	22
Mallinson, Mr., Halifax	B.D.	46
Mudge, W., Lower Blagdon, Paignton, S. Devon	A.P.	163
Mills, F. W., Thornleigh, Huddersfield	A.R.	317
Marriott, Thos. R., St. Albans, Herts	C.P.	25
Mell, L. P., Arnwood, Newton Road, Burton-on-Trent	T.	74
	C.X.	1
	A.R.	252
	F.A.	3

(To be continued.)

IMPROVEMENTS IN MOTOR-BICYCLES.

By M. O'GORMAN.

MR. MERVYN O'GORMAN was to have read a paper on "Desirable Improvements in Motor-Bicycles" at the first annual dinner of the Auto-Cycle Club, but, owing to the protracted character of the proceedings, the subject was deferred to the 29th inst. Dividing his proposals under various headings, Mr. O'Gorman writes:—

Weight.—If we had an explosion turbine, and if the gain of weight and space were proportionate to the reduction obtained in turbine steamships, we would have a 2-h.p. engine and gear weighing, not 30 lb., but 5 lb., occupying not half a cubic foot, but only a quarter. Such a machine, to give the necessary effort, would need to revolve, not at 1,200, but at 5,000 revolutions per minute, and not to give 600 useful impulses, but about 5,000 useful impulses in the same period of time. This development is remote because of the imperative necessity for compression, with its attendant reciprocating parts. Still, whether for good or evil, we are about to make a step in the direction of higher engine speeds, for it will not take us long to realise that under the newly fixed limitation of cylinder capacity alone we can obtain more power if we use that cylinder more often in a given time. I look upon a limit to cylinder capacity alone as a temporary measure of a somewhat dangerous character. The alterations which are desirable for race winning under that standard are somewhat numerous:—

(1) Increased engine speed. (2) Multiple cylinders, possibly. (3) Water cooling, certainly. (4) Fly-wheels larger, certainly; heavier, probably; external, possibly, in spite of the fact that for touring purposes an external fly-wheel is notorious for thinning mud. (5) Larger valves, both inlet and exhaust, and larger exhaust tubes. (6) Mechanical inlet valves, for the valves will have to work fast, and as they will be relatively larger, their inertia is liable to be increased, and therefore to require strong springs and a positive opening. (7) Pressure fuel feed, for, if we wish to get gas rapidly through a given size of tube, we must push it in instead of merely sucking at it, and if we supply the gas under pressure, we shall be working the engine at a less ratio of expansion, so that we shall be driven to every sort of ruse to keep the cylinder cold. (8) Insulated exhaust; by keeping our red-hot exhaust tube well insulated with asbestos from the exhaust port, we may secure that none of its heat shall be conducted back to the engine.

I do not suggest that all this is either entirely undesirable or entirely inevitable, but those very few who do not believe in the permanency of the new limit will have been interested to see that the Technical Committee of the French Automobile Club reported against it on November 11th, 1903—that is, after the holding of the "Quart de Litre" cycle trials.

Fuel Efficiency.—In fact, it would be a desirable improvement if an ingenious person would formulate to-night a standard based on both fuel consumption and weight limit (if not for short races at least) for all competitions over 100 miles. What we want is an efficient transmission and engine, and a light vehicle. The best way to encourage the development of an efficient engine and transmission rather than a large engine and bad transmission is to call for a high fuel efficiency under a weight limit.

Silence.—On a long run it is an intense relief felt when a steep down hill makes it necessary to cut off the ignition and the motor ceases to flutter. For silence we must aim at:—(1) A noiseless transmission such as a belt without its drawbacks. (2) An efficient transmission, because this helps to keep the engine small, and therefore the explosion small. (3) A noiseless valve and ignition gear. (4) A real exhaust silencer.

Silence by preventing the oscillation of the air.—The German army is said to be testing a silent gun, and it has been surmised that this silence was secured by a flap valve, which closed over the mouth of the cannon within 1/100th of a second after the shot had been fired, thus preventing the inrush of air to fill the void, and therefore preventing air oscillation, and resulting in silence. This is, I think, theoretically sound; also a similar theory is the basis of the Oldsmobile and other silencers, which exhaust freely into a pot with small exit tubes. The pressure in the pot is raised quickly, but the small tubes let the air fizzle out slowly. The larger the pot the less the back pressure, and the more continuous is the stream from the small holes—i.e., the less air vibration or sound.

Silencing by diminishing air velocity.—In the above methods it will be seen that the air velocity need not be diminished; in fact, it may even be increased—i.e., where small tubes are used. There is, however, a totally different plan. It is well known that if the air channel has an ever-increasing diameter, the gas pushed through it will travel at an ever-decreasing velocity. If the sides of the conical opening so formed be free to vibrate, we get a trumpet which might give the musical note required for silencing by interference. Perfect exhaust silencers have been devised for motor-cars.

Vibration.—Just as dust is the greatest enemy of the motor-car, so is vibration to the motor-cycle. Resilient frames are amongst the most alluring and yet discouraging problems. The existing spring frame, as now used, provided with a compressible top bar, though excellent for push bicycles, has a drawback in that when the wheel base spreads, the handlebars close up towards the saddle and give an objectionable lateral joggle, which might be found undesirable with the speedy succession of shocks to which a motor-cyclist is subjected on the road.

Balanced engine.—Somehow very few bicycle makers are attending to the question of the balanced engine. I would commend them, one and all, to study the fly wheels of the Lanchester air-cooled engine.

Pedals.—The pedal machine suffers under one serious disability, and that is the stiff-legged appearance of the rider who keeps one pedal up and one down as is usual. One remedy for this which ought to be tried, despite

the old-time prejudice of our pedal-propelled days, is the up-and-down treadle gear.

Ignition.—Electric ignition has not yet been displaced, but if we are to use an induction coil, we should at least derive from it the essential advantage which it is calculated to afford, namely, excessively accurate timing. A variation of the time of sparking unknown to the rider of a minute fraction of a second will easily make a difference of 5 or 10 per cent. in the output of an engine, i.e., quite as much in the difference between chain and belt drive, and a very large number of machines lose in this way by the absurd minuteness and cheapness of the rocker gear. The system which can yield the utmost accuracy, namely, mechanical make-and-break, is the one which with skill should give the best results. The superiority of the single spark is that the instant of break can be determined with mechanical precision, so as to be practically independent of the backlash of gear-wheels, of vibration and jolting of the engine, of the voltage of the accumulator, and independent of the previous actuation of the spring. With the trembler coil, however, the moment of making contact is by no means so clearly determined. It is a secondary effect after a brush has rubbed upon a surface which it approaches along a more or less conducting slope. If the accumulator is not full, the attractive force of the iron core of the coil rapidly diminishes (with the 25 per cent. fall of voltage), and the response of the attracted armature is correspondingly less rapid. If the first spark fails to ignite the charge under compression, a later spark will do so when the piston has moved forward, so that the driver is not warned by a misfire that his ignition timing is wrong and his gear faulty.

Numbering.—I have been told of a device which I must warn you strongly against, but I mention it because it is ingenious (though reprehensible). We all agree that a man who drives furiously should be punished, but we all know that speed (20 m.p.h.) as such does not fairly constitute furiously driving. Mr. Baillie's suggestion is that the new number plates shall be fixed, not on a rigid support, but on a support to which the moment the vehicle exceeds a speed of 20 m.p.h. is given a rapid oscillatory motion, with an amplitude of half an inch (the distance between the figures). The object of this is, of course, to shake the dust off the number plate, so that it may be the more clean and legible. All that is required is a fairly stiff spring support of some length, and mounted on a rotating part of a fly-bob, which will joggle the spring when the desired speed has been reached.

A simple method of obtaining a very similar unlawful result is to support the number plate centrally on a quick threaded screw, which, by giving a pull to a Bowden lever, will turn the plate upside down.

COUNTY COURT CASE.

MR. WATERFIELD, of Farnborough, sued Mr. Saunders in the Aldershot Court for the balance of an account for supply of a motor-bicycle, valued £54 19s., all of which had been paid, except £14. His Honour gave a verdict for the plaintiff.

ALLEGED NEGLIGENT DRIVING.

At the Bloomsbury County Court, before Judge Bacon and a jury, Mr. Charles Pinoli, managing director of the Pinoli Restaurant (Limited), Wardour Street, Soho, W.C., sued the Great Central Railway Company for damages caused to his motor-car by the negligent driving of a carman named Falconer. On August 24th Mr. Pinoli was driving along Regent Street when a goods' van, belonging to the defendant company, came down Mortimer Street, and the pole smashed into the rear of the motor-car. The repairs necessitated had cost £29 3s. 6d. The plaintiff said the car cost £900. The jury returned a verdict for the plaintiff for the full amount claimed, with costs.



A White Steam Car in the Snow at

U.S.A.

CLUBS AND ASSOCIATIONS.

HEREFORDSHIRE.

THE annual meeting of the Herefordshire Automobile Club was held at the headquarters, Hereford, last week. Mr. J. T. Hereford (president) occupied the chair, supported by Mr. Wilfred Groom (hon. secretary), and members of the committee. Mr. Groom said since the commencement of the club to the end of the year they had fifty-five members. Three had since joined, making fifty-eight—twenty-eight car owners and thirty motor-cyclists. The fifty-five members had paid their subscriptions, and there was a balance in hand of £44 14s. 2d. After discussion, it was decided that the amount of the affiliation fee to the Automobile Club of Great Britain and Ireland should be 5s. per member instead of 10s. 6d., which gave the members all the advantages of the club with the exception of the supply of the Club journal. The Chairman suggested that competitions should take place between the middle of March and the end of September, and said winter months should be strictly barred in the future. It was pointed out that arrangements might be made to meet other clubs, such as Cheltenham, South Wales, the Midland, and so on, the advantage of gaining other people's ideas being favourably commented upon.

MIDLAND.

THE following meetings for the winter season, at the club room, at the Grand Hotel, Birmingham, have been arranged:—January 30th, road reminiscences and cinematograph; February 6th, annual dinner; February 27th, "Wire Wheels Tyred": paper to be read by Mr. F. W. Lanchester; March 12th, general meeting and report. Dinner and discussion on next season's events.

SHEFFIELD.

THE annual report of the Sheffield Club is a record of good work done since its formation in 1902. Reference is made to the hill climbing competition held in May, the motor-cycle non-stop trial, and a similar event for cars on Boxing Day. Service was also rendered in connection with the new Motor-Car Act. The committee took up the question with the local authorities, and interviewed the Hackney carriage committee, the town clerk, the chief constable, and other gentlemen in authority respecting the regulations likely to be made. Valuable services were rendered by the Hon. Treasurer, whose car was placed unreservedly at the disposal of the various authorities; also Mr. A. E. Thompson, who kindly proffered one of his cars for similar work on behalf of the Club; and Mr. J. T. Thompson, whose motor-bicycle was of considerable service to the powers that be, in enabling them to deal with the placing and lighting of the numbers on motor-cycles.

MANCHESTER.

At the annual meeting of the Manchester Automobile Club, held at the Albion Hotel, Manchester, Mr. F. Smith was in the chair. The annual report was read by Mr. Hoyle Smith. This showed that the membership of the club was 166 as against 140 at the same time last year, and briefly reviewed the variety of work done during the time. Mr. Headridge moved the adoption of the report which was adopted. The treasurer, Mr. S. Okell, read the treasurer's report, showing a balance of £156 in hand. Considerable discussion, which was taken part in by Messrs. Higginson, Houghton, Hollingdrake, Saville, W. E. Rowcliffe, and Eckersley, then took place on the question of increasing the subscription to the club. It was suggested that in future the subscription be two guineas instead of one guinea. At the suggestion of Mr. Arrowsmith, seconded by Mr. Higginson, a vote was taken, when a majority of those present voted in favour of the increase of subscription, subject to confirmation at an extraordinary general meeting to be called for this purpose. The hon. treasurer and hon. secretary were re-elected, Mr. Morris remarking that Mr. Hoyle Smith was a true friend to motoring, and had done all in his power to promote the comfort and enjoyment of all members of the club. Votes of thanks to the chairman and members of the committee for their past services terminated the meeting.

HALIFAX.

THE second annual dinner of the Halifax Automobile Club was held at the White Swan Hotel, on Thursday last week, when about twenty members were present. Amongst the guests were his worship the Mayor, the Chief Constable, Mr. Edgar Booth, Solicitor to the Club, and others. After the dinner an enjoyable smoking concert followed, presided over by Mr. James Lord, the president of the past year. For the current year Mr. A. F. Firth, J.P., was elected president, and Mr. James Lord vice-president. During the last season the Club arranged several pleasant runs, including two to Southport, also one to Scarborough for the Whitsuntide holidays. During the coming summer a further number of day and week-end runs are being arranged.

SCOTTISH (EASTERN SECTION).

On the 21st inst. the annual dinner of the Eastern Section of the Scottish Automobile Club was held at the North British Station Hotel, Edinburgh. The Rt. Hon. Sir J. H. A. Macdonald, K.C.B., presided, and after the usual loyal toasts proposed the toast of the evening, the health of Mr. Graham Murray, M.P., the Secretary for Scotland. It was no secret, he said, that the new Secretary was an automobilist, and he (the Chairman) thought that was a good thing in the interests both of the public and of those who used

motor-cars. Because, having the knowledge as a good citizen of what the rights of the public were, and having the knowledge as a good automobilist of what were the reasonable ambitions and feelings of automobilists, he would be able to deal, as they all knew that he would deal, with perfect impartiality in regard to what was undoubtedly to be not only one of the great industries of the future but what was to benefit the country in the matter of road transport. They welcomed him there that night with perfect confidence that in him they should have a Secretary for Scotland who would attend to the interests of Scotland and to all the interests of the realm with a single eye to what was best for all of them.

The toast having been pledged with cordiality, the Secretary for Scotland said that he had been told that he was there not in the quality of an automobilist, but on account of the kindly feelings which many of them there had to him, and the pleasure it had given them that one brought up among them should hold the high office he held at the present moment. He believed he had been as great a road-user as any of them, because he had been a bicyclist for a great many years. He took up the motor-bicycle at its very inception, and since then he had been the possessor of a car. He thought the possession of a motor-bicycle was a fine experience. It did them a deal of good for the car, which was not thrown away, because when he said that he managed during the summer to run a light car for 3,000 miles without a chauffeur or a breakdown, he did not think he could have done that if he had not previously had a motor-bicycle. There was possibly no education so good for the motor-phobist as being taken out on a motor-car, and the more these people got familiar with what a motor-car was and could do there would be less likelihood of the prejudice they had seen in the past being developed in the future. He was quite aware, from the point of view of a motorist, that the speed limit was considered absurdly low. He was quite aware, from the point of view of a member of the House of Commons, that if the speed limit of twenty miles had not been accepted the Bill would have been wrecked, and if the state of prejudice and feeling which existed then had gone on motoring would have practically been stopped altogether. But as a motorist he knew that that was almost absolutely slow. The truth was that the ordinary person did not know much about pace at all.

The Chairman next gave the toast of "Automobilism." Dr. Dawson Turner replied. The other toasts were "Other Automobile Clubs," by Mr. Norman D. Macdonald, Chairman of the Scottish Automobile Club, and replied to by the Comte L. de Clercq, member of the Technical Committee of the Automobile Club of France; and "The Chairman," proposed by Councillor W. W. Macfarlane.

THE MOTOR-CAR ACT.

THE first cases under the Motor-Car Act have been heard at the Kingston-on-Thames County Bench. Herbert Coombes, of 102, Pavilion Road, London, S.W., was summoned for unlawfully driving a motor-car at a greater speed than 20 miles an hour on the Portsmouth Road, at Cobham, on January 17th. Superintendent Marks, of the Surrey Constabulary, stationed at Horsham, said at 11.30 a.m. on January 17th he timed the defendant with a stop-watch over a measured quarter of a mile at the Tartar Hill, Cobham, which he covered in 23 seconds, or at the rate of 27½ miles an hour. In answer to the defendant the witness said he was standing at the foot of the hill, and a quarter of a mile away from where the measured distance began, but he could easily tell when the defendant entered the measured distance. Police-sergeant W. R. Lucas, Surrey Constabulary, gave corroborative evidence.

The Defendant: How fast do you say I was going?—The Witness: I should say about 25 miles an hour.

Had you a stop-watch?—No.

Then how do you know?—It is simply my opinion.

The defendant said it was impossible for the sergeant to say how fast he was going, as he was running in front of the car with his back towards it when it was stopped.

Police-sergeant Lucas: But I had my head turned so that I could see you and the signal of the superintendent at the same time.

The Chairman: That is an important point, for under the new Act it requires two witnesses to give evidence as to speed.

The Magistrate's Clerk: There are two witnesses.

The Chairman: But the question is, was the last witness looking in front or behind?

The sergeant said he was looking both ways.

The magistrates having conferred together, the Chairman said a majority of the Bench were in favour of a conviction, and the defendant would have to pay a fine of 20s.

MR. H. LIDDELL, of Lynwood, Addison Crescent, London, was also summoned at Kingston for driving a motor-car at a greater speed than 20 miles an hour at Cobham, on January 17th.

The Chairman said the Bench had received a letter from the solicitors for the defendant, in which they complained that the alleged offence having occurred on Sunday, January 17th, the summons, taken out on the following day, was made returnable for the 21st, which left the defendant only two clear days in which to instruct counsel and prepare his defence. The summons against Mr. Liddell was adjourned for a week, the Chairman of the Bench intimating that seven clear days should be given defendants to answer their cases.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, FEBRUARY 6, 1904.

[No 257.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

DEALERS' MARKS.

Next week we shall publish an instalment of the Marks assigned to dealers by the local authorities in various parts of the country. We shall be glad to have from those firms which have not yet sent their Marks particulars of the same without delay.

COMMENTS.

The Gordon Bennett Cup.

ELSEWHERE we publish a report of a special interview with the chairman and secretary of the Automobile Club. Motorists generally are much indebted to Mr. Roger Wallace and Mr. Julian Orde, not only for the trouble they have taken with regard to this year's Gordon Bennett race, but also the keen interest with which they have regarded the convenience of English motorists likely to witness the contest. It is confidently to be hoped that the actual number of types of vehicles to participate in the contest will be somewhat numerous, a contingency fortunate, and indeed inevitable in all the circumstances. Five Mercedes, two for Germany and three for Austria, are already announced, and it would seem that we shall depend very largely upon the entries from France and England to make the event thoroughly representative of all types. Whilst recognising the merits of the vehicles that have hitherto done good service by competing, it would add considerably to the interest should one or two other British cars succeed in getting through the eliminating test and so win a place in the official team to do battle for the Cup.

Refreshment at Inns.

AN application for the renewal of the license of the Black Swan Inn, near Crawley, was adjourned on Tuesday by the Haywards Heath magistrates, opposition being offered by Mr. Philip Bright, of Regent's Park, N.W., who complained that when motoring on the Brighton road he was refused a cup of tea at the house. He asked for the tea for his driver, who was a teetotaler, and the landlady told him that he ought to know better than to order tea at a public-house. The landlord's excuse was that the request was made at an inconvenient time, and his application for the renewal of a license was adjourned for a month. In refusing to cater for the various tastes of those who travel by road, publicans and innkeepers are adopting a very short-sighted policy. So, too, are those who charge exorbitant rates for tea, coffee, and similar refreshments.

The Motor Volunteers.

NOT satisfied with having wheels that go round faster than any others in the service of the Army, the Motor Volunteer Corps is now making application to the War Office for arms. At present the members are without any means of self-defence. Should the enemy get too near all they can do is to

get away—and that, thanks to the automobile, could be done pretty quickly. But, fired with military ardour, these volunteers are now asking for rifles, another step towards their complete equipment as an effective fighting force. Proposals are also being made for the training of the corps in the present year. It is unlikely that any scheme will be decided on for bringing the corps together for simultaneous training, the members being so widely scattered over the Kingdom; but it is proposed that portions of the corps shall be employed in the various military districts with regular or other troops, acting both as orderlies and fighting soldiers. For the motor-cyclists of the corps training in scouting and general reconnaissance work are especially proposed, though the ordinary motorists would also have training of the same kind.

The Confusion of Numbers.

AN early example of the difficulty which police as well as motorists are likely to find in attempting to discern the numbers on motor-cars has just arisen. Last week a letter in our correspondence columns asked for the name of the owner of "A or H 179, a 10-h.p. M.M.C., who was driving through Tottenham on the 19th inst." Now comes a letter from Dr. J. J. Ridge, the well-known doctor of Enfield, to the effect that he is the possessor of H 179, "which is an 8-h.p. Argyll with hood, and was not at Tottenham on the day in question." Not only is there a difficulty of ascertaining correct numbers on cars, but automobiles are becoming so similar in appearance that it is not so easy to distinguish the different makes of cars as was the case two or three years ago.

A Suggestion adopted by the Board of Trade.

MANY months ago we published a letter from Sir Alfred Bateman on behalf of the Board of Trade, in which he promised that our suggestion with regard to the separation of the imports and exports of motor-cars from those of motor-cycles should have consideration by the Departmental Committee for the revision of the Trade Accounts. On this subject we have just received a further communication from the Board of Trade, Mr. H. Llewellyn Smith intimating that the suggestion has been before the committee and that "it has been decided to alter the former headings, both in the import and export section of the monthly accounts." This is satisfactory, and we would congratulate the Board of Trade on the thought which it bestows on suggestions made with a view to the improvement and greater usefulness of its statistics.

The Reliability of the Car.

THURSDAY next will be the third anniversary of the inauguration of a motor-bus service running regularly to a time table in connection with the L. and N.W. Railway train at Boxmoor station. The same two vehicles have been running all the time and have demonstrated the reliability of such cars when properly attended to. They are owned by the Hemel Hempstead Motor-Car Company, which also lets vehicles on hire, and recently supplied a 9-h.p. car on hire for a month in Harrogate

and two months in Scotland. It went all the way to Deeside by road. The only thing that happened was a delay of a day in Harrogate in order to re-metal a crank shaft bearing. In both cases the performance of the car and driver gave such satisfaction that it led to a purchase of a motor vehicle. The same carriage, though fitted with solid tyres, was recently hired to convey an invalid, for whom a couch had to be made up, forty miles by road with equally gratifying results.



Nearing the Summit of Snowdon.

The Ascent of Snowdon.

REFERENCE has already been made to the ascent of Snowdon on a British car. We are now able to reproduce two photographs by Mr. Wickens, of Bangor, showing Mr. H. du Cros, jun., making the attempt on his "Ariel" car. Our photographs illustrate the last slope from the finish and also the car tacking about in the endeavour to find the snow sufficiently hard to continue the ascent. The car was driven to within a short distance of the summit, a drift of snow from six to seven feet deep preventing further progress. This is the first time the ascent of Snowdon has been attempted, and naturally the Ariel Company are elated at the success of their vehicle.

A Strange Case.

A CASE has been heard at the Norwich Assizes in which a baker brought an action against Mons. H. Rollet for personal injuries. It appeared that the defendant was shooting in Norfolk, and left his motor-car unattended partly on the roadway and partly on the bank while he was shooting with some friends in an adjoining field. The baker was coming along in his cart when his horse shied and turned the vehicle over so that it fell upon the stationary motor-car. Seeing that the roadway was thirteen feet wide, that there was ample room for the plaintiff to get by, and that he himself thought the horse would pass the car without trouble, we do not see that the motorist should have been held responsible. In fact, Justice Channell said he could not see how the fact that the defendant left the motor-car unattended contributed to the accident. The plaintiff acknowledged that he usually left his horse and cart unattended.

The accident was caused by the horse becoming frightened at the motor-car. There was no evidence at all of an improper use of the highway. If, instead of this car having been stopped, it had been properly in motion, and on the right side of the road, and an accident happened, no action at all could have been brought. There was no doubt about that.

Judge v. Jury.

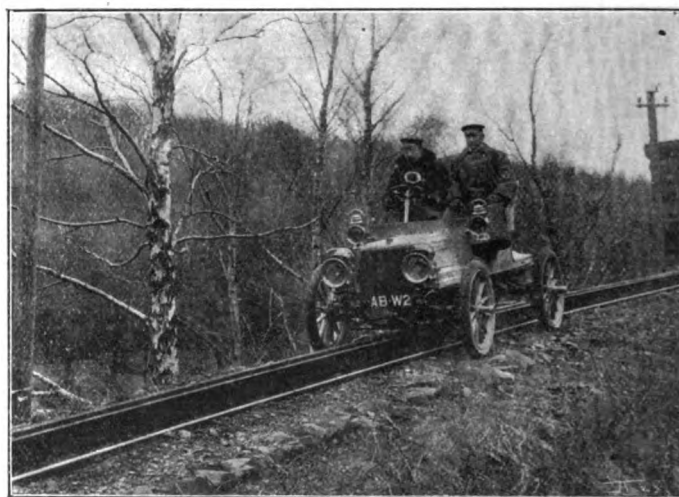
THE jury returned a verdict for the baker, assessing his damages at £34. M. Rollet, who had made a counter claim, was given the point, and then the Judge remarked that he did not think he could do anything in any way to differ from the jury, but he quite thought that the Court of Appeal might say that he ought not to have left the case to the jury at all. Under such circumstances the defendant must feel that English justice is a strange and complicated thing. On the face of it it would appear that the matter should be carried to appeal, in which case the Motor Union might see its way to render assistance.

Theft of a Motor-Car.

THE police in North Staffordshire are engaged in endeavouring to discover the perpetrators of an extraordinary theft which has been committed at Hanford, a village near Stoke-on-Trent. It seems that a motor car was left during the afternoon in the grounds attached to the residence of Mr. W. D. Spanton, consulting surgeon, at Hanford, from whence it was subsequently stolen by some unknown person. By whom the car was removed, and how it could be taken away without attracting attention, is a mystery, and at present no clue has been obtained which is likely to lead to its unravelling or the recovery of the missing vehicle.

Motor-Boat Race.

THREE challenges have now been received from France for the British International Cup for motor-boats. Two of these entries are for boats driven by petrol motors, one from M. Clement and the other from Messrs. G. Pitre and Company. The third is a Gardner-Serpollet steam launch entered by Messrs. Legru and Gardner. No less than seven boats have been entered to defend the cup on behalf of Great Britain, two being from Mr. S. F. Edge, the present holder, three from Messrs. J.



The "Ariel" descending Snowdon by the Cog Railway.

E. Hutton, Limited, one from Messrs. Thornycroft, and one from Lord Howard de Walden. This will necessitate an eliminating race being held to decide upon the three boats which are to represent England in the race itself. Further entries, it is hoped, will yet be received from France, which will also necessitate an eliminating test; and if, as is confidently expected,

entries are received from Germany and the United States, the race will be the most representative and important international contest for motor-boats that has ever taken place. The actual date of the race, which will be held probably in the Solent, is to be July 30th.

The Affiliation Question.

JUST now the provincial clubs are exercised over the affiliation question, and the Eastern Counties organization, at its annual meeting at Ipswich, has decided that the committee may affiliate with the A.C.G.B.I. on condition that the capitation grant should not exceed five shillings. This is the line that is being taken by several organisations. There is apparently no real desire for a federation apart from the Automobile Club, and we expect the forthcoming conference will result in a very general adherence to the parent association.

Sensible Decisions.

THE Enfield District Council have determined on the places in their area to be indicated as dangerous, under the Motor Car Act, 1903, but the question of the speed limit caused a warm discussion at the last meeting, and was referred back to Committee for reconsideration by a majority of one. In Hertfordshire the County Council has resolved that it is undesirable at the present time to make application to the Local Government Board to limit the speed of motor-cars below the maximum of twenty miles an hour, as further restriction would possibly have the contrary effect to what was intended. Evidently the personal influence that individual motorists have been able to exert throughout the country has been of service in the education of councillors.

Wisdom at Deal.

THE report that the authorities at Deal proposed to suggest a restriction of the speed of motor-cars passing through the town to ten miles an hour has aroused so much opposition that the Town Council has rescinded its resolution on the subject and withdrawn its notice to the Local Government Board. Spirited letters of protest had been sent to the Town Clerk by Judge Emden, the Motor Union, the manager of the South-Eastern Hotel, and a score of other motorists—a fact which doubtless did much to influence the final decision of the Council. Several councillors mentioned that they had been approached by local motorists on the subject, and it was evident that considerable education had been carried on since the previous meeting of the Council. As a local journal remarks, the very stringent provisions of the Motor Car Act afford adequate protection to the public, independently of this optional clause, and we are glad the approaches to the town are not to be disfigured by notice-boards which would have been little short of a gratuitous advertisement of an indisposition to move with the times.

Dover Persistent.

WHILE the Deal Council has proved amenable to local wishes and sensible of the interests of the town, Dover is in a recalcitrant mood and in reply to the objections of the Motor Union and the Kentish Automobile Club has sent a reply to the Local Government Board re-affirming the previous decision. Space prevents us giving more than a conspectus of the letter sent by the Town Clerk to the L.G.B., but he has pointed out that the petitions were received after the proper date, and the objection of the Automobile Club to the roads of the borough being scheduled as a whole was not in accordance with the intention of the Act. The objection that the borough, being one of the chief Channel ports in connection with the progress of automobiles to and from the Continent was not of importance, as the borough was only three miles in extent, and if the cars proceeded at twenty miles an hour it would be passed in nine minutes, and if at ten miles an hour it would be traversed in eighteen minutes.

The King's Highway.

At a meeting of the Western Section of the Scottish Automobile Club, held in the Windsor Hotel, Glasgow, on Monday, Mr. John Adam presiding, Mr. Robert Drummond, C.E., F.S.A. (Scotland) read a paper on the evolution of road making in Scotland. "King's Highway," he explained in introduction, is not, as popularly supposed, every highway. The name was appropriately confined to the four King's Great Highways stretching throughout the kingdoms of England and Scotland; the Fosse—from Cornwall to Caithness—Watling Street, Erminge Street and Ryknield Street traversing other portions of the kingdoms. By decree of Moluncius, the 23rd King of the Britons and the first who gave them law, these highways shared with the ploughs of tillers and the temples of the Gods, freedom of succour, so that fugitives to any of these for succour from trespass were safe from pursuit. Hence the name "King's Highways." The present road system was instituted in 1617, when Justices of Peace were constituted the road authority. In 1669 statute labour was introduced (the origin of another present-day term) when on roads known by that name each person was compelled to work a certain number of days in each year. The first Turnpike Act was in 1713, and between 1750 and 1884, 350 Roads and Bridges Acts passed the legislature. The era of roadmaking ended with the advent of railways, about 1840.



Mr. C. W. Gooch on his Messie Steam Car.

Mr. Gooch has driven his car about 6,000 miles over some of the most trying roads in England, and reports that he has found it satisfactory in every way.

Road-Making in Scotland.

AFTER referring to the Roads and Bridges (Scotland) Act of 1878, and to the Local Government (Scotland) Act, 1889, which gave the public control of the roads, the lecturer submitted a diagram map of Scotland showing the various local ratings for road maintenance. These vary from 3½d. to 1s. 5d. in the £. He pointed out that the standard of efficiency had much to do with the differences in assessments, but other considerations also were present, as:—1. Geographical position and proximity to good repairing material. 2. Vicinity of large town and consequent heavy traffic. 3. High or low rateable value. He suggested that to remove or diminish the anomaly the Government grant should be largely increased and should be allocated with regard to the scale of rating as well as to the amount spent on maintenance; or that no grant be made unless the rate be, say, 7d. to 8d. in the £, which is the average rate over Scotland. He pointed out the tendency of some road boards to neglect the main lines, and urged, in view of the increasing use of the road and of the new forms of locomotion, that these should be treated as of first importance. He took the view

that small area authorities were to be discouraged and that great advantages accrue from the whole roads in a county being under one control. Mr. Drummond blamed to a slight extent the steam roller for aggravating the dust nuisance, the fault, however, being largely due to a proper binding material not being used. The material giving off least dust and also the best results in binding new metal is the half-worn material taken from the old surface before the metal is applied. To obtain this the road should be regularly scarified and the loose material laid aside. He advocated greater attention to the sweeping and cleaning of roads in dry weather, both as a dust preventive and in the interests of economy, as dust is much more readily removed than mud. The experiments with oil were explained and discussed, and the Club, it was suggested, should bear the expense of local experiments. In conclusion, Mr. Drummond pointed out the salient features of the Departmental Committee on Roads in England and Wales, and contrasted the conditions of English and Scottish roads, and drew attention to various directions in which improvements in the width and contour of roads and other such matters might be made. A discussion followed.

Lucky Thirteens.

SINCE the lady of Salop declined to be labelled A.W. 13, there have been no cases of the refusal of motorists to accept the unlucky number. Some have even revelled in the distinction. Dr. E. H. O'Brien, of Rock Ferry, Birkenhead, writes us that he is "quite pleased at getting the unlucky number," and adorns his car with C. M. 13 to show his contempt for all such superstitions. Mr. E. Estcourt, of Wroxham, Norfolk, has secured A. H. 13. As yet it has not brought him bad luck, but the fact that his car was used in the Norwich bye-election on behalf of a candidate who failed to secure election is significant.

Lights on Vehicles.

THIS is a subject about which much has been written of late. A few practical lessons such as that just administered by Mr. W. T. Lord at Uxbridge will prove the value of the warnings that have appeared in the press, and also relieve the roads of one of these great dangers. Whilst driving a motor-car between Uxbridge and Hillingdon some days ago at about 8 o'clock at night, Mr. Lord came suddenly up to the back of a timber cart which was carrying no light either behind or in front. A balk of timber about seven feet long was projecting behind, and had he not had good lamps and good brakes, he would most probably have impaled the front of his car. He drove on towards the next police-station for a constable, but, meeting one on the road, requested him to go back and take the man's name and address, which he did, with the result that the driver was fined at the Uxbridge Police Court. Having regard to the restrictions placed upon motorists in the shape of lights and numbers, it is the duty of every car owner to protect himself and his fellows by insisting, so far as is possible, that other road users shall carry out their obligations. It is a very serious thing that a man driving a car, as in this case, worth about £600, should have to run the risk of smashing it up (and possibly himself incidentally) because drivers of slow vehicles insist on crawling along in the middle or on the wrong side of the road without a light. Mr. Lord intends to give in charge every driver of any horse vehicle he comes across on a dark night without a light, and doubtless other motorists will do likewise.

Motor-Cycle Licences.

THE hon. secretary of one of the provincial automobile clubs has had private intimation from an Inland Revenue officer that comparatively few motor-cycle licences have been taken out, and that it is probable that some action will be taken shortly. It must be remembered that the register of motor-cars and cycles kept by Corporation and County Council officials is

likely to be utilised by the revenue authorities, and that no excuse as to ignorance of the law will avail should prosecutions be instituted. Hence the warning that is now given to those who have not yet taken out their licences—15s. in the case of motor-cycles.

Stop Watches.

JUST as Surrey was unpleasantly prominent in its attitude towards motorists it has become equally notorious under the new Act. A more reasonable policy is being carried out by the magistrates, however, and we would congratulate those who sit on the Kingston bench on their recognition of facts in the first case brought before them under the Motor Car Act of last year. Superintendent Marks had timed a motorist over a measured course, starting a stop-watch as his victim entered the trap and stopping it as he emerged therefrom. The watch had the appearance of cheapness in the eyes of the defendant's solicitor, who plainly intimated his view to the Court. The superintendent did not appreciate such a suggestion of economy, and retorted, "Well, it is supplied to the police by the ratepayers." On being tested in court it was shown that no reliable timing could be done with the watch, and the Bench decided to dismiss the case. Probably this will have the useful effect of stopping further traps in Surrey until the ratepayers can supply the police with reliable watches, or until the police can use their common sense in dealing with motorists.

Railways and Automobiles.

MR. GEORGE MONTAGU'S paper, summarised on another page, led to an interesting discussion. Mr. Norman Macdonald, who was in the chair, said that the railway motor-car had been kept back by the fact that the railway companies had acted on the advice of mechanical engineers who were mostly steam men and confined themselves too much to steam. In connection with motor-car services, success depended mainly on having one man in charge. This had been done by the G.W.R., with the result that the manager of that section of the work was able to carry out his own ideas and to manage his men in his own way. Mr. Henry Fowler, of the Midland Railway, mentioned that the Belfast and Northern Counties Railway had in some respects been the pioneers in regard to the adoption of motor-cars on the roads, and he regretted that there were no reliable figures available as to the cost of such services when developed by railway companies. Mr. Burrows, of the Great Northern Railway, Mr. Coventry, of the Great Western Railway, Mr. Monckton, of the Great Central Railway, Mr. H. Austin, Mr. Lennon, Capt. Campbell, and others took part in the discussion.

THE Cardiff Cabs Committee will shortly have before them an application from the South Wales Transport Company, Limited, for a licence to run a service of motor omnibuses, which will ply for hire and carry passengers and parcels between Cardiff and Llandaff Yard on the one hand, and Cardiff and Llanishen on the other.

LAST week King Edward VII., accompanied by the Queen, paid a visit of inspection to the Gordon Boys' Home, situated on the Surrey Hills, midway between Woking and Bagshot. Though cold, the weather was fine, and their Majesties, who were attended by General Sir Dighton Probyn, the Hon. J. H. Ward, and the Hon. Dorothy Vivian, had a splendid motor-car journey through Windsor Great Forest and Bagshot, and then over the hills, from which some of the finest scenery in this part of the country is to be viewed, to the home. At the institution the Royal motor-car was driven to the parade ground, where the boys, about 240 strong, were formed up in review order, and received their Majesties with a general salute, which the King acknowledged.

THE GORDON BENNETT COURSE.

INTERVIEW WITH MR. ROGER WALLACE AND MR. JULIAN ORDE.

COMPARED with the keen interest which was manifested in the Gordon Bennett race at this time last year, the present excitement in the 1904 event appears somewhat languid. But, while publicity is lessened by the change of venue to a greater distance, conversation in automobile circles is largely concerned with the prospects of the Cup being retained by the present holders or regained by one or other of the two nations that have previously won distinction in the contest. But the Eliminating Test has yet to be encountered; hence the anticipations with which motorists in this country are regarding that event. In view of the uncertainty as to the route on which it will take place, so far as the selection of the British team is concerned, I called last Friday at the headquarters of the A.C.G.B.I. to ascertain the position of affairs from those mainly responsible for the arrangements.

Mr. Roger Wallace, K.C., was in consultation with Mr. Julian Orde, the secretary, who had returned that morning from Brussels, where he had been wrestling with Belgian burgomasters

cautiously pointed out. "The course passes through two communes, and their approval has to be obtained. The burgomasters have realised the importance of the race, and are under the belief that all motorists are millionaires—or, at least, have wealth beyond the range of ordinary mortals—and the terms upon which the roads can be obtained for the day of the proposed race are somewhat beyond what we had expected."

Mr. Wallace regarded the exalted ideas of these burgomasters with regard to finance as unwise. "In fact," he observed, "they may be inimical to the interests of the country; for, while the Eliminating Test will have to be held, it is by no means certain that Belgium is the only possible country in which it can be run. Should the Belgian authorities prove really unreasonable, our plans will, of course, have to be altered somewhat."

From the preliminary canter of the British contestants we passed to the course itself. Both Mr. Wallace and Mr. Orde have been over the route as outlined in the *Journal* on December 5th last and they are familiar with the country round about. Naturally I asked for some comparison with the angular route in Ireland as well as the dreariness of the prospect for a good many miles along its course.

"Those who go to Homburg," said Mr. Wallace, "will be



On the Gordon Bennett Course. The Road between Wellburg and Altendorf.

whose ideas have swollen with the development of automobile racing.

"It has been suggested," remarked Mr. Orde, "that it would be more satisfactory to hold the Eliminating contest over a course closely approximating to the conditions of the actual race than do the short tracks available here. Hence the desire of the committee to arrange for the event taking place abroad."

"And would the competitors assent to such an arrangement?"

"Oh, there will be no difficulty on that account," was the reply, spoken in a tone of conviction. "Those who will drive recognise the advantage of a race instead of a mere speed trial, while every British motorist would welcome the contest as duplicating the interest felt in the Cup."

"And is the idea welcomed on the Continent?"

"We have tried to have the contest over the Circuit des Ardennes, and the authorities evidently recognise the material gain such an event would be to Belgium. To a large extent the sanction of the road race depends on the goodwill of the Belgian Government, and in securing that, the motoring enthusiasm of the King of the Belgians should be an important factor. But there are other considerations not to be ignored," Mr. Orde

struck with the picturesque country. The whole district is a delightful one, beautiful landscapes alternating with scenes as rich in historic interest as they are profligate in natural beauty. Homburg is, of course, familiar to every traveller on the Continent. From there to the Castle of Saalburg, where the start will be made, the road rises gently through a well-wooded country, in strong contrast to the approach to the Ballyshannon cross-roads of last year."

A moment's reflection brought to mind the run from Dublin through poor old Rathcoole and the dejected villages that showed their ruins all the way to Kilcullen. And then the uninteresting scamper of five miles to the starting point between uneven hedges bordering equally uninviting fields. Visitors to Germany will have a more welcoming prospect. Mr. Orde shares Mr. Wallace's enthusiasm for the 1904 course.

"It should prove a capital run," said the secretary, "but unfortunately there will be sixteen controls to slacken the speed and give advantage to the cars that can most quickly get away after being stopped. The road is 139½ kilometres in length, so that the four circuits which will have to be made will necessitate 64 halts, with an accompaniment of language that will fortunately be foreign to many of the Observers."

"The Irish course was bare of level crossings; what of the German?"

"Well, there is one just beyond Wehrheim, but I learned that the trains will be stopped on the day of the race and the bed of the road will be made level, thus avoiding the bumps that proved so frequent on the Irish course until it was levelled for the event. While last year's route was fairly level, the course for this year is uphill to a great extent. In fact, quite 90 per cent. of the first half of the road is uphill, the switchback being the predominant note."

In Mr. Wallace's recollections of the course the two right-angled turns beyond Altendorf are most vivid.

"Beyond the river Lahn the scenery develops a grandeur all its own, commencing with the Castle of Weilburg, rising from the rock that juts from the river in picturesque solitude. Then a good straight road stretches to Altendorf, where, within a hundred yards of each other, are two right-angled turns that will test the nerves of the drivers even more than did the curly road by the Mageny Bridge last year."

Mr. Orde has acquainted himself with the details of the organisation now being developed, and it is evident that the sharp corners will be trimmed, the uneven surface made straight, and everything that is possible will be done to secure safety on the day of the race, June 17th, which will be graced by the presence of the Kaiser. So much has been written about the prospective hotel charges outdistancing the Irish rates of hospitality that his authoritative statement on the subject is of interest.

"The hotel charges are very high, but it must not be forgotten that Homburg is a good centre for all countries, and that it attracts, every year, visitors from all parts of Europe, whether there is to be a motor car race or not," said Mr. Orde.

"There is another factor," added Mr. Wallace. "In addition to the usual contingents from Italy, from Servia, and from the southern kingdoms of Europe and from Russia, it must not be forgotten that the Germans have not yet seen a race of this calibre. The country is much more thickly populated than is Ireland, and the crowds that will pour, not only into Homburg, but also into Frankfort and Wiesbaden, as well as Konigstein, Limburg, Ober-Ursel, and other places directly on the route, will be immense. But we were fortunate enough to secure to the A.C.G.B.I. the use of 100 of the best rooms in the Homburg hotels at a reduction of 20 per cent. on the charges fixed by the syndicate of hotel proprietors. That is something for which we must be grateful."

Then the conversation became general, and we reverted to Brussels, it being made clear to me that the resources of the Club will not allow any hitch in the Eliminating Test, even if the Belgian Burgomasters prove intractable. Mr. Orde being fresh from Brussels it was natural that talk should drift to the exhibition now in progress there.

"I cannot understand why English makers should ignore the exhibition at Brussels. The Dunlop Company was the sole British representative. And yet the Brussels show is no mere aftermath of Paris. Buyers were present from England, France, Germany, Northern Europe, Italy, Russia, and even the United States, and I feel confident," added Mr. Orde, "that those English firms seeking international business are not wholly wise in ignoring the splendid show in the little Belgian capital."

"And to what is the success of the exhibition mainly due?"

"Well, organisation is something, but the fact that the display is under the auspices of the Automobile Club de Belgique is a great factor," said the secretary, and Mr. Wallace, speaking from his full knowledge of Continental automobilism, assented.

"You see that such patronage secures the attendance of Society people, and also the international notice that means much for the exhibitors at such a show. And from the personal inquiries I made from the exhibitors, I should say," said Mr. Orde, "that everyone is satisfied with the business done. M. Oscar Gregoire, one of the founder members of the A.C.G.B.I., sold a 32-h.p. car eighteen times; and Belgian manufacturers, whose productions are really creditable, must have done exceptionally well, and secured important introductions to buyers from abroad."

LOLLIUS.

THE MOTOR CAR ACT.

English Licences in France.

"Normandy" writes:—"I am thinking of making a tour with my car in France during the coming summer. Will you kindly inform me whether the driving licence I have just secured here in England will be recognised by the French authorities, or whether it will be necessary for me to also secure a permit from them? A friend of mine tells me that in France driving licences are only granted to motorists after they have shown themselves qualified to drive. Is this so?" The licence issued by the English authorities will not be available in France, where a permission to drive has to be obtained from the Service of Mines. If "Normandy" is a member of the A.C.G.B.I. and a capable driver, that organisation will send a certificate to the French Department, which will be exchanged for a driver's permit.

The Weight of a Car.

The duty on a car which weighs under one ton is two guineas. "For the purpose of arriving at this weight," writes F. W., "am I allowed to remove the cover from my car? It is a detachable one and is not always used with the car. I suppose the carrying of a number on every occasion the car is out is necessary under the new Act." The removal of the cover would not avail F. W. anything with the Revenue authorities should he be using the car with the cover and an officer run the complete vehicle on to a weighbridge. The better way will be not to remove the cover for weighing purposes. With regard to the latter part of the question the number will have to be carried whenever the car is out.

Rear Lights.

Mr. G. C. Bedwell, who was the first resident motorist in Cambridge, writes:—"I notice in your issue of the 30th ult. that a person was fined because his back lamp was out. Now, if everybody had their illuminating back lamp on the left hand side of the car, the driver could easily see, by casting a side glance, whether his lamp was alight, and without the trouble of getting down. I find this a great advantage, and am using a lamp which acts as an illuminator and red lamp. I have tried many ways of fixing the lamp to get the best results, and find that if it is put at a right angle to the plate and $\frac{1}{2}$ inch in front I get the best result." Perhaps some of our readers will require further explanation.

Dealers' Marks.

As a general rule the authorities are charging £3—the maximum fee—for the dealers' marks. The Cornwall County Council, however, is charging £2 only, the reduction having been obtained by reason of an application by the Cornwall Centre of the National Association of Cycle Traders, of which Mr. W. E. Hicks, of Truro, is the local secretary. The mark in that county consists of white figures on a chocolate red ground.

Variety in Plates.

MR. GILBERT MARSHALL (Chesham) asks if it is only the rear plate that need be illuminated, and also as to whether he can have the letters above the figures on the back of the car and all in one line on the front? The regulations of the Local Government require only "the identification plate on the back of the motor-car" to be illuminated. There is no reason why dissimilar plates should not be adopted on the front and rear of the car provided they are in accordance with the regulations as to size, etc. A good instance of our correspondent's suggestion occurs in the vehicle with which the ascent was made up Snowdon. From the photographs on page 938 it will be seen that Mr. Du Cros has adopted both the plates allowed by the L.G.B.

SINCE the new Act relating to motor-cars came into force, the speed has been much faster through the streets of Horsham, according to a local journal.

THE "HOWARD" STEAM WAGON.

STILL another old-established engineering firm to take up the construction of heavy steam wagons is Messrs. J. and F. Howard, of the Britannia Ironworks, Bedford. The accompanying illustration gives a general view of the vehicle they have produced; it is designed to carry a load of five tons, and to haul a trailer with an additional two to three tons. The frame is built of channel steel, with strong channel steel braces, the whole being riveted up by hydraulic machinery. The boiler, which is located in the fore-part of the frame, is of the vertical type, of special design, with solid-drawn coiled water-circulating tubes, giving great heating surface and large grate area; it is designed to work at a pressure of 200 lbs. per square inch, and is lagged with sheet steel. All the necessary fittings are provided with seating blocks riveted to the boiler. It is adapted to be fired with either gas coke or Welsh coal. The engine is of the compound type with high-pressure cylinder 4 inches diameter and low pressure cylinder 7 inches diameter, the stroke in both cases being 5 inches. The reversing gear is of the link motion type. The engine, which can run up to a speed of 600 revolutions per minute, is entirely enclosed and runs in an oil bath. A by-pass valve, worked by the driver from the seat, is fitted to allow high-pressure steam to be admitted to the low-pressure cylinder when desired. A special regulating valve is attached to the steam pipe, so that the driver has the engine under complete control by the foot lever, for starting, stopping, and going slow, without removing his hands from the inclined steering wheel. An independent steam feed pump as well as one driven by the engine are provided. Two speeds are available, the power being conveyed from the crank shaft by steel spur gearing to the intermediate differential shaft, the



The "Howard", Steam Wagon.

after being connected to the rear road wheels by side roller chains. The differential gear is provided with a locking arrangement of a simple and effective form, to enable the vehicle to extricate itself from any soft places in the roads traversed. The approximate over-all dimensions are, length 17 feet 3 inches, and width 6 feet 10 inches, the flat platform measuring 11 feet 6 inches by 6 feet. The road wheels are of the traction engine type, 3 feet 6 inches diameter by 9 inches in width at the rear; the front wheels are 3 feet diameter by 5 inches wide. The rear axle is 3½ inches square, and the front one 2½ inches. Ample brake power is provided, and on hard macadam roads an average speed of five miles an hour can be maintained. As to hill-climbing capacity, the makers inform us that hills of a gradient of 1 in 10 can be mounted without difficulty. The consumption of gas coke or Welsh coal under ordinary circumstances is about one ton per week, and the water tank carries sufficient water for a run of about fifteen miles. It will be readily understood that any type of wagon body can be fitted to the vehicle.

CONTINENTAL NOTES.

THE Gordon Bennett Committee of the German Automobile Club, actuated by the express desire of the governing authorities, has decided that the cars of all motorists attending the Cup race, German and foreign, are to carry a plate, to be provided by the German Club at cost price, and bearing the symbols G.B. and a number. By these means the authorities hope to render the task of controlling the race much easier. The Club will erect a stand accommodating 10,000 spectators, to view the race. The structure will be built entirely of steel, and will span the course, near the starting point, like a bridge. The colours of the competing cars will remain the same as last year, the new challenging countries mutually deciding as to what colours each shall adopt. The Mercedes 1904 racers are reported to have been already out on the road.

THE announcement is now definitely made that M. Rene de Knyff will not drive in this year's Cup Race, and that the drivers of the three Panhard cars in the French eliminating trials

will be Henri Farman, Teste, and H. Tart. Messrs. Storero Nazari, and Lancia have also been chosen as the drivers of the three Italian cars.

THE Automobile Club of Marseilles is organising a hill-climbing competition for the 21st inst. It will be held on a private road over a distance of a kilometre, with a standing start and a stopping finish. There will be three classes: (1) open touring cars up to 12-h.p.; (2) open touring cars over 12-h.p.; and (3) covered touring vehicles. The total weight of the car, the number of passengers carried, the horse-power, and the time occupied in covering the kilometre, are all to be taken into account in making the awards.

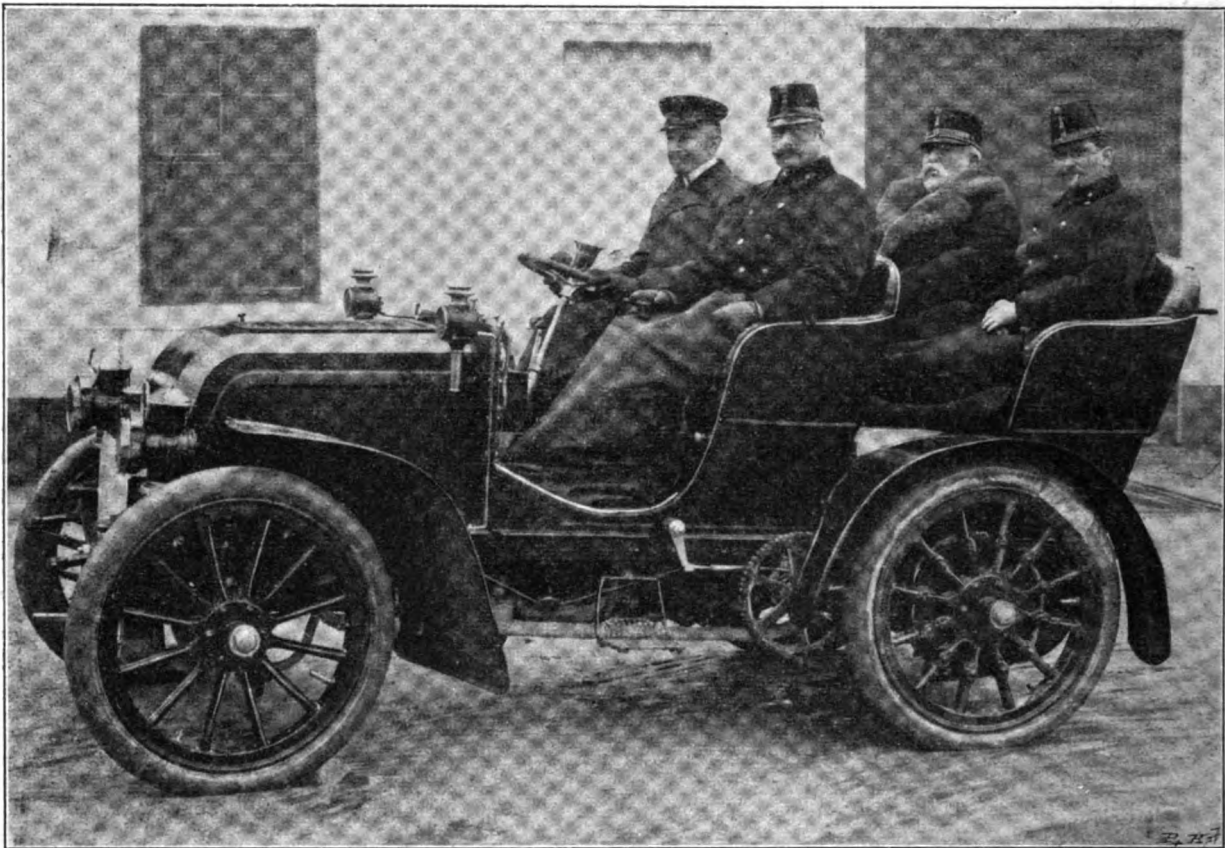
IN the course of a recent interview as to the effect of the spread of automobilism on railways, the vice-president of the Paris, Lyons and Mediterranean Railway Company stated that "In view of our very large system, with its multiplicity of branches and the variety of causes which influence travel, it is

not possible to say exactly what the effect of automobilism has been upon our passenger business up to the present moment, but our impression is that the railways should see in the great progress of this new industry something to welcome. Not only has it brought us business in the transportation of the automobiles themselves, but it has increased rather than diminished the number of passengers over the lines of our company. In short, we regard the automobile rather as an auxiliary than a competitor, for, as a matter of fact, every new invention in the way of locomotion only serves to develop a taste for travel."

THE Belgian Automobile Club is organising a competition of anti-skidding devices which is to extend over a period of six months from March 1st next. The maximum number of points that can be gained is 110, divided as follows:—Efficacy against skidding, 60; wear of device, 30; weight of ditto, 10; and cost of renewal, 10. The anti-skids entered will be fitted to

THE latest madness in connection with the looping-the-loop craze is shortly to be seen in Paris, either at Olympia or at the Casino de Paris. Instead of travelling round a loop, a motor-car is to run along a switchback path, the first part of which is a very steep fall. At about midway there is a gap in the path, across which the car is not only to leap by the impetus gained in the descent, but at the same time to turn a complete somersault. The most remarkable part of the scheme is that it is reported to be due to a well-known French motor engineer.

THE Hungarian Post and Telegraph authorities in Budapest are inviting tenders until the 15th inst. for the supply of eight motor-vans for the postal service in that city. They are to be fitted with 10-h.p. two-cylinder petrol motors, running at not more than 1,000 revolutions per minute; they are to carry a load



The Archduke Leopold Salvator of Austria recently visited the works of the Austrian Daimler Motor Company at Neustadt, Vienna, and afterwards went for a drive in an Austrian Daimler Car. The Archduke is seen in the accompanying illustration seated at the side of Herr Fischer, one of the directors, who is at the wheel. [Allgemeine Automobil Zeitung.]

cars which, during the period named, will cover approximately the same distance.

THE Swiss Automobile Club has decided to organise a hill-climbing competition on the Port-Noir-Cologny road for the 24th April. There will be two classes, one for racing cars and one for touring vehicles.

THE City Council of Frankfurt-am-Main has decided to impose a tax of £10 each on all automobiles, except those used for purposes of business.

TWENTY-TWO cars and fifteen motor-cycles have so far been entered for the anti-skidding competition which the Automobile Club de Seine-et-Oise will hold from the 24th to the 28th inst. A number of prizes are being offered in connection with the competition, including an *objet d'art* presented by the municipal authorities of Versailles.

of 500 kilog. in addition to the driver and attendant. A maximum speed of nineteen miles an hour is called for.

FOUR entries have already been received by the Belgian Automobile Club for the Circuit des Ardennes—viz., Hautvast (Pipe car), Baron de Caters (Mercedes), Coppée (Panhard), and Madoux (Excelsior).

THE Elektrischer Kraftwagenbetrieb mit Oberleitung für die Verscheidethal Gesellschaft is the name of a company which has been formed at Bilstein to establish and work a service of electric motor-vehicles taking their current from overhead conductors, between Kirchveischede and Grevenbrück, Germany.

THE Nice Automobile Club has decided to organise an international automobile exhibition. It will be held in the Casino from the 2nd to the 10th April next.

THE "RYKNIELD" CAR.

IN our issue of April 18th last we recorded the opening of the large works which have been erected by the Ryknield Engine Company, Limited, at Burton-on-Trent, for the manufacture of the "Ryknield" cars. It may be remembered that the company was launched and financed by some of the most prominent members of the great brewing firms, and that the

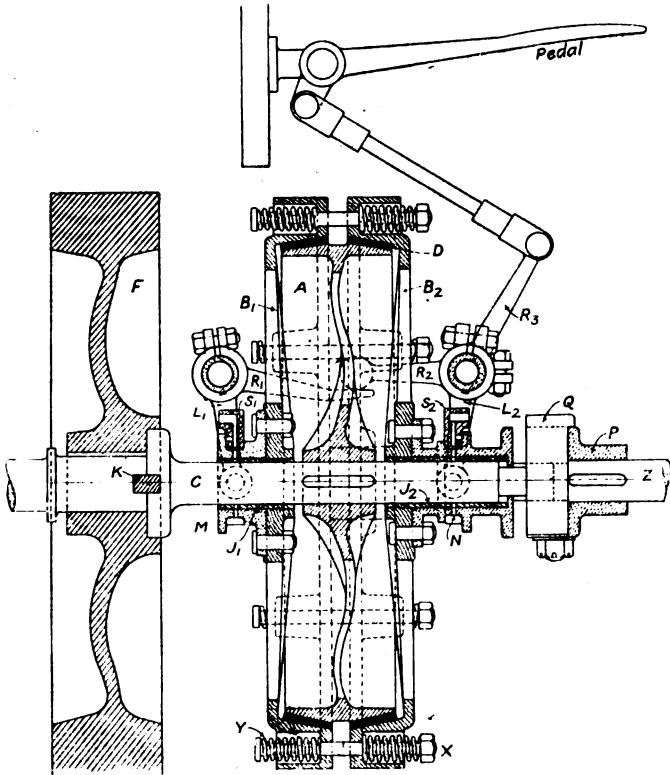


Fig. 1. -Sectional Elevation of "Ryknield" Clutch.

works are of the most modern description and are adapted for turning out in quantities cars of the highest grade. For the present the company is devoting its manufacturing energy to a 10-h.p. double-cylinder car, but the designs are in hand for a 20-h.p. four-cylinder vehicle having magneto and high tension ignition, four-speeds and reverse and side chain transmission.

The 10-h.p. Ryknield car follows in its general outline the best modern practice. On a pressed sheet steel frame is placed, under a front bonnet, a two-cylinder petrol engine, with mechanical inlet valves and magneto ignition. The new Longuemare carburettor with automatic air regulation is at present fitted, but we understand the company have in preparation an automatic carburettor of their own design. The drive is taken through the Ryknield duplex clutch to a three-speed gear-box, and thence by cardan shaft to the rear live axle. The latter is designed so that the driving shafts bear no part of the weight of the car, but pass through the hubs and drive back into them by jaw clutches. We do not intend at present to describe the car in detail, but think that a description of some of the special features will be of interest.

The clutch, unlike the majority, is independent of the main flywheel of the engine, but has a light clutch drum, having two sheaves, engaging one on either side, drawn together by springs common to both on the circumference, thus eliminating all thrust on the engine or gear box when in or out of gear. These sheaves at the same time so balance each other when put in gear as to be silent and perfect in action. The action of the mechanism will be readily followed by reference to Figs. 1 and 2. The clutch drum A is keyed to a floating shaft C, one end of which is let into a recess bored in the engine flywheel F, and deriving its motion by means of a transverse key K. The other end is butted against a cotter Q, which acts also as a dis-

tance piece between it and the change-speed gear-box shaft Z. It is prevented from falling out of place by sliding joints N and P. The part P which is keyed to the shaft Z has two channels cut at right angles, the horizontal one to take the tongue of the shank N, and the vertical one for the cotter Q, this preventing N from sliding out, so securing the clutch and at the same time leaving it flexible.

The two sheaves B¹ B² are drawn together on a clutch cone by means of twelve springs Y, which are kept in position by pockets and adjusted by means of nuts and bolts X. To unclutch, these two sheaves B¹ B² are drawn apart by pressing down the pedal which actuates cross shafts T¹ T² by means of levers R¹ R² R³, causing other levers L¹ L² to move outwards, thus drawing B¹ B² away from A by means of stirrups S¹ S² working in grooves M and N. The sheaves B¹ B² are prevented from twisting relatively to each other by means of lugs H¹ H² H³ on B, sliding in slots cut in B¹.

To remove the clutch the cotter Q is withdrawn, this allowing the shaft C to slide back and disengage with K and flywheel F; the clutch is then turned round until the tongue N is in a vertical position, so as to allow it to drop bodily downward out of the stirrups. Lubrication is provided by means of oil pipes from the dashboard attached to the top of the stirrups so as to let the oil down between the faces of the shanks and stirrups through holes in M and N to the bearing.

Passing now to the steering gear, the ordinary form of steering adopted in motor-cars is by worm and pinion, in which there is usually no means of taking up the slack due to any wear that takes place. Consequently, when the car is running, the front wheels, instead of being rigidly connected with the steering wheel, have an amount of play depending upon the wear. This has been entirely eliminated in the Ryknield arrangement, in which two nuts fitted upon a triple thread screw are employed. The two nuts work on radial surfaces, on a combined double crank lever. In Fig. 3 these are indicated by letters N¹ N², L being the crank lever, with the part R hinged at H. Should any wear take place in either the screw or nuts it can be taken up by removing a small cap D¹ in the side of the case,

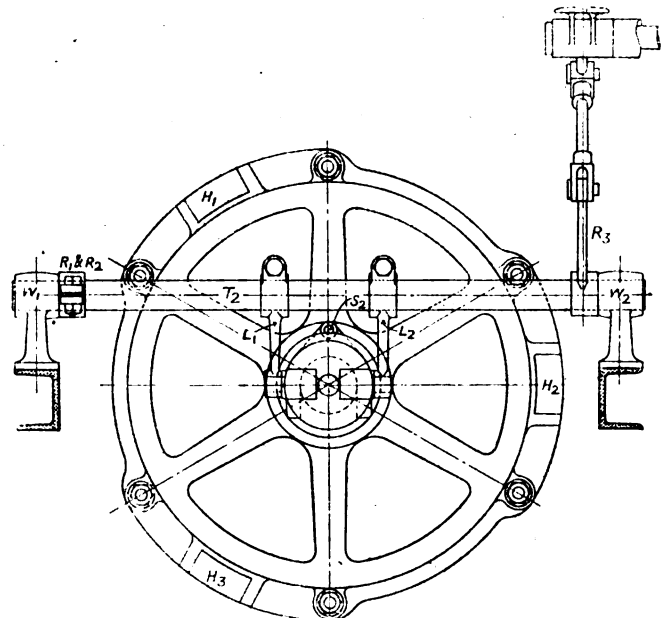


Fig. 2. -Front Elevation of "Ryknield" Clutch.

and screwing up one small wedge bolt C, which forces the two ends of the lever L and R apart from a fixed centre, thus pressing one nut against the top of the thread and the other against the bottom. Any play between the screw S and the case can be taken up by the adjustment screw A, which presses the stop D upwards, causing the collar E to press against the top of the case. Another great advantage is that whereas in the worm and pinion type the steering lever, which has to take all the shock

of obstacles on the road, is much overhung, in the Ryknield it is central, and thus takes a thrust direct to the screw. The case is made in halves and bolted together, being made oil-tight.

The steering wheel (see Figs. 4 and 5) is also of novel design. In place of the ordinary aluminium wheel, the "Ryknield"

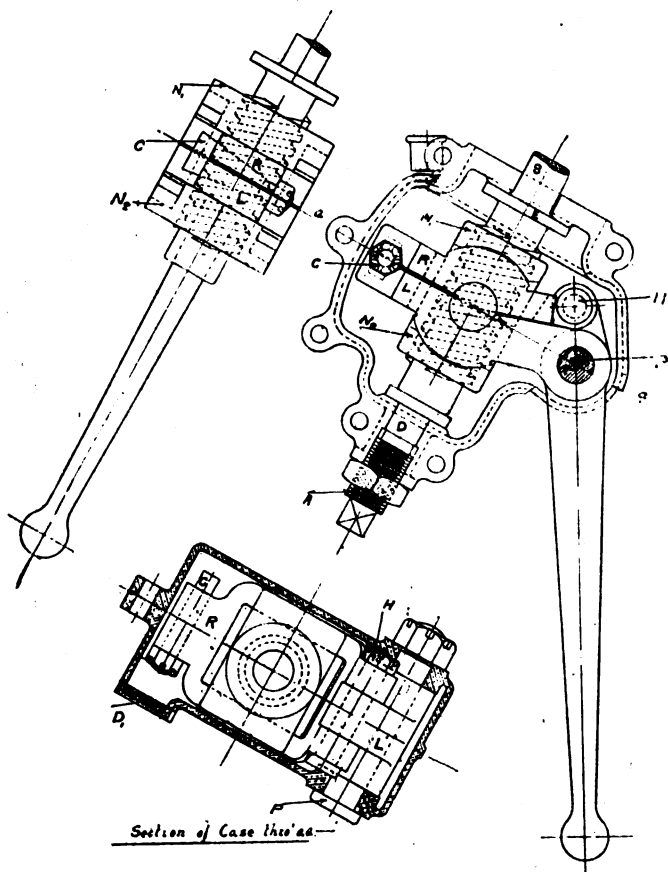


Fig. 3. -Details of "Ryknield" Steering Gear.

wheel is built up of dished steel spokes. These are built up upon a central steel boss and combine extreme lightness with strength, and obviate any danger of cracking across the boss. The two controlling levers for the ignition and carburettor are placed on the wheel, and may be operated without moving the hands. The levers L^1 L^2 turn about the steering shaft N , working against the quadrants Q^1 Q^2 (which are solid with the upper part of the wheel,) being held tightly in any position by springs T^1 T^2 . To retard or accelerate the engine the lever L^1 is pushed backward or forward. This is fixed to a sleeve A^1 which is cut with a spiral face, as is its counterpart B^1 . When A^1 moves forward relative to B^1 the latter is moved downward, being prevented from turning by the pin P . The lower sleeve B^1 has a groove turned in it to take a stirrup M^1 , which is fixed on the end of the rod R . Thus the wheel is left free to turn without interfering with the positions of the levers and rods. The rods R^1 R^2 work in a guide G which is fixed to the steering column C , so keeping the rods in position. The springs S^1 S^2 hold the bottom sleeve against the top one. The other lever is similar except that the sleeves A^2 B^2 are inside A^1 B^1 .

At the forthcoming Show the Ryknield Company will have a 10-h.p. chassis, a standard tonneau, a Victoria, and a light delivery van, in all of which the features referred to above will be found.

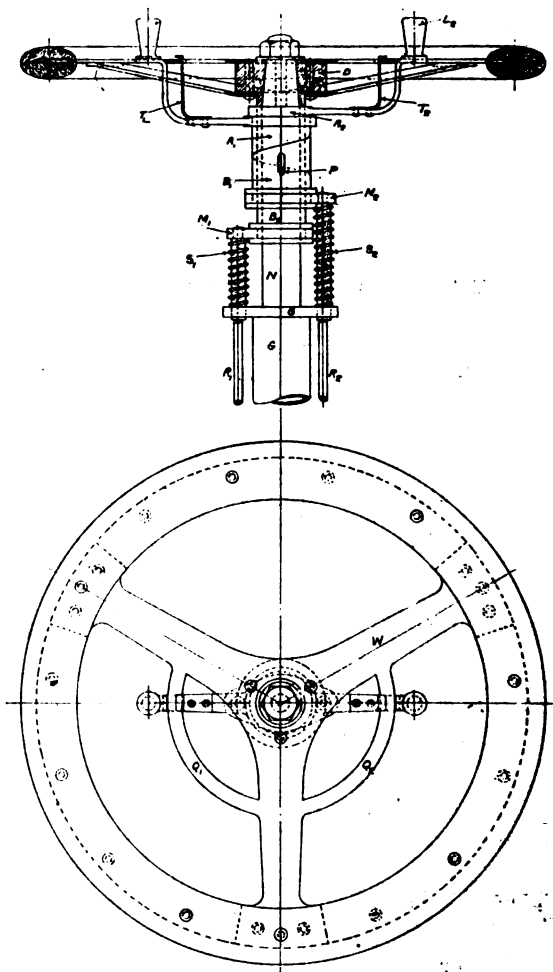
THE Massachusetts Highway Commission licensed 3,872 motorists and registered 3,206 automobiles in the first three months that the automobile registration and licensing law was in force. Professional drivers to the number of 678 were also licensed.

MOTOR-CYCLING NEWS.

THE annual meeting of the Motor Cycling Club was held last week. From the report of the work of the club presented by Mr. G. E. Roberts, the secretary, it appears that the number of members elected in 1903 was 109 as against 30 for 1902. The successful series of trials organised during last summer was referred to, and it was announced that Mr. S. F. Edge had offered two trophies for competition during the coming season. It is probable that a long-distance club run will be organised some time during the present year. A discussion ensued as to the desirability of having the executive committee composed solely of non-trade members, Mr. Tuchmann moving that the trade members, instead of being on the executive, should form an advisory committee and help the club in other ways. Eventually the proposal was negated by a large majority.

THE following runs for motor-cyclists have been arranged by the Sheffield Automobile Club:—Thursdays, 11th inst., Victoria Station Arches, for Blythe; 18th, Millhouses, for Baslow; 25th, Victoria Station Arches, for Bawtry. Saturdays, 13th, Hunters' Bar, for Grindleford; 20th, Victoria Station Arches, for Worksop; 27th, Hunters' Bar, for Castleton. The meet, on each occasion, will be at 2.30 p.m.

THE case of O'Donoghue v. Mcon, which will probably be heard in the High Courts in a few weeks, will secure a judicial declaration as to the position of the trailer in view of the Inland Revenue tax. This vexed question is certainly ripe for settlement.



Figs. 4 and 5. -Sectional Elevation and Plan of "Ryknield" Steering Wheel.

ONE of the alterations in the Minerva motor-cycles for the 1904 season as compared with last year is that instead of one accumulator of 30 ampère-hour capacity, two separate accumulators are provided to occupy exactly the same space, each having

a capacity of 15 ampères, and a two-way or rather a three-way switch is provided that enables the rider to switch on or off either accumulator. As this change necessitates a different method of connecting up the wires, the accompanying diagram showing the correct method of wiring may prove useful. The positive (red) terminals of the accumulators are connected by a short wire with the + terminal marked P of the coil, and the negative (black) terminals of the accumulators are connected respectively with the right and left hand terminals of the switch, whence the wiring passes along the left half of the handle-bar and is "earthed" when the left handle is screwed home. The terminal T on the coil is connected with the platinum screw of the contact breaker. The terminal M is connected by a short wire to the metal of the frame. The terminal on the other side of the coil is the one by which the high-tension current passes, and is connected by a thickly insulated wire to the sparking plug placed on top of the combustion chamber of the engine. In order to derive the utmost benefit from the provision of accumulators in duplicate, the rider should always make a practice of using one accumulator only at first, and not switching on the other until the first signs of running down and consequently requiring recharging. If the rider gets into

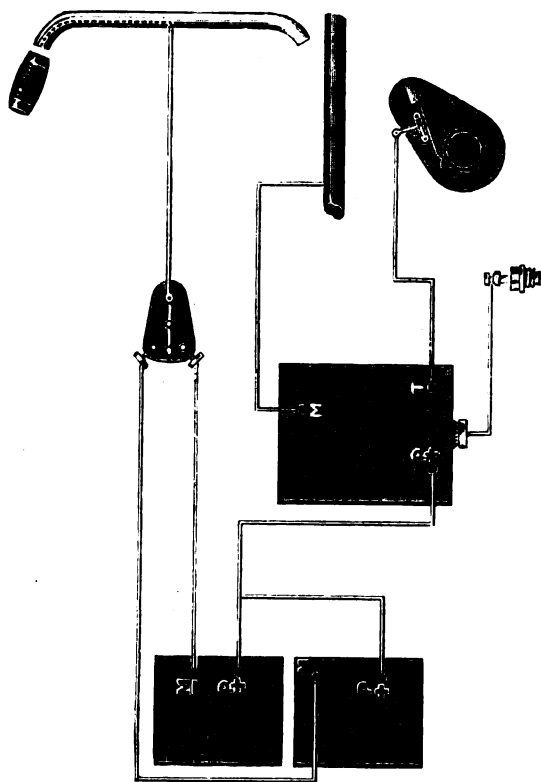


Diagram of Wiring for Minerva Motor Cycles.

the habit of using either accumulator indifferently, he runs the risk of exhausting both his accumulators simultaneously, whereas by using one first and then the other he has greater latitude to get one recharged before the other requires it. When detaching either accumulator for re-charging care must be taken lest the ends of the loose wires should come in contact with each other, resulting in immediate and injurious discharge of the other accumulator. The extremities of the M and P wires should be marked so that they can readily be identified and connected up to the correct terminals of the accumulator when replacing it.

A MEETING has just been held in Turin, when the formation of the Motor-Cycle Club of Italy was decided upon. A committee has been appointed to draw up the necessary rules.

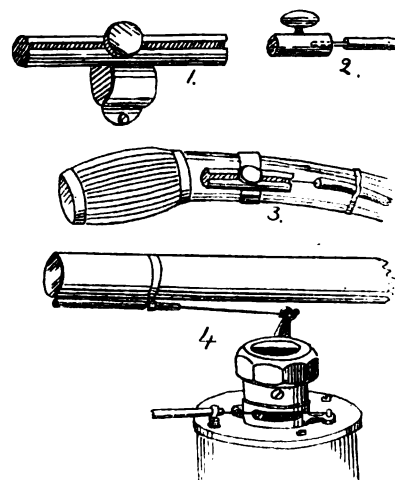
THE "Abingdon" is the name of a new fastener for the driving belts of motor-cycles which has lately been introduced by Messrs. Coxeter and Sons, Limited, of Abingdon, and of which illustrations are given herewith. As will be seen, the fastener consists of four parts—a curved wire with threaded ends,

a small plate, and two nipples. It is claimed to be unusually strong, while the fact that there are no projecting pieces is referred to as one of its advantages. The device can be used with every size of belt, flat or V-section. It is easily detached by



unscrewing one nipple and attached by screwing down the nipple.

THERE seems to be a growing tendency among motor-cyclists to adopt handle-bar control on their machines. The means it offers of being able to control the engine without removing the hands from the handle-bar of the bicycle are undoubtedly a great advantage; more especially is this the case in starting, when a firm grip of both handles is necessary to properly pedal, while in heavy traffic, or at night, the exact position of the various valves can be told by the feel alone, without in any way having to trust to one hand to steer the machine. In connection with his system of control Mr. George Roberts, of Twyford, near Winchester, has recently introduced the novel arrangement of thumb slides illustrated herewith. They consist of a piece of slotted tubing about 2½ inches long, with a clip for attaching to the handle bar, as shown at 1 and 3. The slide, 2, fits easily in the tube, and is moved backwards or forwards by means of the button. One end of a Bowden brake wire is attached to the slide, and the other end to the gas or air lever of the carburettor, as shown at 4. The latter can thus be instantly opened or closed without removing the hands from the handles of the machine, the natural position of the thumbs being always over the buttons of the slides. The amount of gas or air can be regulated with the greatest nicety, and, although the slides move easily under the thumb, they will not move from any shaking of the machine. They can also be used for advancing the spark and holding the exhaust valve open. Where two are required on one handle bar, twin thumb slides can be supplied,



two being fixed on one clip, or two of the single thumb slides may be used for the same purpose. In fitting the arrangement, it is essential that the outer portion of the Bowden wire should be firmly fixed close to the slide and also to some portion of the frame of the machine near the gas or air lever.

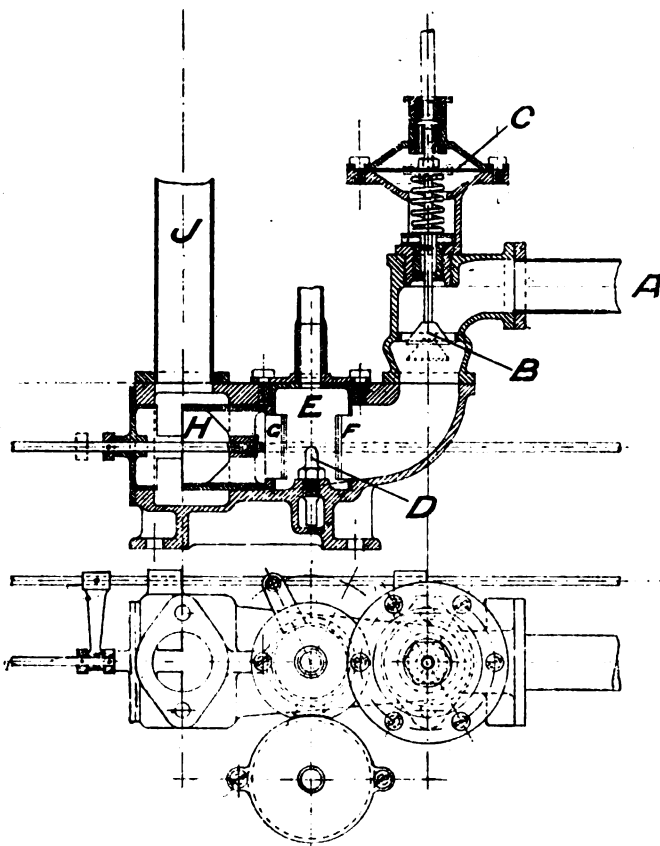
MESSRS. A. D. BARNETT, LIMITED, has been registered with a capital of £8,000 to carry on the business of manufacturers of and dealers in motor-cars, etc.

THE Middlesbrough Corporation Hackney Carriage Committee have decided to postpone for six months the drafting of regulations under the Motor Car Act.

THE "NAPIER" CARBURETTOR.

THE accompanying illustration gives the details of the carburettor which is now being fitted to the Napier cars.

A is the air admission pipe, B a throttle valve in the same controlled by a diaphragm C, subject to water pressure on its upper side, D is the jet, the petrol being maintained at a constant level by the ordinary float feed arrangement. E is a hollow cylindrical valve surrounding the jet and having two ports, one, F, controlling the air admission to the jet chamber, the other, G, throttling the mixture to the motor. This valve is controlled by the driver, an actuating lever being arranged on the steering wheel for this purpose. H is the ordinary valve controlled by the governor, independently of the hand throttle. J is the pipe leading to the motor. A perfect carburettor to allow the driver of a car to vary the speed or the turning effort of the motor and to give the best possible mixture under all conditions, without waste, must fulfil the following two conditions, or any combination of them: first, to allow the turning effort of the motor to be varied, the speed remaining the same; second, the speed to be varied, the turning effort to remain the same. In the new carburettor shown herewith this has been accomplished as follows:—The



first condition is fulfilled by the hand-controlled throttle E, for as the driver rotates this valve to reduce the supply of gas to the motor by the port G, the valve is also cutting off the air admission by the port F. By varying the shape and size of these two ports a permanent ratio can be established between the flow of gas to the motor and the air admission, and any desired suction obtained at the jet, the motor running at constant speed. The second condition is complied with by using the automatically-controlled throttle B in the air admission. To control this valve advantage has been taken of the fact that the water pressure in a pump-driven water circulation varies with the speed of the motor. Thus, suppose the driver wishes to slow the speed of his motor, he actuates the central throttle E, reducing the supply of gas to the motor and getting the correct proportions of air and petrol, then as the motor slows down the automatic valve still further reduces the air admission, in order to maintain the correct mixture.

The advantage claimed for the Napier carburettor is that no throttling action takes place when the engine is called upon to give its greatest power. When full power is desired the central throttle is wide open; the automatic valve is also wide open and held so by a force independent of the suction of the motor, the water pressure being available whether use is made of it or not.

THE "SUNBEAM" SIX-CYLINDER CAR.

IT was announced in these columns some time ago that Messrs. John Marston, Limited, were at work on a new six-cylinder "Sunbeam" car. We are now able to give a few particulars of the vehicle, which will be exhibited at the forthcoming Show. The engine has six cylinders, cast together in three pairs. The bore and stroke are the same as in the "Sunbeam" 12-h.p. car, and the cranks are set at an angle of 120 degrees. The valves are all mechanically operated, the inlets being on the opposite side to the exhaust, and are interchangeable as far as valve seats, plugs, guides, etc., are concerned. A new feature is embodied in the inlet cam shaft, which is made so that the cams can slide longitudinally, they being sloped off towards the back, thus providing a variable lift to the inlet valves, giving a large range of control of the engine speed, at the same time effecting a notable economy in the quantity of petrol consumed. There is, of course, beyond this the ordinary throttle governing device, and in conjunction with the latter another new feature has been added, this being a pneumatic brake for the engine. A new compensating air valve has been fitted to the carburettor. The clutch is of the metal-to-metal internal type, running in oil, giving, it is claimed, no thrust either on the engine or the gear box. Two forward speeds and one reverse are provided, the top speed being so arranged that when in gear the drive is direct from the engine to the countershaft. From the latter the power is transmitted by side chains to the rear road wheels. The lay shaft for the second speed lies idly in the box when the top speed is running. Both engine and gear box are automatically oiled. The brakes are three in number, two internal metal-to-metal on the rear wheels running in oil and in the chain cases and the third, also metal-to-metal, on the differential gear. Carried on the steering wheel are the two levers for the accelerator and variable lift to the inlet valves, whereas the advance spark lever is underneath the wheel in the position it occupies on the 12-h.p. cars. The steering is non-reversible, with the cross bar located behind the axle so as to reduce to a minimum the risks of accidents. An effort has been made in the new car to abate the dust fiend by putting a new type of steel shield under the vehicle from end to end. There is nothing whatever below this shield excepting the steering arm and the pipe to carry away the exhaust.

THE Select Cycle and Motor Manufacturing Company has been registered with a capital of £6,000 and offices at Greenock.

FURTHER experiments have been made on the Selby and Cawood Light Railway with the new motor rail coach which has been constructed for the North-Eastern Railway Company, and its working has proved very satisfactory.

THE A. G. Mulliner Motor Body Company, Limited, has been registered with a capital of £2,000, to adopt an agreement with Messrs. A. G. Mulliner and T. C. Usher for the acquisition of the business carried on at Church as the Mulliner Motor Body Company. The first directors are Messrs. King and J. W. Wall.

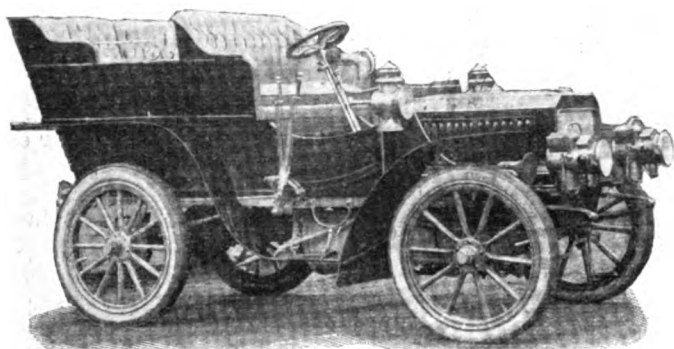
At the last meeting of the East Riding (York) County Council, the minutes of the Highways and Bridges Committee were agreed to. These included the report of the sub-committee appointed to take any steps necessary to give effect to the provisions of the Motor Car Act. The sub-committee recommended that notice posts should be as simple as possible, and that white posts be used to indicate that the speed should be reduced to ten miles an hour until the next white post was reached, and that red posts be used to indicate dangerous corners, cross roads, and precipitous places.

HERE AND THERE.

THE Bury Town Council is considering the purchase of an automobile for its surveyor.

COLONEL CROMPTON has been explaining the dust problem to the members of the Camera Club.

WE understand that Messrs. H. B. Nelson and Company have opened a free motor garage at 7, Harrington Road, South Kensington.



The Beaufort Motor Company's new 10-h.p. Tonneau.

MR. F. F. WELLINGTON, who is well known in the automobile trade, has resigned from the firm of F. F. Wellington, Limited. He hopes to make early arrangements for the representation of some good motor-car firm in London.

It has been decided to file notices of objection on behalf of the Motor Union to the applications by the Borough Councils of Blackpool and Newbury for a ten-mile limit of speed within their districts.

15 CHANCERY SHAFESBURY AVENUE, London, is clear for through traffic south to north, but something should be done to prevent the fearful maze of traffic at the junction of Tottenham Court Road with Charing Cross Road.

A FIRE at Mr. Crisswell's motor-car stores, Newmarket, the other day, placed in danger a large number of valuable race-horses in a stable in the vicinity. The outbreak was, however, confined to the works, which were unfortunately destroyed.

At the first ordinary meeting of the Society of Engineers for the present year, held this week, Mr. Douglas Mackenzie was awarded the president's gold medal for his paper on "Motor Transport for Goods"; and Mr. R. J. Thomas the Bessemer premium for a paper on Road Maintenance.

THE racing committee of the American Automobile Association has officially accepted the record of 39 2-5 seconds for a mile on the ice at Lake St. Clair, made by Henry Ford, on the 12th inst. The affidavits of the timers and the statements of witnesses were noted, and the record accepted as the world's best for one mile straight away.

MOTOR 'buses were responsible for much discussion at the last meeting of the Eastbourne Town Council. The Town Clerk read a letter from Messrs. Clarkson, Limited, stating that their price for a double deck motor omnibus was £807 and for a single deck 'bus £735, and that they were prepared to deliver the latter in July and the former not later than August next, though they hoped it might be earlier.

The Society of Automobile Engineers is the title of an association which has just been formed in New York. It is the purpose of the society to hold frequent meetings for the interchange of ideas and knowledge on automobile construction, and, at quarterly meetings, to have papers read which will form the subject of discussion. Two classes of members are provided for—active, who must be actual engineers; and associate, who may be persons connected with automobile construction. Mr. A. L. Riker has been elected as first president.

THE Scottish Motor Garage Company, Limited, have storage for 200 cars at their garage in Renfrew Street, Glasgow.

MESSRS. JAMES AND BROWNE, LIMITED, are opening a West-end depot and garage at 395 and 397, Oxford Street, W.

A SERVICE of motor-omnibuses is being inaugurated between Forest Hill Railway Station and Camberwell, via Peckham Rye.

MR. THOMAS SHAW, of Dundee, has been lecturing before the local Society of Experimental Engineers on "Petrol Engines and Motor-Cars."

MESSRS. RAINY AND WATERS have secured a warrant from the Edinburgh Dean of Guild Court for the erection of a motor-car works in Westfield Avenue, Edinburgh.

IN the county of Leitrim three motor-cycles had been registered up to the end of last month. No motor-cars had been authorised nor had any licences to drive been issued.

THE Garrard Manufacturing Company, Limited, are bringing out a three-wheeled, two-seated car fitted with a 4½-h.p. water-cooled engine. The power will be transmitted to the rear wheel through a cardan shaft and worm gearing, three speeds being provided.

WE have received a copy of the first number of a new monthly journal entitled "Motoring in France." While published in Paris, it is printed in English, its object being to form a connecting link between the automobile movement and industry in England and France.

SIR EVAN JAMES, K.C.I.E., chairman of the directors of Clarkson, Limited, was present at a social gathering of the employees of the firm at Chelmsford at which Mr. T. Clarkson thanked the men for their share in winning the distinction lately accorded the firm's steam cars.

MESSRS. SELBACH, LIMITED, is the title of a company registered with a capital of £80,000 to carry on the business of automobile builders and proprietors, etc. The number of directors is to be not less than two nor more than five. Mr. O. C. Selbach is the first, and has power to nominate two others.

MESSRS. WILLIAM GUEST AND SON, of the Neptune Works, Sheffield, have sent us samples of their repair outfits, ranging in price from 6d. to 2s. The latter size is specially adapted for motor-cyclists' use, and in view of its contents and handy size can be well recommended as a necessary adjunct to the tool-bag.



The "Soames" Motor Van, built by the Langdon Davies Motor Company, Ltd., for the Imperial Tobacco Company, Ltd.

MESSRS. JOSEPH LUCAS, LIMITED, send one of their court plaster and stamp cases and perpetual time-to-light-up tables, with which they seek to give familiarity to their name among motorists. They have also issued a wholesale catalogue of motoralities for 1904, in which their well-known specialities are fully described and clearly illustrated.

AN International Union of Motor-car Drivers has just been formed in Milan.

THE ELECTRIC IGNITION COMPANY, of Birmingham, have just brought out a secret and combination switch and a new contact breaker, which they have provisionally patented, and of which illustrations are given herewith. Fig. 1 shows the switch, the handle of which is made detachable and can be entirely removed when the car or motor-bicycle is left unattended. A couple of turns or so breaks the contact, and this locks up the electricity effectively,

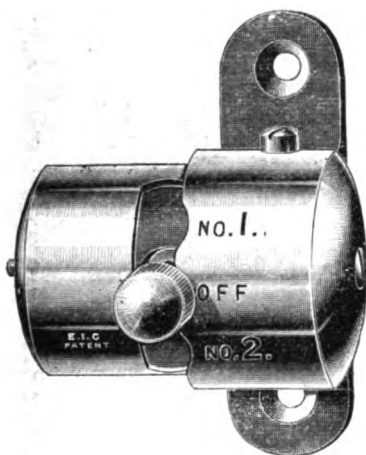


FIG. 1.

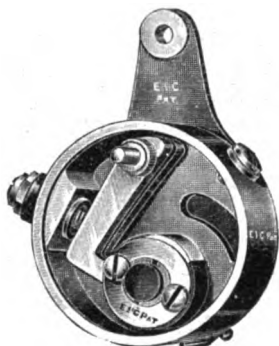


FIG. 2.

as it is unlikely that anyone who wishes to tamper would think of screwing down the handle before using. When the handle is in either of the outside positions a slight pressure outwards breaks the circuit, which remains interrupted as long as the pressure is maintained, but on this being withdrawn the handle flies back and makes contact again, a feature which will be appreciated by motor-cyclists in traffic-riding, and also by drivers of cars in passing restive horses, as under the new regulations it is necessary to stop the engines firing, if required. The new contact breaker, shown in Fig. 2, is made on the company's wipe principle. The metal composing the blades is of the hardest material obtainable, and is, it is claimed, not likely to wear away. The return current is earthed by a separate wire, the makers not believing in earthing through moving parts, oil being an insulator and consequently setting up a certain amount of resistance. The cam is made on a new principle, allowing adjustment for timing purposes, at the same time being held absolutely rigid on the half speed shaft. The arrangement is stated to also reduce the wearing away of the fibre to a minimum.

AT a meeting of the Glasgow University Engineering Society, on the 11th inst., Mr. L. Rottenburg, M. Inst. C.E., will read a paper on "Recent Developments in Internal Combustion Engines."

CHARLES JAMES, driver to Lord Charles Fitzmaurice, has been summoned at Chippenham for driving a motor-car across the town bridge at a speed between fifteen and twenty miles an hour. He was fined £5 and costs.

MESSRS. S. HOLMES AND COMPANY, of Albion Works, Bradford, have just brought out a handy little jack for lifting the wheels of motor-cars off the ground. When extended the jack is 17 in. high, while when closed it is only 7½ in. long; its weight is 5 lbs.

THE farmers on some of the local councils in the Fen districts were engaged in very congenial work in suggesting notice boards for motorists with alarming frequency along their roads. But the fact that the county funds will have to bear the cost is restraining their ardour.

WESTRUMITE has been used upon the concrete floors of the warehouses of Messrs. Friawell, Limited, with satisfactory results. Hitherto they had difficulty in keeping new carriages free from dust, which seemed to rise out of the cement, but since using Westrumite they have been saved much inconvenience from that cause.

Two London motorists have registered their vehicles in Monmouthshire, so as to secure low numbers.

THE latest "Goodrich" tyre showcard depicts "Babette," and will doubtless be much appreciated by agents.

NEW works for the repair of motor-cars and the storage of petrol have been erected by Mr. W. Scott, at Dunstable.

MESSRS. POWELL AND HANMER have registered their business of motor-lamp makers, etc., as a limited liability company.

THE Lancashire Steam Motor Company, Limited, has lately completed a heavy steam wagon for the Wigan Coal and Iron Company, Limited.

THE Automobile Club de France has just issued, in book form, the regulations under which motor launch and yacht races are to be run in France.

A SOUVENIR of the Gordon Bennett race of last year comes from the Continental Caoutchouc and Gutta Percha Company, whose tyres were fitted to the winning car.

THE French Post and Telegraph authorities are arranging for the conveyance of the mails between Arras and Albert and between Calais and Colembert by motor-car.

FROM the office of the "Local Government Journal" comes the Local Government Annual and Directory for 1904. This is now in its thirteenth year—a sufficient tribute to its utility.

FROM M. J. Barreau, publisher, Paris, comes a handsomely got up booklet the bulk of which is devoted to a description of Messrs. De Dion Bouton's large works at Puteaux. This is followed by an account of the excursion to the Meuse by a party of motorists all owning De Dion cars, in August last year, while the concluding four pages are devoted to some useful hints with regard to De Dion cars.

POLAND STREET, Oxford Street, W., is now associated with automobilism, the Lacre Motor-Car Company, Ltd., having established itself in the conveniently located West-end thoroughfare. Hitherto this concern has been known as the Long Acre Motor-Car Company, Limited, and the alteration in name is consequent upon the change of address. The company is the sole London agent and official repairer for the Wolseley Company, and in their extensive showrooms they have the latest models of the Wolseley cars, both for inspection and for trial runs. In company with Mr. F. Goodchild, the courteous secretary, we recently made a tour of the four floors of the premises, which are numbered 1, 2, 3, 4, and 5, Poland Street. There is ample garage accommodation for forty cars, lockers being provided for each owner, and also facilities for the washing of cars. There will also be a special bench at the service of his driver or mechanic in making repairs, thus giving some of the advantages hitherto only possible in a private motor house. A lift with a platform 16 ft. by 9 ft. ascends from basement to top floor, where are the stores of spare parts and accessories. The various compartments ranged along the walls in shelves number 2,000, each being carefully indexed so that any piece can be found without confusion. In the basement is the cement-floored washing compartment and benches for workers in metal; on the ground floor are the showrooms, with double folding doors opening into Poland Street and giving a carriage way of 15 ft. or 16 ft. There, too, is the series of lockers for users of the garage. On succeeding floors are wood working shops, varnish rooms, aluminium stores, and everything requisite for the making of motor-car bodies—a speciality with the company. The repair shops are equipped with everything making up a modern plant. Motors can also be tested; in fact, the establishment is complete in every respect. A licence has been obtained for the storage of 250 gallons of petrol, and not only is the place electrically illuminated but there is every facility for the charging of electric cars as well as of accumulators. The roof is utilised as a timber store. Telephonic communication with every section of the vast premises adds to the ease of management. During our visit we saw several good types of bodies in course of manufacture and the Lacre Motor Car Company should be prominent during the coming season with the Wolseley landaulettes fitted with side doors of excellent design.

OUR DIRECTORY OF "NUMBERS."

[ALL RIGHTS RESERVED.]

Below is a further instalment of Motor Car Numbers. Motorists who have not yet communicated with us are invited to forward their Name, Addresses and Numbers.

McCammond, J. N., Ormisdale, Fortwilliam Park, Relfast	O.I.	6
M'Lean, Wm., 343, St. Vincent Street, Glasgow	G.	84
Morris, E. T., 137a, Finchley Road, Swiss Cottage	G.	85
Milne, G., Turland Cottage, New Pitligo, Aberdeen	A.	2728
Mortimer, J. E., 19, Maxilla Gardens, W.	S.A.	5
Murray, E. Irving, Ellesmere, Weybridge	A.	2457
Moffat, Alex. G., Southville, Swansea	A.	447
Mott, C. M., Townend Road, Wisbech	C.Y.	3
Morris, T. A., Bourne	C.Y.	68
Mowlem and Co., Limited, J., Westminster	E.B.	32
Macintosh, Dr., Bird Side, Clapham Common, S.W.	C.T.	42
	A.	692
	A.	1626
Nairn, W., 20, Airdale Avenue, Chiswick, W.	E.J.	3
Nestle, H., 48, Cannon Street, E.C.	A.	3056
Oxley, W., Selwood Lodge, Shirecliffe Lane, Sheffield	W.	163
Oswin, J., Norwich Road, Walsoken	E.B.	25
Power, Owen, 43, Park Street, Bridgend	L.	70
Philbrick, E., 28, Marloes Road, Kensington	A.	632
Payne, A. C., 89, Clapham Common, North Side, S.W.	A.	720
Pryke, Palmer, 28, Broad Street, King's Lynn	A.H.	121
Peake, C. H., Whitkirk, near Leeds	V.	33
Portal, M., High Sandhoe, Hexham	X.	8
Pouzo-Maurice, Rev. F. L., Kimbolton Vicarage, S. Neots	E.W.	13
Phillips, H. Russell, Lannoweth Terrace, Penzance	A.F.	8
	A.F.	5
	E.B.	23
	E.B.	28
Pierce, Dr., 137, Park Street, Liverpool	K.	121
Pearce, Wm., "Neilgherry," Dyke Road, Brighton	C.D.	8
Padwick, E. D., Manor House, Horsham	B.P.	91
Prior, Samuel, M.B., Mulgrave House, Huddersfield	C.X.	3
Partington, E., Ormskirk Road, Newtown, Wigan	C.X.	8
Putman, James, Bicester Road, Aylesbury	B.	105
	B.H.	87
	B.H.	88
Ratcliffe, W. H., 17, Osmaston Road, Derby	C.H.	40
Read, H., Osborne Villa, Totton, Hants.	C.R.	83
Roper, Wm., St. Ronan's, Southport	B.	211
	B.	299
Rowley, Miss, Sylvan Park, Kells, Ireland	A.I.	15
Ribbons, S. W., 12, Raleigh Road, Hornsey, N.	A.X.	37
Ribbons, H. G., 12, Raleigh Road, Hornsey, N.	A.X.	36
Ridge, J. J., Dr., Enfield	H.	179
Ridley, L. T. R., Fulwell Sea Lane, near Sunderland	X.	149
Roberts, Dr. C. Hubert, 21, Welcher Street, W.	A.	128
Raine, W., 35, Penley's Grove Street, York	D.N.	12
Ryall, Chas., 51, Queen Anne Street, Cavendish Square, W.	A.	114
Robinson, Peter, Scot Lane, Newtown, Wigan	B.	106
Standeven, J., Halifax	C.P.	17
Soraby, J. H., Halifax	C.P.	19
St. Lawrence, Lady Geraldine, Claddagh, Windsor	S.P.	26
Short, H. W., Sundridge Parade, Bromley, Kent	D.	225
Snowden, C. M., Riseley Hall, South Stanley	D.	779
Smith, H. J., Old Market, Wisbech	C.	100
	E.B.	38
	D.3	D.4
	D.5	D.6
	D.7	D.8
	E.	74
	E.	75
	E.	76
Seymour, J. B., 5, Church Street, West Ham	A.N.	3
Sadler, Leonard F. V., Market Place, Burton-on-Trent	A.N.	30
Sadler, Bernard F., Market Place, Burton-on-Trent	F.A.	9
Sollas, Percy T., 36, King Henry's Road, S. Hampstead, N.W.	F.A.	8
Smith, Ernest H., 4, Market Place, Honor Oak Park, S.E.	A.	1407
Shaw, Harold, 10, Gloucester Terrace, Hyde Park, W.	A.	445
Stanton, W. J., 24, Abingdon Street, Northampton	A.	34
Smith, Edgar, Halifax	A.	2718
Stephenson, Dr. F., Mayfield, Blackburn	D.F.	28
	C.P.	10
	C.B.	16

Swain, John, Tufnell House, Tufnell Park Road, Holloway	A.	2034
Street, S. G., Beethoven House, King's Lynn	A.H.	84
Szumper, E. F., 39, Rusthall Avenue, Bedford Park, W.	E.J.	1
Smith, J. Wales, 10 and 12, Rampart Road, Woodhouse, Leeds	U.M.	4
Sims, F., Suffolk Parade, Cheltenham	A.D.	64
Simms Manufacturing Company, Limited, Welbeck Works, Willesden Lane, N.W.	H.	340
	H.	341
Townshend, R. H., Elcot Park, Hungerford, Berks	B.L.	212
Tait, Thomas A., Ovenden House, Tenterden, Kent	D.	214
Torquay Motor 'Bus Service	T.	46
	T.	106
Taylor, G. E., 5, Oakhurst Terrace, Benton	X.	121
Tapp, Mrs., The Hill, Bromley	D.	200
Tyler, Dr., The Crescent, Wisbech	E.B.	20
Theed, Capt. W. H. A., Homestall, Amhurst Wood, E. Grinstead	A.P.	241
Tytherleigh, E. J., 141, Christchurch Road, Boscombe, Bournemouth	E.L.	143
Tebbutt, S., "Bigenholt," Northlands Road, Southampton	C.R.	2
	C.R.	4
Thomas, T. E., 46, Airdale Avenue, Chiswick, W.	E.J.	2
Underhill, G., Okehampton	T.	162
Veale, Dr., Drighlington, near Bradford	U.	96
Vaughan-Jenkins, W., Combe Grange, Monkton Combe, Bath	Y.	79
Warker, H., 14, Brookfield Avenue, Roundhay Road, Leeds	U.	4
Winter-Wood, E. J., "Kenwick," Paignton	T.	10
White, J. Holmes, Clarendon, Newcastle-on-Tyne	X.	28
Wavell, Miss, Halifax	C.P.	12
Wellington, S. H., Tuffley Avenue, Gloucester	A.D.	19
	A.D.	20
Walpole, J., Tydd Goat, Wisbech	E.B.	33
Walford, Eric W., 18, Hertford Street, Coventry	D.U.	77
Wigley, Mr. Lynton, Brunswick Road, Kingston Hill	P.	472
Watts, Hall, Bishop's Burton, Beverley	B.T.	20
Waddington, A., Poppleton, Yorks	C.	418
Wood, A. W., Glenholm, Buttershaw, Bradford	A.K.	63
Wolstenholm, Dr., M.B., Egerton Terrace, Newtown, Wigan	B.	60
Wood, J. M. S., M.B., West Leigh, Rotherham	E.T.	4

DEALERS' MARKS.

M'Farlane, T., 22, South Methven Street, Perth	E.S.	A.
Rennie and Prosser, Limited, 93 and 95, Mitchell Street, Glasgow	G.	A.
Jennings and Company, 86, Mitchell Street, Glasgow	G.	J.
Hozier Engineering Company, Bridgeton, Glasgow	G.	D.
M'Lean, Wm., 313, St. Vincent Street, Glasgow	G.	G.
Albion Motor-Car Company, Limited, South Street, Scotland, N.B.	H.S.	A.
Mo-Car Syndicate, Limited, Underwood, Paisley	X.S.	P.
Love, John, Bennoch Road, Kirkcaldy	S.P.	A.
Ariel Motor Co., Ltd., 132, Long Acre, W.C.	A.	B.Y.
Brush Electrical Engineering Co., Belvedere Road, S.E.	A.	B.O.
Friswell, Ltd., Albany Street, S.W.	A.	B.F.
Lacre Motor Co., Ltd., Poland Street, W.	A.	D.M.
James and Browne, Ltd., 342, King Street, Hammersmith	A.	J.
Donald and Co., 61, Goldhawk Road, Shepherd's Bush	A.	D.V.
Putney Motor Co., Upper Richmond Road, Putney	A.	E.Y.
Great Central Garage, 300, Marylebone Road, W.	A.	C.S.
Begbie Manufacturing Co., 407, Oxford Street, W.	A.	G.O.
Carlton Garage, 5, New Burlington Place, W.	A.	C.T.
Roots Oil Motor and Motor-Car, Ltd., Chicheley Street, York Road, S.E.	A.	R.
Lancaster Motor Garage, Lancaster Gate, W.	A.	F.L.
Beaufort Motor Co., 14, Baker Street, W.	A.	B.
Weston Motor Syndicate, 14, Mortimer Street, Regent Street, W.	A.	W.
Century Engineering Co., Cumberland Park, Willesden Junction	A.	H.
British Automobile Commercial Syndicate, Ltd., 1, Endell Street, W.C.	A.	B.C.
Langdon-Davies Motor Co., Ltd., 101, Southwark Street, S.E.	A.	D.L.
Simms Mfg. Co., Ltd., Welbeck Works, Willesden Lane, N.W.	A.	H.K.
Imre Engineering Co., Ltd., 48, Tottenham Street, W.	A.	D.D.
Donne, Morgan, St. John's Square, Clerkenwell	A.	F.D.
Gobron Motor Company, Knightsbridge	A.	B.P.
"Spark" Motor Company, 186, Pentonville Road, King's Cross	A.	G.Z.

To be continued.

CORRESPONDENCE.

THE REPAIR OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have just read "Chirurgeon's" letter on this subject in the last issue of the *Journal*. By the items mentioned in the account given these appear to be nothing but gross overcharges. If the engine is of standard type the piston ought not to have cost more than half the price mentioned; the studs for back axle could undoubtedly have been replaced by standard bolts costing only a few shillings; the charge for new bushes for the crank case is not out of the way, but the castings appear to be charged for twice. A new timing gear complete could have been fitted for the charge of the commutator. With reference to the back axle, as far as I can judge the same thing has been charged for three times. It is not customary to charge separately for taking down an axle and re-erecting it; this is generally included in the repair. I should imagine a man to be a very slow workman to take eighteen hours to remove an axle from a car and take the same to pieces. Fitting this together seems to have taken the same length of time, and then there is still a further charge for fitting this to the car. The price of gear wheels is rather a difficult matter to estimate without knowing exactly their size and form. If the wheel is entirely new, the charge is reasonable, but if it was only fitted with a new hub is decidedly an overcharge. I should imagine the tyres were charged for twice by the price mentioned, but this is very difficult to say without knowing the size. There also appears to be a great overcharge with reference to fitting the new rim.

It is not the usual practice in the repair shop to charge for doing repairs and then on the top of that to charge up men's time and use of engine and lathes—these items are generally included in the repair, so much being charged for the man's time, with a certain amount per hour for the use of machinery, making the whole up to a certain price inclusive.—Yours truly,

H. J. T.

TO THE EDITOR OF *The Motor-Car Journal*.

In reply to "Chirurgeon's" letter, his account seems to have been made out in a very extraordinary way, as in some cases "turning and boring" is charged for, in others "use of engine and lathe," and in others only the number of hours worked. The account would have been much more comprehensive if it had all been charged out in the same way. Of course it is customary in the engineering trade to charge for the use of machinery, but that is usually added to the number of hours worked and so much per hour extra. Some of the items in the account seem exorbitant.—Yours truly,

THE WATFORD ENGINEERING WORKS.

SILENCERS AND HEATING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As many suffer from cold feet when motoring, I often wonder that the cooling water is not carried from the cylinder under one's feet before going to the radiator. I fitted my small car up like that three years ago, and have always been kept quite comfortable all weathers. It warms the whole body through the feet.

The silencers. Why cannot these be dispensed with, and a simple outlet valve be fixed to exhaust pipe? This, one would think, would pass the exhaust freely and close to prevent the back rush of air into the tube which is the cause of the noise. As the mixture expands suddenly on ignition and then almost immediately contracts to less than its original bulk before firing, it looks as if a valve silencer should increase the power, by sucking the piston back.—Yours truly,

C. H. 40.

LIABILITY OF REPAIRERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will any of your readers write their views as to the liability of repairers in the case of fire? Is it necessary to insure motor-cars sent for repair against possible loss or damage by fire? Are we liable in the event of their being burnt by a fire occurring on the premises?—Yours truly,

W. E. W.

PARAFFIN v. PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be very pleased if any reader could give me the following information:—What is the relative efficiency as to amount of work that can be done with one gallon of Royal Daylight paraffin oil as against petrol of 700 gravity? To make my question quite clear, suppose one gallon of paraffin (used through an efficient vaporiser) can keep an engine going at a given speed for one hour, how long would one gallon of 700 spirit keep the same engine going at the same speed? I want to arrive at the difference of cost, if any.—Yours truly,

CYCLE MECHANIC.

[The question put by "Cycle Mechanic" is somewhat an unusual one, and cannot be readily answered without experimenting. Perhaps some

of the makers of the various carburettors suitable for paraffin could give some information on the point.]

PUMPS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of your readers kindly tell me of any good circulating pump (other than a cog pump) to take the place of the cog pump on the earlier type of De Dion voiturette? I find it impossible to fit the ordinary type of centrifugal pump on account of want of clearance for the central water inlet. The water inlet and exit should both be on the same side.—Yours truly,

T.

[There are many different types, other than the centrifugal, which would, no doubt, suit T.'s purpose. A great number of them will be found illustrated in the price lists of any of the large motor accessory firms, such as those of Messrs. Brown Bros., Mr. Oscar Selbach, etc., among which a suitable pump ought to be found.]

AN ACCUMULATOR QUERY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Not the least valuable part of your admirable *Journal* is the correspondence columns. One has only to read this each week to obtain a valuable store of useful information, and I wish to ascertain from someone who knows better than myself (of whom there are many) whether I am doing right in using two accumulators coupled together of 4 and 6 volts on a 6-h.p. car (De Dion). When I first got the car it had a battery of three dry cells, which after running out I replaced as above.—Yours truly,

A CONSTANT READER.

[In answer to "A Constant Reader's" enquiries re coupling accumulators, one of these, giving off four volts, is quite sufficient to drive his car. By using a higher voltage there is a possibility of shorting the coil and rendering same useless. It is very seldom that a higher voltage than four is used on any car.]

RECKLESS DRIVING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I trust that you will find space for a protest against the disgraceful manner in which some motorists drive along the Kew road, Richmond. This road runs from Kew Bridge to Richmond, and is one of the favoured routes from London into Surrey. In many parts it is less than thirty feet wide, and has fourteen side roads running into it in about a mile, with the addition of a tram line usually in a more or less greasy state. The majority of motorists drive along it with reasonable care, but there are many who drive at a speed that is disgraceful, thirty, thirty-five, and forty miles per hour being not uncommon.

On Saturday, January 30th, about 1 p.m., a green Mercedes was driven along this road at fully the latter speed, dashing from side to side to get round a bus and then a tramcar, throwing sheets of mud and slush on to the foot passengers. At this high speed it cleared the tram by a few inches; had there been the slightest swerve a bad accident would have resulted. As it was, it thoroughly scared the driver of the tram, also many of the passengers.

Although in Surrey, the police in this district are perfectly fair and friendly to motorists. I have not heard of a single prosecution for furious driving along this road, even with the ample provocation given. I know for a fact that a number of the residents intend to petition the police to stop the abuse if it is continued during the coming season, and then we shall have the usual police trap, and most likely the innocent law-abiding motorists will suffer for the reckless cad. Trusting that this warning will have a beneficial effect.—Yours truly,

A RICHMOND MOTORIST.

UNIVERSAL NUMBERING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your current issue you quote some remarks of Judge Emden, who clearly favours the numbering of horse-drawn vehicles. Let us agitate, not for the abolition of numbering, but for its universal application. I believe we should either secure this, which would remove the special motorist grievance, or we should arouse the spirit of English fair-mindedness to say, if horse-drawn vehicles are not to be numbered neither shall automobiles. If anyone has a better policy for removing motorists' grievances and benefiting the industry without injury to others, I shall be interested to hear it. To me the plan seems to offer the solution of a difficulty otherwise insuperable.

I am myself an owner of horse-drawn vehicles, and shall remain such, although I would gladly be a motorist. I should not object to have number-plates on my automobile when I bought it provided that my horse-drawn vehicles had to carry numbers also. But if the choice be, as it now is, either to ride in a vehicle officially branded as subject to special police vigilance or to ride in a horsed carriage with no such taint upon it, I choose the latter.—Yours truly,

SWITCHED OFF.

BURNT GASES AS MOTIVE POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should esteem it a favour if any of your readers would inform me whether my idea of utilising the burnt gases of a petrol motor as a motive power to drive a car is practicable. The apparatus would consist mainly of three parts, viz., a petrol motor, which may be termed the "explosion generator"; a pressure tank, and an ordinary double acting pneumatic motor; a valve fitting is screwed into the walls of the cylinder in the explosion generator. Attached to this is the pressure tank with pressure gauge, into which the products of combustion from the explosions in the cylinder are forced and then carried to the pneumatic motor. This motor would be coupled, through a clutch at one end of the countershaft, to the explosion generator, and at the other end coupled direct to the back axle of car by means of chain-drive or bevel gearing.

To obtain the necessary starting pressure in tank a number of explosions would first have to be made in generator, which would be operated by a hand starting device.

The operation of working would be as follows:—The clutch disengaged, and the starting handle turned, drawing down the piston in generator to let in the mixture of petrol vapour and air. The compression of this mixture would follow on the upward stroke of the piston, then the firing of same by electric spark at the commencement of the next downward stroke, the explosion forcing the gases through the valve into the pressure tank and also exerting some of its force on the piston, causing it to descend. Still turning the handle, the piston again travels upwards, and further forces the gases into tank. The exhaust valve is then made to quickly open and close in order to let out the remaining gases in the small combustion chamber above the piston. The hand starting-device is thus continued until the pressure gauge shows sufficient power to start the pneumatic motor, which would transmit power direct to the back axle. The clutch is then made to engage in flywheel of generator and the throttle of pressure tank opened. As the car moves forward the piston in generator is thus made to travel up and down, causing the explosions and supplying an even working pressure in the tank.

The advantages of this system are:—Superiority over the steam engine, there being no boiler, condensing of steam, or trouble with burners, and superiority over the ordinary petrol motor, in the absence of all noisy change speed gearing, etc., and also a considerable saving in the consumption of petrol, as, on descending hills, disengaging the clutch would throw the explosion generator out of gear.—Yours truly,

H. M. J.

BENZ v. LIGHT CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am greatly disappointed with the discussion on this subject. The most that any correspondent has accomplished is to—and that is doubtful—restore the car to its original state of efficiency, and a poor thing it is at that. I will venture to say that there are potentialities in the old Benz car that none of the writers have yet dreamt of and which are capable of being turned to useful account, granted the required skill. In the cars referred to the Benz cylinder is 110 mm. diameter. It was first called a 1½-h.p., afterwards it was called 2.9-10-h.p., next it was called 3½-h.p. Interested and observing persons will have noticed that cylinders of that diameter by other makers are called 8, 9 and even 10-h.p. Does not this point to undeveloped possibilities in the Benz? I know a gentleman who has a "Benz Ideal" (2.9-10-h.p.) which has been skilfully altered and improved in the direction indicated above. What power it is now I cannot say, but I should think it is 6 or 7-h.p. He says the original power is sufficient for running on the level road, but now, when he comes to a gradient, it makes no difference to him. He has such a reserve of power that on coming to a hill the car, like a spirited horse, will make a dash, and actually go quicker. But this he does, I think, to create a little surprise for those who accompany him. He has a "Star" carburettor, altered to admit of a M.O. inlet. I believe he has only one belt. He has, I think, three band brakes, which somehow come into operation one after another by the pressing of one pedal. Such is the power of these brakes, that if all were put on at once you would be thrown off your seat. He can travel for two days without calling for petrol or water. What I have here said is subject to correction, as I am too far away to verify, but it is substantially correct. If you could get this gentleman to give a description of the transformation he has made in a Benz, we should have something worth reading.—Yours truly,

W. H. W.

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have noted with interest the remarks in the recent numbers of the *Journal* re solid tyres. I fully agree with several of your correspondents that many motors are useless to medical men and that no car which runs on pneumatic tyres is (to medical men) worth having. Personally I have always used solid tyres and found them to wear well. I have had two cars, both Benz make, which did good service. I ordered some three weeks ago a Brown car, completely English, from Messrs. Brown Brothers, the specification of which is as follows:—Two cylinders,

8-h.p., chain driven, artillery wheels fitted with 2½ inch solid buffer tyres, tonneau body with front glass and canopy with side curtains, affording complete protection in bad weather, and extra water-cooled brake. Its power, build and simplicity influenced my decision, and especially its performances on a trial trip up a winding hill of 1 in 4. I trust in six months to be able to report well as to its behaviour.—Yours truly,

CHARLES T. W. HIRSCH.

DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reference to the question of drivers I quite agree with the latter part of Mr. Edge's letter when he says that good men are difficult to get. But the real reason is because good men cannot get a wage which their experience merits. The majority of owners expect to get a good mechanic and driver at about 30s. or 40s. I know several men who would be pleased to enter private service if it was of any benefit to them. I myself have been brought up in the engineering trade all my life, the last four years being in the motor trade, building and repairing motor-cars, and driving, and also electric light work. I have during the last three months answered two advertisements every week, giving my experience, etc., but not stating any wages, and yet, strange to say, I have not received a single answer. I take it that advertisers could not pay what they consider a high wage. It is quite evident that such men getting driver-mechanics' wages in a works would not enter private service for the same remuneration, considering that they would have to put in much longer hours and have less comforts than formerly. Owners seem to prefer to keep a man who can simply drive and clean a car, and send out for every little repair that needs doing, instead of keeping a good man who can do every repair. In the end the owner has by the other plan to pay double for his repairs, as a good many drivers do not know when a car is going wrong until it breaks down altogether. "Sub Judice" is right when he says ex-coachmen are not always so handy at washing a car as a mechanic. I must admit that coachmen make very good drivers, but let the slightest mechanical defect present itself and a man has to be sent from the works to put it right, or the car sent to the works, and perhaps in most cases the car is running right again inside ten minutes and probably costs several pounds.—Yours truly,

ONE WHO KNOWS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a driver of some little experience, I avail myself of the happily-worded invitation in your recent issue to express my views on this subject. It seems to me that the class of man Mr. Edge finds it so difficult to obtain must be a good practical engineer, and he must also be a good gentleman's servant. Now I believe that, in getting his training as a practical engineer, a man naturally acquires that which unfits him for the duties of a servant.

First.—He acquires an independent spirit, born of the knowledge of his own craftsmanship. He is not dependent on his "character," as the servant is. Provided he is a good workman he can always obtain work where there is work to do. The manufacturer does not enquire how long a man held his last situation, or whether he is honest. The manufacturer takes care that the man is honest. Can the man do his work? that is the question. So he is naturally an independent individual, this good mechanic.

Second.—The works he has gained all his experience in (and paid a good price for it too), shuts its doors at 5.30 or 6 p.m. as the case may be. He goes home to wash, to feed in peace, to feel he has done his day's work, and also that he is free. He may have a hobby, or he may work to improve his position. Anyway, he has four hours of every day to live his life in. On Saturday at noon he is "done" again—a clear spell till Monday morning. If his hobby has been to make a motor-bike, he is off to Brighton or Scarborough—out "on his own," an automobilist himself, free.

Third: If he is ambitious, as many are, he has ample scope to make a career of his own.

Set against these:—A servant must be the very reverse of independent. The servant who "lives in" is never "done," never "free." Driver once, driver always, and I think we have a fair statement of the case. I believe the foregoing to be facts, and contend that they show that an engineer, who is also a driver, in private service, has to perform duties which the nature of his training makes very difficult for him to perform. Also, that unless he has more consideration from his employer than is very often the case, he is far better off as an engineer at the "works." I think the tendency, in the future, will be for the engineer to leave private service severely alone—to leave it, in fact, in the hands of the coachman, and apply himself to the perfection of machines for the said coachman's use.—Yours truly,

AD SUM.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I, as a driver-mechanic, express my humble opinion on the point raised re owners and drivers in the *Journal*? Drivers should, when making an application for a situation, tell the truth about their abilities and ask for a reasonable wage. This would be better than professing to thoroughly understand seven or eight different makes of cars, and

demanding an exorbitant wage. They would undoubtedly be thought better of by the owner. For it is a fact one bad man spoils six good ones. Of course there are exceptions, and, as "Sub Judice" states, there are cases where one owner has eight or ten drivers in as many months; and perhaps, if the truth was known, the whole lot would not know as much as one good man.—Yours truly,

F. RALPH HARDING.

SIR,—I should like to give my views on the above subject. As a mechanic able to give sound driving references, at the beginning of 1903 I applied for a berth and found nearly forty other applicants, many of them with a "certificate." Among others were a carpenter and a chemist's assistant, calling themselves driver-mechanics, with no other recommendation than their "certificates." Several were tried and found wanting. They were willing to take the berth at about 25s. per week. I obtained the berth without a trial and at double that salary, and gave satisfaction as long as I could put up with it, which was a very short time. The point is that it is impossible for a man, unless brought up to the trade, to become a mechanic in two or three weeks. He could not use a file in the time, let alone be capable of doing repairs to a valuable car. Many do become fair drivers in that time, but such should not expect the salary of a mechanic, who can save his employer much more than the extra salary he is paid. In some cases the owners fail to understand the nature of the repairs, etc., and begrudge time, consequently, when the next occasion arises the mechanic lets the car go to the repair shop. The car is then in dock for a week or more for a job he could have got over in a day or two. The owner has to pay a bill which allows the repairer a big profit and perhaps 5 or 10 per cent. for the mechanic. This is more often the case with the certificated driver, as a good mechanic knows the price of parts, etc., and will not see his master overcharged. Many of the genuine mechanics are fairly educated men, whose parents paid £50 to £100 to apprentice them to the trade, and when they go out do not take kindly to different details of private service, especially at establishments where the car is kept on the move almost night and day, including Sundays, or at others where they are constantly reminded that they are only servants. Again, a chauffeur often has to live with the stable helpers, while the coachman will have a cottage to himself. This being the case he ought to have the equivalent added to his salary. The same class of man can be made a very good servant with fair treatment if the owner places confidence in him, without getting familiar one day and very much the reverse the next. I would advise gentlemen taking up a car for the first time to endeavour to obtain a man who is a genuine mechanic with, say twelve months' private service reference, driving and character. These men are not cheap, as a rule, but reliable and in the long run cheapest. It is better to pay for knowing how than to save to let another man find out.—Yours truly,

MECHANICIAN.

FREEZING POINT OF PETROL.—"Freezer" writes:—"Can you give us the freezing point of petroleum spirit? I have been unable to find this in any technical books." [We have no information on this subject. If any of our readers have any data on the freezing point of petrol we should be pleased to hear from them.]

PETROLEUM SPIRIT.—In addition to the Anglo-American Company, Carless Capel, the Gas Lighting Company, and Whitaker, petrol is being supplied by Messrs. S. Bowley and Son, of the Wellington Works, Battersea, S.W., and the British Refined Motor Spirit Company, of Silverthorne Lane, St. Phillip's, Bristol.

MOTOR-CABS.—Replying to Messrs. Gee and Son, the address of the maker of the Collin motor fore carriage described in a recent issue is M. A. Collin, 41, Boulevard de Courbevoie, Courbevoie, Paris.

IRON CASTINGS.—In reply to Mr. H. R. Allan, the Motor Castings Company, 101, Gray's Inn Road, W.C., and the Watford Engineering Works, Watford, write that they are in a position to supply castings and fittings for steam motor-car engines.

WATER CIRCULATING PUMPS.—Replying to Mr. H. J. Croft, Messrs. Lawrence and Company, Limited, 132, Latimer Road, London, W., are the English agents for the Grouvelle and Arquembourg pump described in a recent issue.

CLUBS AND ASSOCIATIONS.

EASTERN COUNTIES.

THE annual general meeting of the Eastern Counties Automobile Club was held at the Great White Horse Hotel, Ipswich, last week. Mr. F. L. Bland (chairman of the committee) presided, and there were also present—Dr. C. K. Moseley (hon. secretary), Mr. A. Hackblock, Dr. E. L. Rowe, Mr. J. R. Egerton, Mr. C. C. Ching, Mr. Edwin Sayer, and Mr. W. G. Fisk. After the hon. secretary's report had been read, the chairman, who is also treasurer of the club, presented the accounts, which showed that the total receipts were £39 18s., and that the balance in hand was £18 8s. 3d. In moving the adoption of the report, he said that the bad state of the roads last year, in this particular part of the district, was not entirely due to the weather. Owing to a difficulty, he understood, in getting the carting done, the mending of the roads was not taken in hand early enough, and for some months, with a lot of loose stuff lying about, the roads were in about as bad a state as they could possibly be—enough to damp the ardour of any automobilist. Dr. Rowe seconded, and the report was adopted.

The Earl of Stradbroke was re-elected president. The hon. secretary (Dr. Moseley) and the hon. solicitor (Mr. E. P. Ridley) were re-appointed, and, following upon an alteration in the rules, the new Administrative Committee was constituted as follows:—Mr. F. L. Bland (ex-officio, as chairman), Major Carthew, Mr. A. Hackblock, Mr. Godolphin Milbank, Captain Duff (Bury St. Edmunds), Mr. Robert Page (Great Clacton, Essex), Mr. W. P. Burton, Mr. A. C. Churchman, Dr. Rowe, and Mr. E. C. Sayer. On the motion of Mr. Hackblock, seconded by Dr. Moseley, Mr. F. L. Bland was re-elected chairman, with hearty thanks for his admirable services.

SHEFFIELD.

THE first annual general meeting of the Sheffield Club, whose report was summarised last week, has been held at the headquarters. Mr. Herbert Barber took the chair, and moved the adoption of the report and statement of accounts, which was carried unanimously. Mr. J. R. Wade read the report of the proceedings at the meeting of the representatives of Provincial Clubs and the Committee of the A.C.G.B.I., in London, on January 18th, which showed that the London Association was arranging to meet them on the question of affiliation, and on the motion of the chairman it was decided to leave this matter in the hands of the committee. The following officers were elected for the ensuing year:—Vice-presidents, Messrs. Harvey Foster, Herbert Barber, Duncan Gilmour, and James Barber; treasurer, Mr. E. F. Coupe; hon. secretary, Mr. F. B. Cawood; committee, Messrs. A. J. Blyde, W. Coldwell, C. A. Clarke, S. E. Fedden, E. H. Hill, Benj. Hind, W. James, J. W. Needham, J. T. Thompson, and J. R. Wade. A letter was read from the organisers of the Theatrical Professions Carnival in aid of the Lord Mayor's Distress Fund. This was arranged for the 4th inst., and it was decided that the club should do all in its power to assist. The following gentlemen at once promised to take part, or send their cars to take part in the procession, viz.:—Messrs. H. Barber, S. E. Fedden, P. R. Thompson, W. James, J. Ellia, J. T. Thompson, Jas. Hind, A. T. Dewhurst, and J. Walker. On the 27th inst. the club will have a run to Castleton.

RAILWAY COMPANIES AND THE MOTOR PROBLEM.*

By MR. GEORGE MONTAGU, M.P.

My object is to point out what has been done by the railway companies, and what is contemplated by some of them in the near future, in relation to the motor question, and also to form some kind of picture of how far this development is likely to lead. I shall have to confine myself in the main to the passenger aspect of this question. So far little has been done in the direction of the carriage of goods by motor by the railway companies, either in the substitution of motors for horses in the distribution of light goods in large towns or by the distribution of heavy goods from big railway centres by motors instead of local goods trains, which would deliver goods at the door, thus superseding the expensive methods of distribution from wagons on branch lines, which involves so much expense in shunting operations. Few people realise how enormous is the loss in this respect which takes place on our great railways. It was stated once before the House of Commons by the officials of the Midland Railway that every year 14,000,000 miles of shunting took place. I believe I am right in saying that this figure included the loss sustained from the distribution of goods, as well as shunting for the purpose of avoiding fast trains.

Although the introduction of motor-coaches at present is more directed towards economy to supersede trains on local branch lines, it is likely that they will be utilised just as much in the near future to relieve congested traffic on the main lines. One of the principal causes of congestion of main line traffic is the running of trains at different speeds on the same line of metals, and this is often not so much due to purely suburban stopping trains, which have separate lines for their accommodation, but to the intermediate stopping trains, such as those that stop at intervals of ten or fifteen miles, and also to those other stopping trains which are fitted in at different sections of the railway in order to feed and to distribute passengers from the express and intermediate trains. It is, I believe, by the motor-coach that enormous saving will be effected in this way. For two reasons—first, because one coach capable of holding some sixty or seventy passengers, with one or two trailers added if necessary, would be amply sufficient to hold the number of passengers wishing to be carried; and secondly, because by the use of a fairly powerful engine so great an acceleration can be obtained as to prevent in any way the blocking of fast trains.

The first motor-coach to appear was designed by Mr. Drummond, of the London and South-Western, last year, for the working of a short branch line between Fratton and Southsea. Great economy has been effected since its introduction. The car is owned jointly by the London and South-Western and the London, Brighton, and South Coast Railways. He tells me that the cost of running is 2.3d. per mile, as against probably something like 8d. to 1s., which would be the case of the ordinary engine and coaches, while the coal consumption is 6.5 lb. per mile, as against probably 20 lb. or more under the ordinary system. The first coach was originally designed with a vertical boiler, which was adopted on account of the cheapness of this kind of boiler as against the horizontal one, and on account of the short distance of the journey; but as under their new scheme it is proposed to run motor-coaches on the light railway from

* From a paper read at the Automobile Club on Thursday, the 28th ult.

Basingstoke to Alton, and no doubt on other lines later on, where they will be required to run longer distances, Mr. Drummond has now adopted a horizontal boiler which will become the standard pattern. The new cars will be able to travel for a distance of sixty miles without a fresh supply of water, and to carry sufficient coal for the day's work. They will be able to attain a speed of thirty miles an hour. In this case, as with the motor-coaches which have been tried on the Great Western, the engine is placed on the leading bogie, horizontal cylinders being used as in a locomotive, the bogie wheels being coupled so as to provide greater adhesion, the second trailing axles being driven. In a new scheme, as this is, figures must be taken with some reservation, and they must obviously vary very much according to the district; but, at any rate, the figures I have already given show extraordinary improvement as against the train.

On the Great Western motor-coaches have been designed for special work, since in the Stroud Valley they have to contend with gradients of 1 in 75 to 1 in 100, and where, owing to the stoppages which are made at level crossings, for which purpose power had to be obtained from the Board of Trade, who, it is interesting to note, raised no opposition, have to have as high an acceleration as?

In addition to the stops made at the regular stations in the Stroud Valley, of Chalford, Brimscombe, Stroud, and Stonehouse, four others are made at level crossings. This innovation has proved most beneficial to the large population of cloth-workers in that valley. The fares from Chalford to Stonehouse are 6d. for the seven miles. The car runs every hour, and takes about forty-six minutes to do the double journey, the second car being held in reserve, and used when necessary.

The Taff Vale Railway has also been experimenting in the same direction, and has been running a coach between Cardiff, Penarth, and Cadoxton, a distance of 9½ miles.

Since the decision of the North-Eastern Railway to employ the combination of petrol and electricity some experiments recently were made by Messrs. Stirling, of Granton Harbour, Edinburgh, who seem to have solved this difficulty. Mr. Drake, the manager of the works, has invented a special type of gearing, which enables the car to be started, and ten or twelve miles an hour to be obtained, after which the top speed can at once be introduced, giving an acceleration up to thirty or more miles an hour. The arrangement can be applied to tramway cars, and so well it is governed that one lever for starting all the speeds, stopping, and braking is alone required.

The London and South-Western Railway are inquiring into the question of the motor-car as a feeder to the railway. The Midland, I understand, are contemplating experiments with motors, but what precise form they are taking I am unable to say. The Great Eastern Railway are seeking powers this session for the running of motor-cars, but I have been unable to obtain information in this connection, as divulsion might create prejudice before their Bill is obtained.

On the Caledonian Railway they have for some two years been running one or two Milnes-Daimler wagons and light lorries, but these have, I am sorry to say, not been altogether successful. Recently, however, I hear they have been impressed by the Stirling petrol motor coach, which I mentioned before, and they very likely will put some of them into service. It is noteworthy that the Caledonian were the first railway to adopt motors for parcels and light goods delivery. It is probable that, in addition to their contemplated Stirling motor-coach, they will also make a trial of the same company's cars, which are much the same as the North-Eastern motors, which have been running since last summer in Holderness, and which Lord Leitrim has been trying in the north of Ireland. These cars are of 24-b.h.p. The North-Eastern cars—which have special clerestory roofs, similar to those of railway carriages, which give a feeling of airiness inside—have been running between Beverley and Driffield Stations. The service was inaugurated last summer, and ran as far as Beeford, a distance of fourteen miles, but has now been extended to Driffield.

Lord Leitrim has done great service by attempting to assist the development of the beautiful country in Donegal, in the north of Ireland, by regularly running motors in connection with the train services. He has called it "The Coast Line Motor Way." The cars have been running between Strabane railway station and Rosapenna—a distance of thirty-eight miles. Lord Leitrim has had no trouble at all with them, and they ran continuously from July to the end of October in connection with the trains, with the exception of one day, when one omnibus was running out of three. It is interesting to note that he was the first to carry his Majesty's mails, though the North-Eastern Railway were before him in advertisements. The Great Northern of Ireland have given him excellent assistance, and have done all they can to further the interest which he has shown.

I now turn to what will prove to be a great advancement, and that is the work which the Great Western are doing to open up Cornwall and Devonshire by means of motors. Mr. Inglis, now the general manager of the Great Western Railway, having been previously their engineer, is a Cornishman, and interested in developing his county. The Great Western Railway have, for some time now, been running cars between Helston and the Lizard, and from Marazion to Newlyn, a suburb of Penzance. Two cars are used for the latter service and one for Helston. It is proposed to run services as well from Penzance to St. Just, Mullion (the Marconi station) to Helston, Saltash to Carrington, and Modbury to Yealmpton. The two latter services are in the neighbourhood of Plymouth. Between Modbury and Yealmpton the Great Western will meet with competition with a private company which is just commencing to run cars, and it will be interesting to see what will be the result. Of the thirty cars that have

been ordered, eighteen are of 20 horse-power, and twelve of 16 horse-power. There is one other service in contemplation, and that is in Wiltshire, between Calne and Marlborough, where there is considerable traffic in farm produce and light goods.

In conclusion, I think that automobilists may congratulate themselves and the railway companies, that within the last year a very great stride has been made in the application of the motor to the uses of the railways. Every day it is being shown, even in the experimental stage, that economy results from the adoption of the motor. It will, I believe, go far to cure, not only great social evils, such as the overcrowding in the great towns, but also those which are of no less importance, the difficulties of railway transit, which are so intimately bound up in them.

SETTING ASIDE AN AWARD.

IN the King's Bench Division, before Mr. Justice Wills and Mr. Justice Kennedy, sitting as a Divisional Court, the case of the Lanchester Engine Company v. Bourke has been heard.

Mr. Loehnis, for the appellants, said this was a motion on behalf of Mr. W. L. Bourke, who lived in Manchester, to set aside an award made by Professor Hele-Shaw, of University College, Liverpool, directing Mr. Bourke to pay £114 odd for the repair of a motor-car to the Lanchester Engine Company, of Birmingham. The ground for the motion was that Mr. Hele-Shaw had taken evidence on the matter unknown to Mr. Bourke. In September, 1902, Mr. Bourke purchased from the Lanchester Company a motor-car which cost between £600 and £700. The next month it was returned for repair, Mr. Bourke contending that at the time of the sale it was not in the condition it ought to have been. The Lanchester Company said it was, and they submitted an estimate for repairs to put it in a proper condition, alleging that the defects were due to the bad treatment of the purchaser, the estimate being £64, of which £20 was for new tyres. It appeared that Professor Hele-Shaw got estimates from the company by letter of the cost of the repairs. These came to £204, and the arbitrator directed Mr. Bourke to pay £114 of that sum. Mr. Bourke was never aware of any other sum than that of £64, and he paid the £114 without prejudice in order to get possession of his car. He now sought to get the award set aside.

Mr. Justice Wills said he much regretted that some arrangement had not been made between the parties, especially as, in his opinion, Mr. Bourke had got uncommonly good value for his money. It was admitted that the award could not stand in view of the course taken by the arbitrator unless Mr. Bourke had disintitiled himself from making the present motion. He (the Judge) did not think he had so disintitiled himself, and therefore the award must be set aside with costs. Judgment accordingly.

ALLEGED FURIOUS DRIVING.

THE case of Mr. H. Liddell, reported in last week's *Journal*, has been again before the Kingston magistrates. Superintendent Marks, of the Surrey county police, asserted that he timed him over a measured quarter of a mile on the Portsmouth road at Cobham on Sunday, January 17th, and found that his car covered the distance in 36.25 sec., or at the rate of twenty-four miles an hour, four miles in excess of the limit. When he saw Mr. Liddell's car pass a post at the beginning of a measured distance he started a stop-watch, which he stopped when the car passed the "winning post." The defendant told the Bench that he was not going at more than fourteen miles an hour. Mr. H. J. Swindley said that the watch used by Superintendent Marks was quite worthless for purposes of timing. Holding the watch up in his hand, he added:—"I have just done something with it that will show you it is a worthless watch. I have tested it in the same way as the Automobile Club would. You start the watch, and if you hold it in your hand and put a slight pressure on it, it will stop, and if you take the pressure off it will go again. If a man holding such a watch is a little bit eager, and presses the watch, he could make a motorist do five miles in five seconds. I know this watch well. I have known it as a cyclist for the past twenty



Force of Habit.

years." The Chairman: That evidence is of great assistance to us. The summons is dismissed.

At the Loughborough Petty Sessions, before Mr. S. Wells, Col. the Hon. Montagu Curzon, Ald. W. Tidd, Messrs. C. B. Shakspeare, J. Harriman, and S. Wells, Richard Sutton Clifford, solicitor, Loughborough, was summoned for dangerously driving a motor-car at Loughborough, on the 17th ult. Mr. George Rowlatt prosecuted, and defendant was represented by his father, Mr. Sutton Clifford, who, at the outset, objected to the summons on the ground that it alleged four offences, whereas only one offence could be shown and charged on one information. The summons alleged driving at a speed, and driving in a manner dangerous to the public, having regard to the amount of traffic which already at the time was on the highway, and with driving at a speed and in a manner dangerous to the public, having regard to the amount of traffic which might be reasonably expected to be on the highway. He submitted that these were four offences, and that Mr. Rowlatt must elect which one he would proceed upon. He further pointed out the hardship on defendant in these charges, owing to the time and place of the alleged offence not being specifically stated. The summons only stated that it was on the 17th and on the highway in Loughborough. There were 24 hours in the day, and about twenty-six miles of streets in Loughborough. This car was out three times that day, and it was rather hard that defendant should not know till he got into court what he had to meet. Mr. Rowlatt said there was only one offence, but he was perfectly willing to strike out some of the wording of the summons. The Court were of opinion that there was only one charge, and that the summons complied with the Act of Parliament. After hearing the evidence, the Chairman said the Bench had unanimously decided to convict, but, taking into consideration the fact that this was the first case under the new Act in the county, they would only inflict a fine of 20s. and costs. Mr. Clifford intimated that he should probably appeal against the conviction.

At the Southport Police Court, last week, Mr. T. T. L. Scarisbrick, the late mayor of the borough, was charged with driving a motor-car at a dangerous speed. The police alleged that on the 8th ult. Mr. Scarisbrick drove his car at a speed dangerous to the public, there being considerable traffic about at the time. A police-constable estimated the speed at over 20 miles an hour, and added that the car had no number on it. A lady stated that it was going at the rate of an ordinary train, and nearly as fast as a racing car at the motor trials. One cabman stated that it was going at about 40 miles an hour, while another stated that it was going at double the rate of the express train by which he had travelled to Liverpool. For the defence it was contended that the car was not travelling at excessive speed. Mr. Scarisbrick gave evidence, and stated that the car had a number both at the front and back, but the latter might have been covered with mud. He was using a gear which would not enable him to attain a greater speed than 12 miles an hour. A fine of £5 and costs was imposed.

JOHN FOLLETT (a motor-car driver from Tonbridge) was summoned at the Tunbridge Wells Court for driving on the public highway at London Road at a speed and in a manner dangerous to the public, on January 19th. Frederick Grainger deposed to the excessive speed of the motor down Major York's Road, and incline across Tunbridge Wells Common towards the town, and said the car nearly ran into him. Mr. Elers, who retired from the Bench during the hearing of the case, corroborated as to the dangerous speed of the car along the hilly road. Defendant denied that he was exceeding the legal limit, but the Justices decided to inflict a fine of 10s. and 12s. 6d. costs.

THE SALE OF A CAR.

BEFORE Mr. Justice Ridley and a common jury, in the High Court, an action has been brought by Mrs. Fitzgerald, of Fairfax Road, Bedford Park, Chiswick, against the Motor-Car Company (Limited) and Mr. Robert Moffat Ford, managing director of the company, to recover damages for an alleged breach of warranty on the sale of a motor-car. Defendant denied the warranty. The plaintiff's case was that in November, 1902, her son, Mr. J. H. Fitzgerald, acting as her agent, entered into a contract to purchase of the defendants a Decauville motor-car for £150, which was warranted by the defendant, Mr. Ford, to be new. The car, plaintiff said, was not new, and had often to be repaired, as it was not made of good material. Mr. Fitzgerald, son of the plaintiff, gave evidence of the defective condition of the motor-car. In cross-examination he admitted that he had been told by experts that the car had never been driven before. Mr. Ford gave evidence to the effect that the motor-car was perfectly new when supplied to the plaintiff, and that the defects subsequently discovered in the car were due to its being driven by an inexperienced person, and not to bad materials or bad workmanship. In cross-examination, witness said he called the car a new one in 1902, though it was built in 1900; it had not been used before it was sold to the plaintiff. The jury found a verdict for the defendants. Mr. Justice Ridley entered judgment accordingly, with costs.

MOTOR-BUS IN A COLLISION.

THE Central Bottling Company, of Birmingham, brought an action against the Birmingham Express Motor Company, Limited, to recover damages for an injury to a horse which they alleged to have been caused by the negligence of a motor-bus driver. After hearing the evidence his Honour remarked that this was the first case he had had to deal with in which a motor-bus or motor-car was alleged to have caused a collision. The jury had to decide a mixed question of law and fact.

They should bear in mind the fundamental principle that the King's highway was free to all to use, to pass along, or to stay upon reasonably. Whatever the private opinion of motors might be, they should remember that they were recognised by law as entitled to go along the road and to make a certain amount of noise. The jury awarded the plaintiff £34 13s. 6d. damages.

AUTOMOBILE RACING IN FLORIDA.

PRIOR to the opening of the automobile race meeting on the Ormond-Daytona Beach, Florida, it is announced by telegraph that on the 27th ult. W. K. Vanderbilt, jun., on a 90-h.p. Mercedes, succeeded in covering a mile in 39 seconds, or equal to a speed of over ninety-two miles per hour. The new record is reported to have been accepted by the Automobile Club of America. The meeting proper commenced on the 28th ult., when the final in the mile handicap for the championship of the American Automobile Association was won by Barney Oldfield (Winton), his time being 46.5 seconds. On the 29th ult. Vanderbilt won the final in a five-mile handicap in 3 minutes 38.1.5 seconds, and also the mile race for amateur drivers in 48 seconds. The final day of the races, on the 30th ult., saw a further addition to Vanderbilt's list of wins, he carrying off the first place in the ten mile invitation race in 6 minutes 50 seconds, and a fifty-mile race in 40 minutes 49.4.5 seconds, Bowden, on a 60-h.p. Mercedes, being second in 42 minutes 44.1.5 seconds, and La Roche, on a Darracq, third, in 45 minutes 7.4.5 seconds. Oldfield did not start in this event, while Blair (Panhard), and Brokaw (Renault) gave up at the fortieth mile. On the 1st inst. a series of trials against the watch were held. Ross on a Stanley steam car covered a kilometre in 34.4.5 seconds, and the mile in 55 seconds. Stevens' times on a Mercedes were respectively 27 seconds and 43.1.5 seconds.

THE LIVERPOOL CYCLE AND MOTOR SHOW.

THE eighth Liverpool Cycle and Motor Show was opened in St. George's Hall on Tuesday last, and will close to-day (Saturday). One of the largest stands is that of the Road Carrying Company, Limited, on which are shown examples of the latest Georges Richard, Daimler, Bollee, Oldsmobile, Argyl, Minerva, White, Lanchester, Peugeot, and Siddeley cars. The Alldays and Unions Company are present with their Traveller voiturette and motor-cycles. Messrs. J. A. Lawton and Co. display Panhard, Gladiators and Napiers. Mr. Francis Weighill shows the Ader cars, while Darracq cars are shown by Mr. Wm. Lea. The Belsize Motor-Car Company, Limited, have on view specimens of their new 15.20-h.p. and 7-h.p. cars; the 5-h.p. Humberette is to be seen on the stand of Messrs. Slade and Company; the Protector Lamp and Lighting Company, Limited, introduce for the first time their "Bijou" car, which is fitted with a 5-h.p. motor and two speeds; while De Dion cars are displayed by Messrs. Kelly, Bournemouth and Co. Automobiles are also shown by Mr. Chas. Lucas, Messrs. Hutchings, Limited, Messrs. Robinson and Price, Limited, and the Provincial Electric Construction Company, Limited; while practically all the leading makes of motor-cycles are to be found in the exhibition. The heavy steam-wagon section is represented by the 5½ ton vehicle of the Hercules Motor-Wagon Company. Messrs. Alfred Dunhill, Limited, and Messrs. Lewis have a large exhibit of motor clothing, as have also Messrs. J. A. Turner and Co. and Messrs. Nicoll and Co. Altogether the organisers of the show are to be congratulated on the result of their labours.

UNREGISTERED CAR.

AT Forfar the first prosecution under the new Motor Car Act has been brought up at the Forfar Sheriff Court, when Dr. M'Alister, Forfar, was convicted for a contravention of the Act in so far that on January 7th he drove a car on the Forfar and Brechin road without having a registered number. Sheriff Lee said this was the first case, and as it was always difficult to get the public to understand, he would be lenient; but in order that the case might serve as a warning he imposed a fine of 5s.

THE RISKS OF TRIAL RUNS.

ON Nov. 27, 1902, Mr. Edmund Howe went to the cycle show at the Crystal Palace with a friend who was thinking of purchasing a car. They spoke to the representative of the Alldays and Unions Engineering Company (Limited) about trying one. The machine was running in the grounds, and about six o'clock they started from the North Tower Gardens. They ran down the slope at a considerable pace, and suddenly shooting off the road on to the grass, ran into an iron seat. Mr. Howe's leg was badly broken, and he was carried to the Norwood Cottage Hospital on an ambulance. It was nineteen weeks before the patient could return to business, the leg having become permanently shortened by an inch. He considered that the accident was owing to the negligence of the driver of the car, and he sued the firm to recover damages for the injuries he had sustained. The defendants denied that he was on their car at their invitation, or that their driver was negligent. The case has just come before the High Court, when without leaving the box the jury found for the plaintiff, damages £200.

ON THE WRONG SIDE.

AT Holbeach Petty Sessions, before Mr. R. Merry, J.P., and other magistrates, Mr. George Schwind, of Dimbleby, Falkingham, Lincolnshire, was summoned for driving a motor-car on the wrong side of the road whilst passing three horses and a waggon, and also with failing to give audible notice of his approach, at Sutton Bridge, on the 10th December. Mr. Nelson, of Sleaford, defended, and pleaded not guilty. The Bench convicted, and imposed fines amounting to £3 and costs.

THE Motor-Car Journal.

VOL. V.]

LONDON, SATURDAY, FEBRUARY 13, 1904.

[No. 258.

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



LINCOLNSHIRE boasts several medical men as motorists, and one of them, Dr. Gilpin, of Bourne, has been discoursing to the members of his club on the upkeep of a motor-car—a subject which affords endless opportunity for discussion from so many points of view. Dr. Gilpin does not anticipate any early reduction in the cost of running automobiles; but, with regard to the cost of cars, he rightly emphasises the better mechanism that is now supplied with such vehicles. On the vexed question of solid v. pneumatic tyres, his experience is decidedly in favour of the latter, despite their liability to puncture. During the discussion, Mr. C. W. Pennell, J.P., said he always kept his tyres running until they were worn through, and then he had them re-rubbered, a plan which he considered made them as strong and serviceable as when in their original condition.

At the Agricultural Hall.

In view of the novelties that will be found at the Automobile Club's Exhibition at the Agricultural Hall, London, in a few weeks' time, many prospective motorists are wisely postponing decision as to purchases till they have had an opportunity of fully realising the prospects of the trade for the year. The unsettled weather lately endured has also delayed many customers in their choice of cars, so that everything points to the fact that good business may reasonably be expected for next month's show, which will be the ninth of the series held at Islington. Agents in the provinces, too, will avail themselves of that opportunity to visit London and thus see for themselves the great advance that has been made in the trade during the past twelve months.

The A.C.G.B.I. and the Exhibition Question.

WHILE referring to the Exhibition, the following extract from the "Automobile Club Journal" of last week will be of interest as setting forth the history of the official sanction given by the Automobile Club to the Agricultural Hall Exhibition:—
"On October 17th the Committee was approached by the Society of Motor Manufacturers and Traders asking on what terms the Club would grant its patronage to their second Exhibition, to be held at the Crystal Palace from February 12th to the 24th inclusive. The Committee took the matter into consideration, and after two interviews between the Club Secretary and the Secretary of the Society, which were reported to the Club Committee, certain terms were put forward to the Society and at the same time to Mr. Cordingley, the Committee wishing to grant its patronage to both Exhibitions on precisely equal terms. The terms as put forward were accepted *in toto* by Mr. Cordingley, and were rejected *in toto* by the Society, without leaving any loophole for any further negotiations in the matter. In order, however, that the Society should receive every opportunity

of reconsidering its position, it having first approached the Club in the matter of the Club granting its patronage, it was further discussed on several occasions in Committee, and eventually the Society, recognising that by the delay the Club desired to give them another opportunity of resuming negotiations, addressed a letter, dated January 15th, suggesting that a Sub-committee of the Society and a Sub-committee of the Club should meet to discuss the matter, not for this year, but for the year 1905. The above-mentioned letter was discussed in Committee on Monday, January 18th, and, having come to the conclusion that the Society was not serious in its first request nor in its subsequent action, the Committee decided to grant its patronage to Mr. Cordingley, after having kept him waiting three months."

A Grotesque Misrepresentation.

"In the light of these facts," continues our contemporary, "the statement in a newspaper—to which Lord Russell draws attention in a letter in the current issue—that the Club have given their patronage to the Islington Show for the sake of £500 is seen to be a grotesque misrepresentation. The Club throughout these negotiations has been actuated by the sole idea of benefiting the British automobile industry by securing to these annual exhibitions the support which would have further increased their usefulness. That it should be now asserted by the parties who are responsible for the failure of these intentions that the Club has sold its patronage, and that that statement should be credited in certain quarters, are matters that all those who are anxious for the future of the automobile movement will view with mixed feelings of indignation and regret."

Fancy Schemes for Traffic.

NOVELISTS as well as motorists should attend the meetings of the London Traffic Commission, for much fiction and many fancies are being retailed in that heavy atmosphere. One of the latest plans suggested are roadways across London with an upper storey for fast motor-cars, and a lower floor on which slow-moving vehicles and obstacles—the terms are often synonymous—could lumber along at their own leisured slowness. Airships, tunnels, moving platforms, and other devices have also been suggested, and doubtless before they report to the House the Commissioners will hear of a proposal to project people through pneumatic tubes to their destination, thus saving them the trouble of walking, and obviating the need of automobiles.

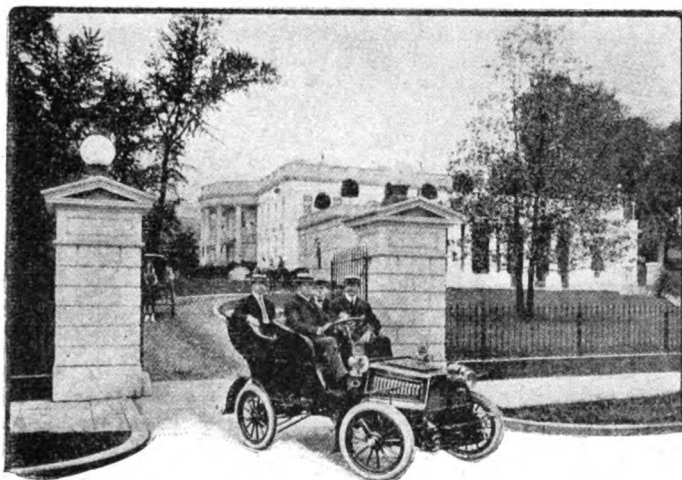
Cars from Coils.

THE origin and circulation of newspaper rumours would be an interesting study in connection with automobilism, but for the fact that the recording of actualities provides sufficient for the energies of ordinary mortals. Last week the story went the rounds of the press that the motor-car belonging to a doctor in Staffordshire had been stolen, and that its recovery was somewhat doubtful—an improbable sort of story that could only serve as a warning to other motorists to take care how they left their vehicles when visiting. The sensational report turns out to have been wholly wrong. But

probably the local reporter who originated the story would claim that it was founded on fact, for Dr. Spanton informs us that the coil was stolen, and on that slender basis a whole car was constructed—and lost. This week another similarly exaggerated version of a motor-car incident has been in the press. The master of the Northwich Workhouse informed the guardians that a kindly disposed gentleman had presented a motor-car to that establishment. Immediately imaginative journalists pictured the delight of the inmates at going beyond the boundary on a modern automobile. But alas! the motor-car was a toy, and has not yet been beyond the children's ward, where it is proving a delightful addition to the nursery equipment.

The Motor Union.

WE would call the attention of members of the Motor Union to the fact that the annual meeting of the Organisation will be held at the Agricultural Hall, London, on Tuesday, March 22nd. So many motorists from the provinces will be coming to town during the week that it will be to the general convenience of the majority to have the meeting during the third week in March, while the fact that facilities will be provided at the Exhibition will be appreciated by both town and country members.



A Motoring Party at the White House, Washington.

[Motor Age.]

Indian Interests.

INDIA will, as the roads improve and local industries develop, become an important factor in the automobile market. This fact is being rightly appreciated by leading houses in our great dependency, and at least two of these are anxious to hear from British makers as to the possibilities of business. Mr. Rolfe, of 3, Council House Street, Calcutta, and Messrs. Vatcha Brothers, of Girgaum Road, Bombay, are interested in the matter, and we give their names in the interests of the commercial relations of this country with the distant parts of the Empire. At a recent meeting of local motorists at Calcutta an "Automobile Association of Bengal" was formed, which will watch the interests of motorists in that part of the world. The fact that the movement has developed sufficiently far to warrant the formation of such an organisation is significant of the advance that has been made.

Advance in the Country.

THE education of the county of Huntingdon to its present sympathetic attitude to motorists has been a specimen of the growth of knowledge which should ultimately produce a very friendly feeling throughout the country. In 1902 there were sixty-eight convictions against motorists, and so keen were the police that last April they added the telephone to their equipment and devised motor traps on thoroughly scientific lines.

Now the County Council, recognising that the position of affairs has been fully met in the first section of the Motor Car Act, has decided not to specify any roads or specified areas as dangerous, and through which motor-cars must be driven at a reduced speed.

Trial Trips.

THE return of something like settled weather will bring with it the "Trial Tripper," i.e., the man who makes a round of the various dealers and agents professing to be on the look-out for a motor-car, but really anxious to enjoy a few good afternoon rides. The mode of dealing with this particular class of person has not yet been settled by the trade, for, unfortunately, he is too often not discovered until after he has had his ride. If the trade was thoroughly combined it might be possible, although we do not consider it likely, to eliminate the free tripper from the worries of business. When, however, every agent is anxious to felicitate any possible customer, he must necessarily conform to the wishes of such nuisances, whether the result be a purchase or not. We heard the other day of a firm which, having satisfied itself that the client was really having a pleasure trip without any prospect of business, ultimately deposited him some five or six miles from a railway station, and then let him enjoy the pleasure of a run on "Shanks' pony" by way of a change. A few such experiences as that would probably cure some individuals from the habit they seem to have contracted.

Brilliant Illumination.

WHILE the absence of lights is a danger, the presence of lights of too startling brilliancy is regarded as something of a terror by many public bodies. The County Roads and Bridges Committee for Warwickshire recommend to the County Council that the Local Government Board be urged to amend their regulations as to the lighting of motor-cars, that the lighting powers of lamps borne on a motor-car be more nearly similar to those on a carriage, the luminant powers of a motor-lamp being at present greatly in excess of the latter, and of such dazzling intensity that it defeats the object for which it was intended, and is calculated to cause serious accidents to those who use horse vehicles at night.

Professor Boys on Motor-Cycles.

PROFESSOR VERNON BOYS, who presided over the meeting of the Auto Cycle Club, at which Mr. Mervyn O'Gorman's paper, published in the *Journal* of the 29th ult., was read, made some pointed criticisms. From experiments he had made, he was afraid that the turbine explosion engine was hopeless for the motor-cycle. He did not mind a little noise, as it saved the need of sounding the horn at times. While on the question of power he would seriously urge the desirability of motor-cyclists not having heavy engines; they were limited by law to twenty miles per hour, and he would urge upon all motorists to respect this speed limit for the next three years. The only advantage of a high-powered engine would be that it would enable the rider to go up hill at full speed. He thought that a machine which would appeal to a man who was desirous of becoming a motor-cyclist would be one that was light, and of a moderate power, which would take him up any hill at a speed of, say, seven miles an hour; and he was sure that makers did not know what harm they were doing by insisting upon high-powered engines.

Side Slip Competition.

A CONSIDERABLE amount of interest has been shown in connection with the forthcoming Side Slip Trials to be held by the A.C.G.B.I., and a private track has been lent for the purpose of the competition. Competitors should, however, be reminded that the last day of entry is February 29th, and that drawings of the devices to be submitted must be sent

in by that date. The first prize will be £100, or possibly up to £200, if the device is considered worthy, and other prizes will be considered according to the merits of the devices in the opinion of the judges. The actual trials will take place about March 25th.

"Motor-car Fatality."

HERE is a paragraph from the "Evening Standard" under the heading reproduced herewith:—"The recently introduced system of motor-cars on the Great Western Railway between Chalford, Stroud, and Stonehouse was the scene of a shocking accident this morning. While a motor-car was waiting in the newly-erected Bromscombe Station, a carpenter named Tyson, of Gloucester, who was standing on the up line, failed to notice the approach of the Gloucester express. He was instantly killed, his body being shockingly mutilated." Really this is too bad. The motor-car may have been somewhat uncertain in its action in the early days, but to describe the incident thus recorded as a "Motor-car Fatality" is about as striking an instance of editorial carelessness or journalistic prejudice as we have ever known. The "Evening Standard" owes an apology to the automobile industry as well as to the newspaper world for such stupidity.

Steam Vehicles.

LAST week at the Society of Arts a discussion took place on steam cars for public service, this being inaugurated by Mr. T. Clarkson, of Chelmsford, whose practical endeavours on behalf of the steam car have already been mentioned in these columns. Lieut.-Col. Holden presided, and in the course of the discussion Col. Crompton gave praise to the reader of the paper, Mr. House, and others who have maintained their advocacy of the steam car despite the almost universal popularity of the petrol vehicle. He pointed out that petrol in public service involved considerably more danger than when used by private persons only, and declared that Mr. Clarkson in running 1,019 miles during the reliability trial on paraffin without a hitch had really performed wonders. Other speakers, including Sir Evan James, followed, and Mr. Nash, of Torquay, described how a Clarkson steam car had recently weathered a violent storm at that place, where the waves dashed high over the top of it. Evidently the steam car is likely to be much before the public during the coming season.

Electrical Carriages.

THAT the petrol car is not likely to have all its own way is also evident from the speech of Mr. Schenk at the luncheon given on Monday by the Electromobile Company in connection with the development of their business in Mayfair, a reference to which is made on another page of the present issue. The fact is that automobilism is making such rapid headway at the present time, that we are likely to hear far more than has recently been the case, both of electric and steam driven vehicles, as well as the now familiar petrol car. It is gratifying to have Mr. Schenk's assurance that the chassis of the electrical vehicle this company are now placing upon the market is of British make, the production of a leading firm of Yorkshire engineers, while the best carriage-builders of London are giving their attention to the carriage work, so that the combination of engineering and coach-building experts may result in this English branch of automobile industry being elevated to a position worthy to rank with the productions of French makers.

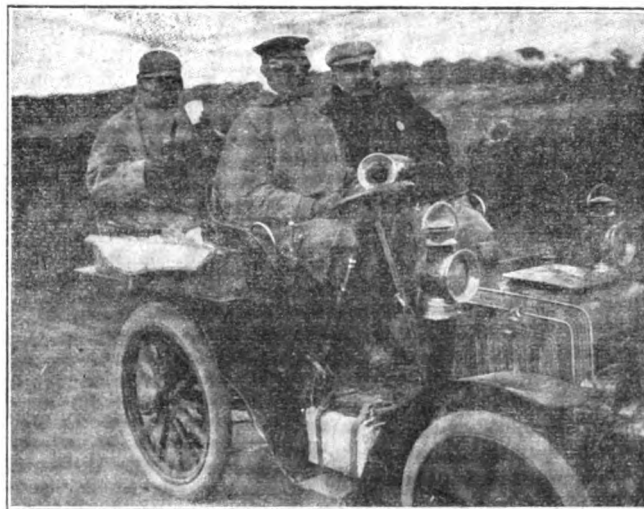
Horse Riding.

ONE jobmaster, in view of the changing condition of things, has made a suggestion to his fellow horse-owners that they should not lightly pass out of memory. The value of horse-riding as a healthy exercise has not been generally regarded beyond hunting circles in this country; although in Continental capitals it is more generally recognised—as the sales of English

riding horses to Paris, Berlin, and Vienna, amply testify. Why not encourage the hire of horses for spins out into the country or round the parks? Part of the pleasure of the motor-car is associated with the sensation of rushing through the air at a rapid rate. Add to this the healthy exercise associated with horse-riding, and it will be seen that the horse need not yet be relegated to zoological gardens or preserved in natural history museums.

The Woes of the Jobmaster.

STABLES are being transmogrified into garages and haylofts into repair shops with sufficient frequency to indicate the trend of the times. In the Bloomsbury County Court a farrier has just been lamenting the growing favour of the automobile. "I have been ruined by motor-cars," he plaintively observed, "and eighteen of my best customers have given up horses." So far as the West End of London is concerned, the change will be welcomed by sanitary authorities. No longer will the courtyards behind the mansions of the nobility reek with the perfume of the stable, while the cleansing of the streets will become easier as the number of motor-carriages in use becomes greater. We were in a garage one day this week where three score cars were accommodated—all owned by Society people who appreciate the greater convenience of the ever-ready automobile.



Lunch en Route

Traps.

ALTHOUGH the cases of alleged furious driving lately reported under the Motor Car Act have not been numerous, the minor offences chronicled against motorists have already resulted in a fair increase to the police court exchequers. A suggestion made by Mr. Denman, the London magistrate, should, however, be considered by the police, and we should also like to see the point raised before the local authorities in various parts of the country. He thinks it would be more satisfactory if the police tests with regard to the speed of automobiles were made over a distance longer than a furlong, in order to minimise the risk of error, a suggestion that has the merit of common sense. It should be acted upon without delay.

Dealers' Marks.

WHILE continuing the Directory of Numbers we began last week a list of Dealers' Marks, which we hope to continue until it comprises a trade directory of considerable value. In our last issue a beginning was made with Scotch and London firms; in our present issue we continue the list of dealers' marks so far as the Metropolis is concerned, and also some in use in the North. In our next number the list will be extended to the Midlands and Western Counties, and firms located in those districts are asked to send us their marks without delay.

Irish Progress.

SINCE the Gordon Bennett race of last year, little has been heard with regard to the automobile movement in Ireland, although figures lately published in the *Journal* showed that there were between 600 and 700 automobiles in the Emerald Isle. At one time it was thought somewhat likely that an Irish automobile week would be organised for 1904, but it is becoming apparent that the suggestion will most probably be held over for at least another year. Meanwhile the number of motorists grows almost daily, and the country gentry are recognising that the use of the motor-car will extend their social circle far beyond the limits of the present slow railway travelling with which they have to be satisfied. The Irish Automobile Club, too, is becoming an active body, its latest venture being the proposed provision of a reading-room for members, and the establishment of a motor-car garage in a central position of the city of Dublin.

The Popularity of the 'Bus.

THE faith of the chairmen of the Omnibus Companies in the popularity of the 'bus is really touching. They affect not to feel the competition of tubes, cabs, motors, or anything else that runs on wheels. And yet they always confess to having a watchful eye on developments in the way of motor traction. At the meeting of the Associated Omnibus Company, Limited, held this week in London, Mr. S. Crews, the chairman, said with regard to motor-omnibuses no progress was made last year owing to the fact that the special omnibus built for London street service failed to pass the licensing authorities, on account of the width exceeding the limit. He believed a concession would shortly be made, increasing the width limit, when doubtless some motor-omnibuses would be seen on the London streets. His fellow directors, as well as himself, were of the opinion, however, that omnibuses, whether propelled by motors or drawn by horses, are likely to remain for many years to come the popular carriage, especially in the crowded and congested thoroughfares of this great city.

Agriculture and Automobiles.

IN discussions on agricultural depression the labour difficulty is often overlooked. Labourers are too apt to compare their low wages in the country with the higher amounts offered in the towns—never heeding the greater cost of living, which invariably destroys the margin. This labour problem is not likely to be solved until wages in the country are brought nearer those of the towns—a contingency not to be thought about just yet. It is just here where the motor will be useful to the farmer in enabling him to cope with his work with less labour than has hitherto been the case. And in view of the steady flow of men from fields to towns the value of the motor as a substitute needs little urging. Agricultural societies are interesting themselves in the matter, and at the next Highland Show trials of agricultural motors will be a feature of that representative Scottish display.

The Improvement of Roads.

IN connection with the municipal elections in Belfast, the Irish Roads Improvement Association took a very intelligent line in bringing before the candidates for vacant seats four important points which would otherwise have been overlooked. One was concerned with the appointment of properly trained men to the responsible staff in the construction and upkeep of the streets and roads of the city, whilst another dealt with the stricter enforcement of the bye-laws relating to the lighting of vehicles and traffic regulations generally. We would suggest that the work done by the Irish Roads Improvement Association in this matter might well be imitated in this country by the various local automobile associations which are springing up. Motorists feel most acutely the bad condition of the roads in many of our provincial towns, and hence they may

reasonably take the initiative in an agitation which will ultimately prove to the benefit of all users of the roads. The lighting of vehicles and the quickening of the pace of some slow-moving and cumbersome vans that now lumber the highways is also a matter in which motorists should take some concern, and, whilst not forgetting the importance of the wider question in Parliamentary elections, should recognise the necessity of impressing these minor points upon candidates in local elections.

Silence.

MOTORISTS are often puzzled as to how motor-cars have been quietened recently, and it is rather interesting to look at the matter carefully to see where the noise has been deadened. We have now on most cars the carburettor with the automatic air regulator, a device which is certainly a great step to producing a quiet engine, seeing that, before it was introduced, there was some difficulty in getting the engine to run slowly, owing to the fact that the carburettor did not allow the engine to have less air when running slowly, and if it was run at too slow a speed it would easily stop. Another point to look to is the valve-gearing. At one time there was not very much attention paid in this direction and the half-time wheels were made very small, with the result that they rang and chattered in the most objectionable way. Now, however, we find very broad gear wheels; fibre wheels are also largely used, and consequently the valve gearing of the modern car runs as quietly as a clock. Outside road wheel brakes are a frequent source of noise, as, after they have worn a little, they rattle in a most annoying manner. Now, however, we find the internal expanding brake almost universally used, and of course, if properly constructed, there can be no rattle about them. In the latest models of most manufacturers long pistons are used, as it is found that they do away to a large extent with that objectionable knocking noise found in a fast-running engine.

The Berkshire Club.

THE inaugural dinner of the Berkshire Automobile Club took place at the Great Western Hotel, Reading, on Friday, the 5th inst., and about forty members and friends sat down, under the chairmanship of Sir Gilbert A. Clayton East. Amongst those present and who responded to the various toasts were Mr. E. Gardner, M.P., Major A. F. Poulton, Chief Constable of Berks, Messrs. Roger Wallace, Staplee Firth, Rees Jeffreys, Julian Orde, E. R. Portal, J. F. Ochs, C. Cordingley, and Dr. Hopkins Walters. In the course of his speech Major Poulton observed that Berkshire was one of the great highways into London, by road, rail, or water, and a great many motor-cars passed through the county. He was opposed to the setting of police traps on lonely roads, but placed policemen in villages and dangerous places to stop the few motorists—and he acknowledged they were only a few—who drove recklessly.

A MAY DAY procession of motor vehicles is to be organised this year.

THE Earl of Sandwich has just been elected a member of the A.C.G.B.I.

THE membership of the Motor Van and Wagon Users' Association now exceeds one hundred.

THE Kaiser has officially notified the German Automobile Club of his intention to witness the Gordon Bennett race.

THE Car and General Insurance Corporation, Limited, has arranged to give special terms to members of the Motor Union.

ON another page we publish an article on the interesting question of the use of picric acid in connection with petrol motors. As a good deal of attention has latterly been devoted to this "energiser," we shall be glad to have the experiences of those who have investigated its action.

THE NAPIER SIX-CYLINDER CAR.

IT was announced some time ago that for the 1904 season Messrs. S. F. Edge, Limited, were bringing out a six-cylinder Napier car, and this week we are able to give some particulars and illustrations of the new vehicle, the advent of which has been awaited with interest. The claim made for the new car by its makers is that, while of British construction, it is the best car in the world at the moment. In putting this

type, by which over a given diameter of valve a much larger circumferential opening is obtained than with the ordinary single-port valve. The engine has circular hollow connecting-rods and is fired by single-coil synchronised ignition. Only one coil is used and one brush, so that every cylinder fires exactly at equal intervals after the one before it and before the one to

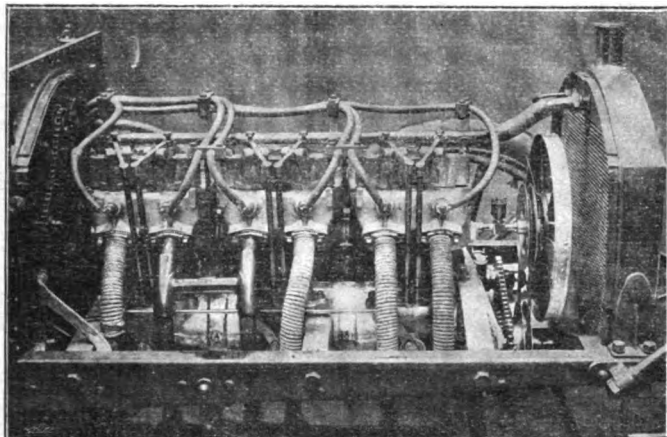


Fig. 1. — View of Napier Six-Cylinder Engine— Exhaust Side.

forward, it is not suggested that on every point it is necessarily better than every other car in the world, but it is claimed that on no one single point has any automobile ever been in advance of the one under notice, and that in many points it is ahead of anything that has gone before. These are somewhat important claims to make, and we, as probably also many of our readers, will closely watch the behaviour of the new type on the road, to see how far it fulfils them in practice.

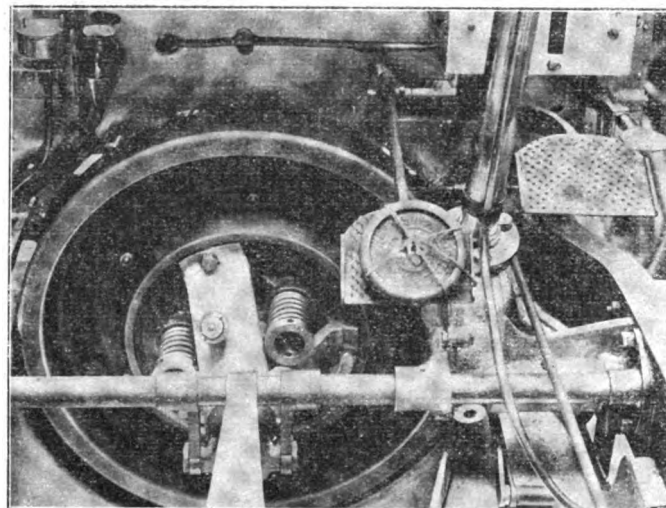


Fig. 2. — The Clutch on the Napier Six-Cylinder Car.

follow on, with the result that the engine shaft is never quite free from impulse, there being no interval of rotative effect. Fig. 1 represents a view of the exhaust side of the motor, and shows the chains driving the commutator and lubricating pump, both of which are located on the dashboard. The water circulating pump is positively driven, and runs on ball-bearings; it has a cut-out arrangement whereby, should by any chance any foreign matter get into the pump and stop it,

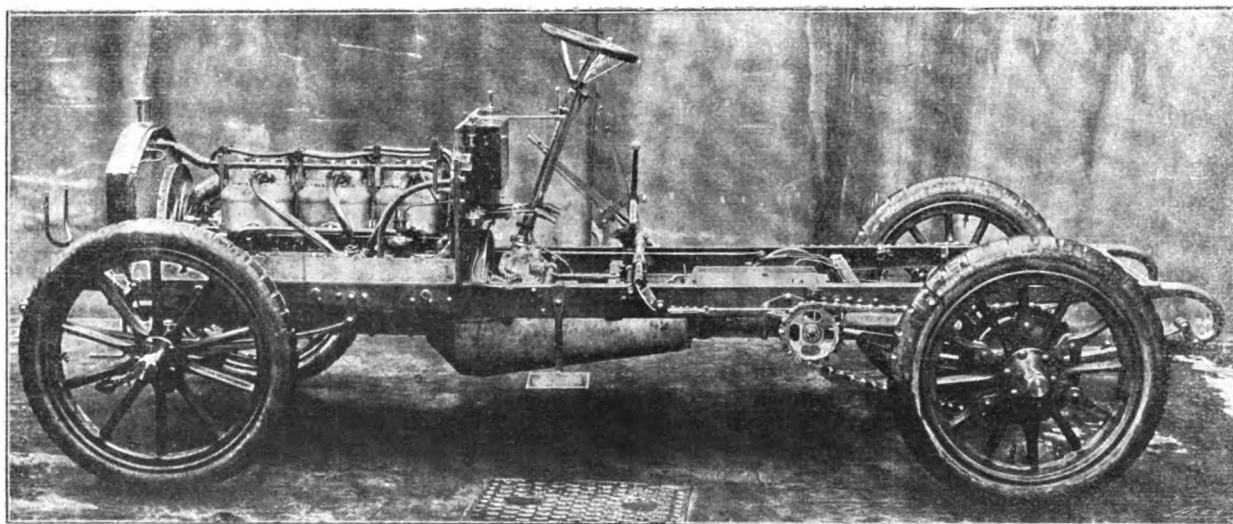


Fig. 3. — The Chassis of the Napier Six-Cylinder Car.

Passing to a description of the vehicle, a good idea of the chassis can be obtained from Fig. 3. The frame is constructed of steel, and is narrowed at the front to allow of a very sharp lock being taken. The motor, which, nominally rated at 18-h.p., develops 30-b.h.p., is located in the usual position under the bonnet. The six cylinders are cast in three pairs, there being no water joints in the cylinder heads. The valves are all mechanically actuated, the inlet valves being located above the exhaust. The inlet valves are of what is known as the "annular"

instead of the pump being broken, as is usually the case, there are two small prongs which would break without damaging the pump. These prongs are easily and instantly renewable when the pump is in working order. Even should the pump at any time stop, the water will still be above the tops of the cylinders, so that no harm to the engine could result, the only inconvenience being that the water would be more rapidly used up. From Fig. 1 it will be seen that the radiator is of the honey-comb type, of an exceedingly thin nature. This reduction in

size is obtained by the use of thin tubes, which are claimed to have extraordinary cooling properties, as well as great strength. Each tube is fluted in four places, with the result that larger water spaces between the tubes are created, and the same advantage of big tubing is obtained by keeping a large amount of metal in contact with the air and with the water. The aluminium fan, which induces a current of air through the radiator, is driven by a belt. The mixture is supplied by the carburettor with the hydraulic air regulator, which has already been described and illustrated in the *Journal*. The engine is stated to be perfectly silent, the exhaust, with the engine throttled down, being inaudible at three yards' distance.

Coming now to the clutch which connects the engine with the gear-box, a view of this is given in Fig. 2. It is of the metal to metal variety with no end thrust, being self-contained and kept in gripping position by three springs, which are independently and instantaneously adjustable. It is capable of transmitting 40-h.p., and yet, as is shown in Fig. 2, a two pound weight will depress the clutch sufficiently to allow it to slip. Between the clutch and gear-box a special universal joint is provided to prevent any strain on either. The joint is a solid square fitting into a similar shaped hollow receptacle, each piece being perfectly ground and hardened. It is so arranged that by undoing a few small nuts either the engine or gear-box can be removed without interfering with the other. The gear-box is exceedingly small and light. Three speeds forward and reverse are provided; on the top speed the drive is direct to the differential shaft, without any gear wheels moving, the gear-box merely acting as a long bearing. The gear-box is provided with an instantly removable lid. The differential gear is of the spur wheel type. From the differential shaft the power is conveyed to the rear wheels by the usual side chains. The engine and gearing are entirely encased in, the engine being covered on the upper portion by the bonnet, and the lower portion underneath by an aluminium shield, which extends to the gear-box, so preventing mud or dirt getting to the engine. The latter is of so flexible a character that on a standard-gear car the top speed will, the makers state, be practically always used, speeds of four to fifty miles an hour being obtainable by the use of the accelerator without the clutch ever being taken out. In fact, we are informed that one of these cars has been driven up Reigate Hill on the top speed, with three up, and in muddy weather.

On the extreme right of the dashboard is fixed the mechanically-driven lubricator, which only works when the engine runs, in the centre is the whole of the ignition apparatus. To the left is a small lubricator for the ignition, and to the left of this again is the indicator for the water circulation. Close to the latter is a small auxiliary air inlet, while underneath these are four grease lubricators for the gear-box and the water tube which runs to the water-cooled band brake on the differential shaft. The pipes are all carried inside the frame, and only project out when necessary to get to their respective bearings. The axles are of H section nickel steel; the rear one is quite straight, the chassis being kept low owing to the springs being slung underneath the axle. The rear wheel brakes are of the self-contained internal expanding type—metal to metal. A noticeable feature of the steering is the deeply-dished hand wheel with throttle lever in the centre. Roller bearings and ball-bearings thrust blocks are used where an advantage is gained by so doing, so that the minimum amount of power is lost in overcoming the friction in the transmission. The chassis, which is mounted on long springs, weighs 17 cwt., with 120 mm. tyres on the back wheels, and 100 mm. on the front. The standard sized wheels are 36 in. diameter. The wheel base is 9 ft., so that carriage bodies with side entrance can be fitted.

WE have received from the General Accident Assurance Corporation, Limited, a list of the principal claims paid by them during the past twelve months on account of motor-car assurances. It reveals far more eloquently than any long article could do the advisability of owners taking out such policies.

THE MOTOR CAR ACT.

Decision Deferred.

A MAJORITY of the town council of Worthing thought it would be a good thing if the speed of motor-cars and motor-cycles could be limited to ten miles an hour in all the streets of the town. The Local Government Board, however, sent intimation that it would be necessary for the council to specifically define the particular limits or places to which it was desired the restrictive regulation should apply. For the present the council will defer the matter—a sensible decision.

Cases in the Courts.

FOR driving a car without a lamp burning near the rear identification plate a motorist has been fined £3 at Mortlake, and another £1 at Horsham. Ten shillings has been extracted at Marlborough Street from a driver who did not produce his licence to the police when required. At Northampton, St. Neots, and Newcastle, fines of £5, £7 and £2 have been inflicted on motorists for driving to the public danger.

In the Isle of Man.

"TYNWALD" writes:—"Encouraged by the fact that you are devoting special attention to answering queries from your readers anent the Motor Car Act, I venture to ask for some information regarding motor-cars in the Isle of Man. What is the authority in this bright little spot that application has to be made to register one's car and obtain a driving licence? Also, what is the identification mark for Manxland? I should also be glad if you could inform me if there are any special regulations as to the speed, &c., of motor-cars and cycles in the island, as I am told that the regulations with regard to cycling are not the same as in England."

Dealers' Marks.

A NORTHERN dealer wants to know, "as a user of a general identification mark, if he is compelled to have a different coloured plate to private users. It was suggested by the L.G.B. 'white letters on a red ground,' but it does not seem quite clear that it is compulsory, and, as a matter of fact, I know some users of general marks who adopt white letters on a black ground. The abstract furnished by the County Council says nothing about it, neither does the registration." The regulations of the L.G.B. are very precise on this point, Clause b of Article XII. being as follows:—"The colouring of the plates shall be different from that used for the plates forming the ordinary identification mark." As a rule white letters on a red ground seem to be favoured by the local authorities.

Reversing Gear.

"J.M. 163" writes:—"I think the letter of 'BN. 9' appears none too soon; I have been looking for letters on this subject for some time. It must not be overlooked that this regulation is only a bye one, it was not contemplated when the rules were issued, and was sprung upon small car owners as a great surprise. What is the object of this rule that limits the weight to 5 cwt. (I am told a 3½-h.p. Benz car weighs 7½ cwt.)? I purchased a 3½-h.p. second-hand Benz car last year for between £60 and £70; it has no reverse, and does not require one; it can travel at from ten to fourteen miles an hour and stop in two yards, and lifted round by hand quite easily. I am told that it will cost about £20 to put a reverse to it, and then it will not be improved by a sixpence. I think two courses are open to small car owners; first, to get the 5 cwt. altered to 8 cwt. or 10 cwt.; secondly, that small cars built before January 1st, 1904, be not required to have a reverse; otherwise it looks as if our small cars will have to remain in their sheds till November 5th next." Several correspondents have overlooked the fact that the regulation as to reverse gears is not a new one. It occurred in the Local Government Board regulations under the 1896 Act, Article 11 including the following clause:—"Every light locomotive, if it exceeds in weight unladen five hundredweight, shall be capable of being so worked that it may travel either forwards or backwards." We are afraid the clause is retrospective.

Picric Acid and Petrol Motors.

By H. A. THIERSCH, F.C.S.



THERE has lately been much discussion on the subject of the use of picric acid to increase the explosive force of petrol, and the most extraordinary and contradictory opinions have been expressed. It will, therefore, not be amiss to look at the matter from the point of view of the chemist who has studied picric acid, and who knows fairly well what it will and will not do.

Picric acid is prepared from carbolic acid (phenol) by treating it with nitric acid, a process known as "nitration." It forms small yellow crystals with an intensely bitter taste, but is not, unless in very large quantities, actually poisonous. Though it can be handled with practically absolute safety, it can also be made to behave as a very powerful explosive. It is slightly soluble in petrol. These last two facts show us at once that it might conceivably be used to "enrich" petrol, and, by assisting in the explosion of the "mixture," materially increase the power.

Now, supposing we have two explosives, both normally generating the same volume of gases, the one which produces the greater heat will be the more powerful. As we can calculate both the volume of gases and their temperature from the known composition of any explosive, we can see at once how they compare as to energy. Examined in this way, picric acid is, weight for weight, more powerful than a petrol-air mixture, and should apparently have advantages over this. But as picric acid is a solid and cannot be vaporised under the conditions obtaining in an explosion motor, it must plainly be mixed or dissolved in a medium, such as petrol or alcohol, which will carry it into the cylinder.

Further, as picric acid cannot be readily exploded either by a flame or by any electrical firing system, it is necessary that the carrying medium should itself be of an explosive nature. For it has been proved that picric acid can usually only be fired by an "initial detonation"; that is, by the explosion of some substance either in contact with it or in close proximity. This result is obtained by dissolving the picric acid in a solvent such as petrol, and carrying this, vapourised and mixed with air, into the combustion chamber. The petrol-air mixture is fired by the spark in the usual way, in turn exploding the picric acid; and, as the two explosions take place with almost instantaneous rapidity, they may be considered as simultaneous. The practical result is, therefore, that the spark fires the picric-petrol-air mixture, giving greater power than with one consisting of petrol gas and air only.

The quantity of picric acid used should not be large, as experiments have shown that, if it materially exceeds 5 per cent. of the petrol, firing is not certain. That is, the initial explosion is insufficiently strong to explode a greater proportion of picric acid. Even this very dilute mixture seems to materially increase the power—exactly by how much has not yet been determined, but it probably varies from 5 per cent. to 15 per cent.

But picric acid has two very great disadvantages. It acts very strongly on metals, corroding them, and the products of explosion invariably contain corrosive gases. Not only the petrol tank, but every part of the motor (carburettor, inlet-valve) which could come in contact with the acid would very speedily become corroded, and accurate working of the parts would soon become impossible. Further, as we know that picric acid is not volatile, while petrol is, we see that, as soon as this is vaporised, the picric acid must separate out, the result being that it is present in the "mixture" as a very fine powder or dust. It is, therefore, reasonable to expect that much of the acid will be deposited on every part of the

motor between the carburettor and the combustion chamber. This is actually the case, and a small portion of the picric acid never gets so far as to assist in the explosion. The inlet-valve gradually becomes choked, and ceases to work satisfactorily, and after some time would become seriously pitted and corroded. As the carburettor is constantly in contact with the acid, it would be acted on in a similar way.

The other point, that of the corrosive products of combustion, is not so serious. With efficient lubrication of the cylinder, which is, of course, in any case essential, corrosion need not be feared, as metal which is thoroughly oily or greasy is not attacked by such gases.

To sum up, if we could obviate the tendency of the picric acid to separate out from the petrol, by adding it, for instance, in some way directly to the petrol-air mixture in the cylinder, without passing it through the carburettor and ordinary inlet-valve (thus avoiding its corrosive action) picric acid might be of very great value for enriching or "energising" petrol. Some metal, such as silver, which is practically unacted on by picric acid, might be found useful for protecting exposed parts of the motor, and I am sure that a suitable method of attaining satisfactory results could be suggested by some of our motor-engineers.

MESSRS. W. F. FRENCH AND SONS, LIMITED, has been registered with a capital of £2,500 to acquire as a going concern and carry on the business of a cycle and motor trader, Mr. W. F. French, at 314, High Road, Balham.

THE motor-car agents and dealers in New York have just formed the Automobile Trade Club. The chief object of the club is to have a common rendezvous for luncheon, where the members can meet and discuss current topics.

THE Grande Maison D'Automobiles, Limited, has been registered with a capital of £10,000 to carry on in the United Kingdom or elsewhere the business of manufacturers of and dealers in motor-cars, etc. The registered office is at 366, Euston Road, N.W.

At length Lancashire has awakened to the possibilities of the motor-car, and in scores of places impossible to tramway track, motor-bus services will ere long be in running order. The Bolton Corporation is about to establish a service between that town and Darcy Lever—a low-lying village in the locality.

MR. T. S. PHIPPS, who left Bombay with two motor-cars for a tour in India, has arrived safely at Mhow. He found the roads in good condition, and travelled by way of Igatpuri, Nasik, and Dhulia. The only delays *en route* were due to the difficulties of placing the cars on the ferries which cross the rivers.

THE Anglo-American Motor-car Company, Limited, have sent us a copy of a very complete catalogue they have issued, giving full particulars and detail illustrations of the Cadillac car, for which they are agents. They have also sent a booklet describing the improvements which have been effected in the Winton cars for the 1904 season.

THE Physicians' Automobile Club, of New Jersey, held a discussion on sparking-plugs at their last meeting. A proposition was made to amend the club's constitution so that physicians who are prospective purchasers of motor-cars may become associate members until such time as they shall become owners of vehicles, when they will be eligible for admission to full membership.

CONTINENTAL NOTES.

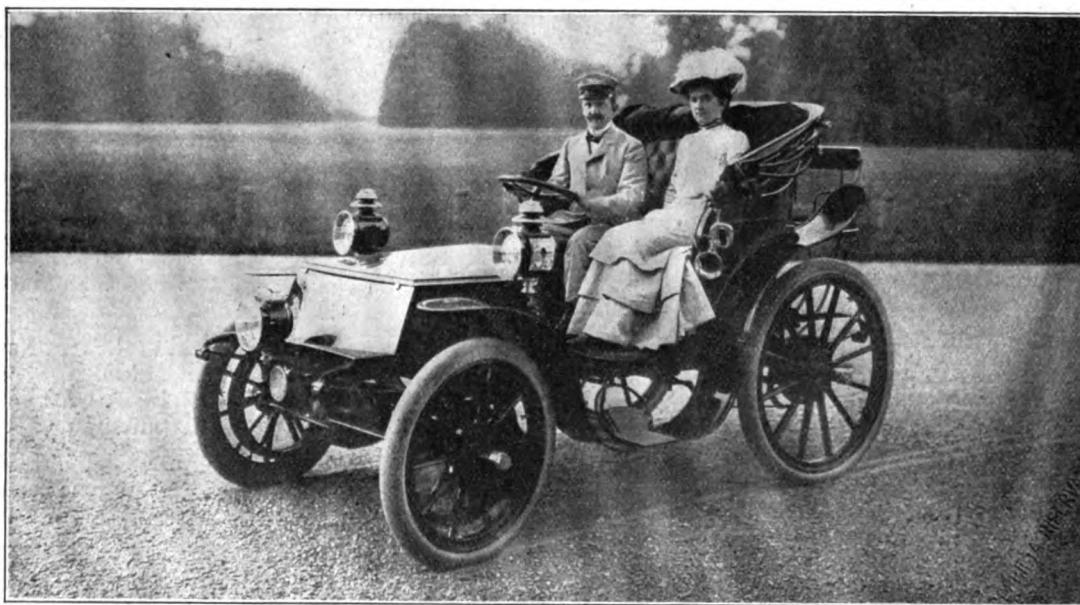
THE main topic of conversation in Continental motoring circles anent the Gordon Bennett race is the excessive charges which the hotel proprietors are making for accommodation during the Cup week. As regards the German eliminating contest, it is reported that this will be held over a 60-kilometre course in the Luneberg districts, passing through Soltau, Bisingen, Evendorf, Egerstorf, Salzhausen, and Oldendorf. A rumour is also current that only the cars of the Opel-Darracq and Benz Companies will take part in the eliminating race. The four Opel-Darracq cars, which are being built at Russelsheim, will, it is said, have four-cylinder engines of the same dimensions as those of the 90-h.p. Mercedes. The frame, shafts, and axles are being supplied by Messrs. Krupp, of Essen.

NOTHING definite has yet been settled with regard to the course for the French eliminating contest. The Panhard cars for the Gordon Bennett race will not be driven by chains, but by cardan shaft and live-axle. It is not intended, however, to make this change in the standard Panhard touring cars. It is reported that M. Alexander Burton, of Cannes, who owns a 60-h.p. Mercedes, will drive one of the 100-h.p. Gobron-Brillié

for tourists' cars, one kilometre with flying start, each car to have four persons on board, and with the necessary petrol, oil, etc. This will perhaps be the most interesting of the two races, for which a few nominal prizes will be given. Our correspondent adds that Algeria is a grand country for motoring. "The roads are very good and the country in the interior is worth seeing, especially Kabylie, and I can recommend those having cars to pay us a visit, say in the month of April. They will find no difficulty with the Customs people when landing. There are a large number of automobiles in Algiers, over 200. I may add that there is no restriction to speed once outside of the towns."

FRENCH motor-car builders are preparing to make an extensive display at the forthcoming international exhibition at St. Louis. It is expected that over 100 cars will be sent to the show, the exhibitors including Darracq, De Dietrich, Panhard, Mors, A. Clement, Fouillaron, Jeantaud, Aster, Griffon, Renault, Mutel, Turgan-Foy, and Georges Richard. In addition to the foregoing, most of the leading accessory firms are preparing to take part in the show.

THE Automobile Club de Namur and Luxembourg is offering a cup in connection with the Circuit des Ardennes race, to be awarded to the driver of the car which makes the fastest time



The King and Queen of Italy on their Krieger Electric Car.

cars in the French eliminating contest. The colours of the cars in the Cup race, so far as arranged, will be:—Germany, white; England, green; France, blue; America, red; Belgium, yellow; Italy, black. The Austrian and Swiss colours have not yet been decided.

TO-DAY, Saturday, the Automobile Club of Algeria will hold a race for the silver cup presented by an American gentleman named Sneden, a winter resident in Algiers. The cup has to be won two years in succession, the distance being one kilometre with a flying start. An Algerian correspondent writes that the race is not likely to be very interesting as there are only a few large cars in Algiers. The following are the entries for the event:—

- 45-h.p. De Dietrich, owner and driver, M. Malglave.
- 70-h.p. Panhard, owner and driver, Baron de Crawhez.
- 35-h.p. De Dietrich, owner and driver, M. Gerin.
- 22-h.p. De Dietrich, owner and driver, Baron de Viviers.
- 14-h.p. Renault, owner and driver, M. Samselius.
- 14-h.p. Renault, owner, M. de Bellemare, to be driven by mechanician.

On the same day and over the same course there is to be a race

once round the course. There are already fifteen entries for the race.

THE annual hill-climbing competition from Neuwaldegg to Exelberg, promoted by the Austrian Automobile Club, is to be held on May 8th. There will be classes for (1) light cars weighing up to 400 kilog.; (2) cars from 400 to 650 kilog.; (3) cars up to 1,000 kilog.; (4) motor-bicycles up to 50 kilog.; and (5) ditto up to 65 kilog.

AN important international automobile exhibition was opened on Saturday last in Turin by the Duke of Genoa. Altogether there are about seventy exhibitors, and all the leading types of French, German, Austrian, Italian, Swiss and Belgian cars are on view. There is also a large display of motor-cycles. It is to be regretted that British productions, either as regards petrol cars, or motor-cycles, are not represented.

No less than thirteen entries have so far been received for the anti-skidding device competition, which is to be held by the Automobile Club of Seine-et-Oise, from the 24th to the 28th inst. These include two cars fitted with the Samson-Hutchinson non-skidding band, and two with the Sainsbury anti-skidder.

Mr. W. R. M'Taggart, of Dublin, will, it is reported, drive one of the cars fitted with the latter.

SCHEVINGEN, the Dutch fashionable seaside resort, is to have an "automobile week" from the 5th to 10th July next. The programme will include mile and kilometre speed trials, driving competition for touring cars, and a floral fete.

At the annual meeting of the Russian Automobile Club, lately held in St. Petersburg, it was decided, in conjunction with the Moscow Automobile Club, to organise a reliability trial between St. Petersburg and Moscow during the coming summer. Arrangements are also being made for a tour to Homburg in connection with the Gordon Bennett race. At the meeting Mr. P. P. Boekel read an interesting paper on the novel features of the Paris Salon.

A PROJECT to construct a motor racing track near Spa is just now being freely discussed in motoring circles in Belgium. The proposed track is between Malchamps and Bronromme; it would be five kilometres long and comprise both level and hilly stretches. It is reported that the municipal authorities of Spa have agreed, under certain conditions, to give the necessary land for the proposed track.

A PUBLIC service of motor-cars is shortly to be established between Noumea and Bourail, New Caledonia, a distance of about 100 miles. The service, which is to receive a Government grant, will be maintained by three Turgan-Foy 24-h.p. petrol omnibuses.

It is stated that Signor Vittorio Sambolino, a well-known sportsman of Turin, has applied to the Italian Minister of Public Works for authority to establish a public service of automobiles in Italy and on the French and Swiss frontiers. It is proposed to create not less than 250 lines in localities not served by the railways.

THE Belgian Automobile Club has issued another circular to its members pointing out that excessive speed is still being indulged in by many *mecaniciens* and urging them to take steps to prevent this so far as their own cars are concerned.

THERE is a prospect of some record breaking trials at an early date. M. Gobron, of the Gobron-Brillié Company, as a result of the recent wonderful performances of Mr. W. K. Vanderbilt, jun., in Florida, has issued a challenge to the latter for a kilometre or mile race, to be timed by officials of the A.C.F. Baron de Caters has replied to M. Gobron that he will be glad to take up the challenge in the course of a week or so, when he will receive delivery of his new 90-h.p. Mercedes racer.

THE French postal authorities are about to inaugurate a somewhat extensive scheme of mail transport by automobiles. The work will be put out to contract, and tenders are about to be invited for the carriage of the mails over no less than twenty routes—three in the department of Pas de Calais, four in Puy de Dome, five in Dordogne, seven in the Pyrenees and one in Gers.

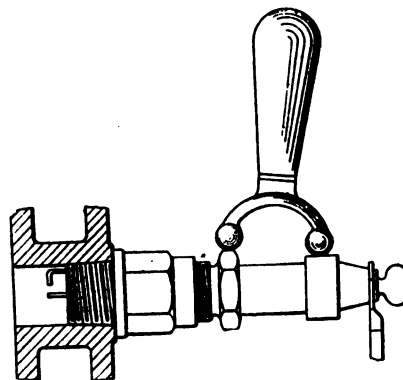
THE carburettor of a small motor requires thoroughly knowing to be able to get good and uniform results from it. Its function is to vaporise the petroleum spirit. This is done by a small quantity of the liquid petrol being forced under the action of the suction stroke of the motor through a small aperture and broken up into a spray by impinging on to a metal cone. There are, of course, many modifications of the method in which this is carried out. Before it can be used in the motor-cylinder the petrol vapour must be mixed with air in the right proportion. This requires some experience in the management of the mixture. The greatest power can only be got by having the proper mixture, so as to insure complete combustion of the charge. If the proportions are not correct, overheating will probably take place, and the exhaust gases will smell strongly. With a perfect mixture it is remarkable how little of it is required to develop the full power of the motor. Incomplete combustion is also very often responsible for sparking plug troubles, owing to fouling or charring of the points.

SOME USEFUL NOTES.

—X—

USERS of cars which have the Panhard starting device should remember that the little starting box on the crankshaft requires lubrication from time to time; if this is neglected, the box is liable to "seize," with the result that the handle will fly round and may do considerable damage.

WHEN in a multiple cylinder engine one or more cylinders produce little or no power, the usual way to determine which are the faulty cylinders is by short circuiting the sparking plugs in succession and noting the effect on the speed of the engine. A handy little device for accomplishing this has lately been introduced by the Auto Accessories Company, of Cleveland, U.S.A., under the name "Tell-Tale Cylinder Detector." The device can be used for both high tension and make and break igniters. In using the detector with a multiple cylinder engine, the device is first placed on one plug so that one ball touches the bushing and the other the insulated portion of the nut. When a short circuit is produced in a cylinder which is in proper working order there will be a diminution of speed that recuperates the moment the detector is removed. If the cylinder is inoperative its application will have no effect on the motor speed or exhaust. If trouble is shown to exist in a particular cylinder it may be due to a defect in the ignition or some other cause. In order to



determine whether it is due to the ignition, one ball of the detector is separated slightly from the sparking plug. If a spark jumps across the gap thus formed the fault is not likely to be with the ignition.

FOR the benefit of users of their motors, Messrs. De Dion Bouton and Company have just issued a list giving the dimensions of the various sizes of their engines. As we are frequently receiving enquiries from readers as to the bore and stroke of De Dion motors, the following table will not be without interest:—

Date of Introduction.	H.P.	Number of Cylinders.	Bore. mm.	Stroke. mm.	Cooling.
December, 1895	1	1	52	70	air
April, 1896	1	1	58	70	"
September, 1896	1	1	60	70	"
January, 1897	1	1	62	70	"
January, 1898	1	1	66	70	"
June, 1899	2	1	70	70	"
November, 1899	3	1	80	80	water
February, 1900	2	1	74	76	air
May, 1900	2	1	74	76	water cooled head
October, 1900	4	1	84	90	water
May, 1901	6	1	90	110	"
November, 1901	8	1	100	110	"
April, 1902	8-9	1	100	120	"
September, 1902	1	1	62	70	air
December, 1902	10	2	90	110	water
April, 1903	12	2	100	110	"

THE "XENIA" AUTOMATIC CARBURETTOR.

IN describing the "Crossley" car in our issue of the 3rd ult. we briefly referred to the automatic carburettor fitted to this vehicle, and promised to deal with it fully when the necessary drawings were available. These we are now able to publish, Figs. 1 and 2 showing sectional drawings of the device, and Fig. 3 a general view. For the following description of the carburettor we are indebted to Mr. J. S. Critchley:—

The novelty of this carburettor consists in the method of and apparatus for regulating the air supply and keeping the quality of the mixture constant at all speeds. Before going fully into the details of construction, it may perhaps be as well to consider the functions a carburettor for a petrol motor is called upon to perform. The great variation required in the speed of modern petrol engines, and also the constant variation of load, make the construction of a carburettor a much more difficult matter than if the motor were required, as in stationary practice, to run at constant speed and load. With the last-named con-

Having in view these conditions, it is clear that the carburettor has ever-varying and peculiar work to perform which can only be controlled by the suction of the motor, and must not be regulated by any results brought about by the engine's own increase or decrease of speed. In other words, the carburettor must act instantly.

There are two methods by which the air and petrol may be kept in their proper proportion. Firstly, means may be provided for cutting off both the air and petrol together, and, secondly, by cutting off or reducing the air supply only and leaving the reduced suction to regulate the petrol supply. The first-named method is difficult to carry out owing to the small size of the petrol jet, and has to be delicately done to be effectual for great variations of speed. The second method is the most feasible and effectual, as the quantity of air being so much greater in volume than the petrol very accurate adjustments can be provided. When the motor is pulling hard and running, say, at 100 revolutions below its maximum speed, it will be found that the amount or degree of vacuum in the suction pipe is just as great as when the motor is running at full speed, and the motor under these conditions requires its full volume per stroke, and its air ports wide open.

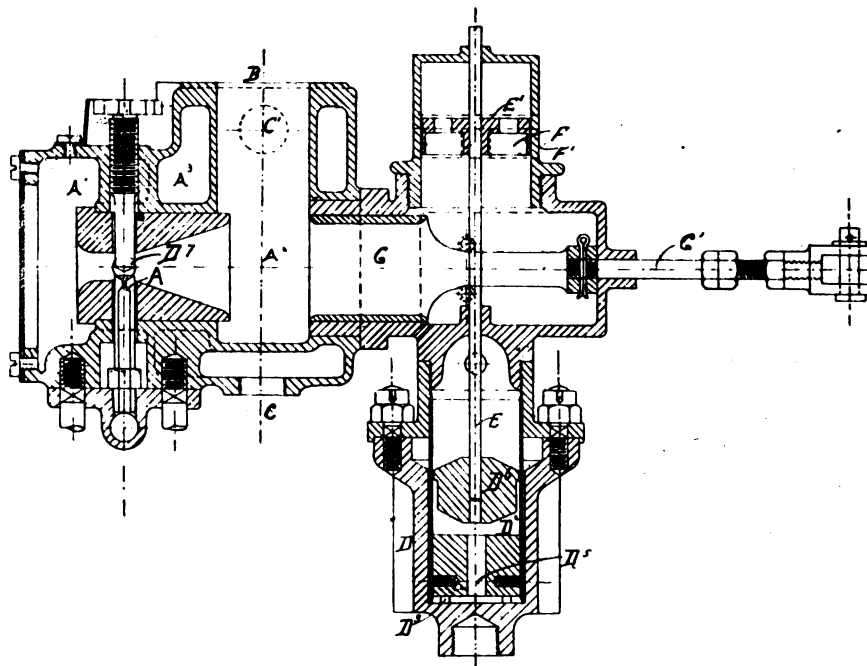


Fig. 1.—Section of "Xenia" Automatic Carburettor.

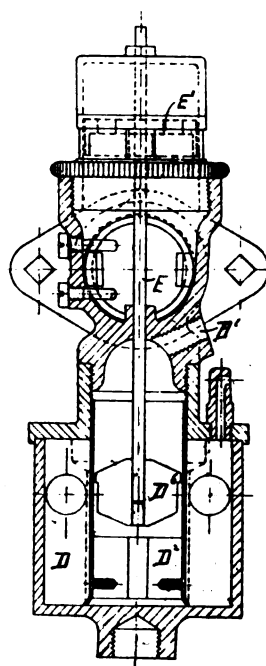


Fig. 2.—Cross Section through Automatic Regulator.

A. Jet.
A1. Air inlet.
A2. Mixing chamber.
A3. Water jacket.

B. Uptake to motor.
C. Inlet to water jacket.
C'. Outlet.

D. Mercury chambers.
D6. Float in regulator.
E. Spindle of regulator valve.

E1. Regulator valve.
F. Adjustable air inlet regulator valve.
G. Throttle valve.

ditions it is only necessary to once adjust the air and petrol inlets. When, however, speed and load are ever varying, the carburettor must still maintain the correct proportions of air and petrol. Air velocity plays a very important part in the carburation, and thorough mixing cannot be obtained without a certain air velocity. The fallacy exists that a richer mixture is required at slow speeds. This is not so; at all speeds the proportions of air and petrol must be the same; that is, the quality must be always constant at every speed, the only variation being that at slow speeds with the throttle valve partially closed the quantity must be less, but the quality and air velocity maintained.

A motor runs at less than the cut-off speed for two reasons. Firstly, by the act of the driver in closing the throttle valve, and, secondly, when the motor, by reason of the load put upon it, cannot work up to its maximum speed. Most modern engines are worked under these conditions. It is seldom that a motor-car driver allows the engine to "cut out." On inclines especially the motor is "pulling hard" and not running up to its cut-off speed. At other times the throttle is more or less employed.

Now any carburettor, the air supply of which is regulated by extraneous power, such as an increase or decrease of pressure due or created by the speed of the motor, cannot in this case give the motor its full supply, and just at a time when it is most required. A carburettor of this description does not anticipate the requirements—the motor continues to labour using an excess of petrol for the power developed, and cannot have the power given to it for picking up its speed. Take another form of regulation by means of a spring valve; this arrangement certainly gives full supply as the suction demands it, but when the throttle is partially closed, there comes a point when the vacuum or depression in the suction pipe fails to cause the valve to open, or, at least, to the required extent, and an incorrect mixture is the result. Moreover, spring arrangements require careful and accurate adjustment, rendering a perfect gradation of speeds almost impossible. The Xenia carburettor used on the "Crossley" car, has the defects of neither, is designed to give the exact quantity of air required at every speed, and under all conditions, and anticipates the requirements of the motor to an absolute exact degree. The petrol supply is of the usual float-

feed type, and is connected up in the usual way to the jet A; A¹ is a passage giving a fixed air supply, and A² the mixing chamber. B is the uptake to which the suction pipe of the motor is fitted. The mixing chamber A² and uptake B are water jacketed, a portion of the circulating water being conducted through it. The automatic regulator, which is attached to the body of the jacketed part by means of studs, forms the novelty of the apparatus. D are chambers, four in number, which contain mercury, and which surround a central tube D². In the base of the latter are four openings or slots D³, whereby the mercury in any of the outer chambers can flow into D². The bottom of the tube D² is plugged with wood, D⁵ having a central tube, for the purpose of reducing the quantity of mercury. The outer chambers D have an opening to the atmosphere. In the inner tube D² a wooden float D⁶ is placed, and connected by a light spindle E to a piston valve E¹. Ports F are formed in the cap F¹, through which air can pass to the mixing chamber A². Above the level of the mercury in the tube D² a passage D¹ is made, so that by a small coupling pipe the chamber D² is connected to an opening D⁷ in the passage A¹ of the fixed air supply at a point exactly opposite the jet. G is a hollow cut-off valve or throttle operated either by hand, by the motor governor, or by both, by means of the spindle G¹, whereby the quantity of the mixture is varied. It will be noticed that this throttle valve is hollow and so arranged that the two currents meet in the mixing chamber A². When the throttle valve G is pushed right through the mixing chamber the supply is entirely cut off.

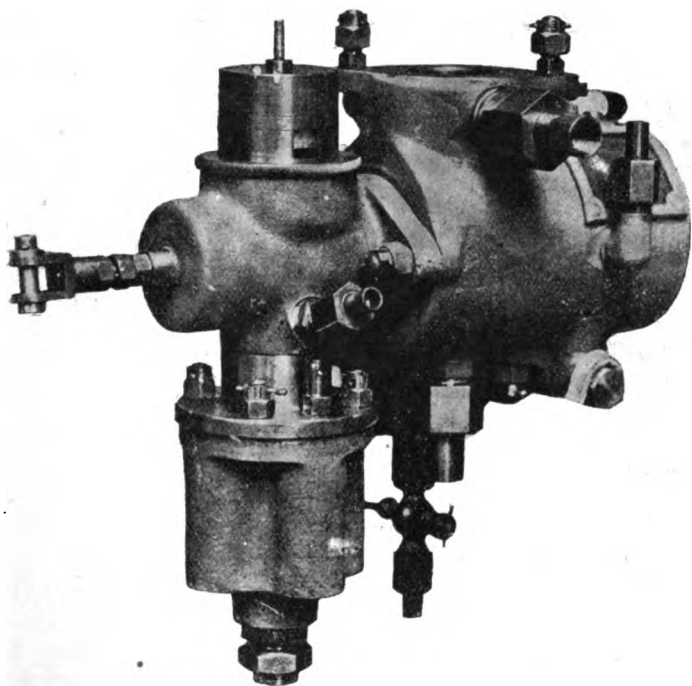


Fig. 3.—General View of "Xenia" Carburettor.

The regulator works in the following manner. When the motor is running dead slow, say at 100 revolutions per minute, the throttle valve is open about one-sixteenth of an inch, and the valve E¹ just covers the ports F, the fixed air supply giving, at the slowest speed, the requisite amount of air to run the motor. As the valve G is opened a greater vacuum or depression is created in the passage A¹ and the mercury chamber D². The mercury therein at once rises by reason of the increased vacuum, and falls in the outer chambers D. The rising mercury carries with it the float D⁶ and valve E¹, thereby admitting the exact quantity of air required, the petrol and air supplies being thus actuated by the same source of motion, namely, the increased vacuum in the suction pipe. With full load and the throttle wide open, the amount of vacuum or depression is such that the ports F are full open. It will be obvious that when the throttle valve is wide open the full quantity of air must be admitted,

whatever may be the actual speed of the pistons, and that as the throttle valve is closed and the speed decreased, the vacuum also decreases, and the air valve closes with absolute precision, thus giving the same quality of mixture at any speed. The slightest alteration in the opening of the throttle valve is instantly responded to by the opening or closing of the air valve; in action the air regulator is just as sensitive as the ordinary barometer. In order to prevent any agitation of the mercury a slight quantity of glycerine is put into the float chamber D², and steel balls are placed in each of the chambers D for the same purpose. The carburettor adjusts its air supply very accurately, with the result that a great economy in the consumption of petrol is effected.

A PETROL MOTOR TENDER FOR MAURITIUS.

IN 1899 the City of Port Louis, Mauritius, had the first modern English-built motor steam fire engine, specially constructed for the Fire Brigade by Messrs. Merryweather and Sons. This engine has completed four years' service, and has proved a most serviceable machine, able to reach fires more quickly than horse-drawn engines, and always arriving with full steam; it can get to work promptly; and it has saved a large amount of property, which would otherwise have been destroyed by fire. Port Louis has also a hydrant service, and a "first aid" machine being required for dealing with small fires, the makers of the motor steamer were requested to build a suitable apparatus, and they have designed the self-propelling hose-carriage shown in the illustration on page 973.

The motor is of the double-cylinder petrol type running at moderate speed, with electric ignition, and is placed between the frame in front of the machine under a bonnet. Power is transmitted through a gear-box, with sliding gears to the countershaft, and thence by roller chains to the rear wheels. Two brakes are fitted, one a band on the countershaft, worked by pedal, which also throws the clutch out of gear, and the other of the band type, acting on the hubs of both the rear wheels. The frame is of steel, strongly stayed and mounted on laminated springs, wrought axles, and steel wheels with solid rubber tyres. Under the driver's seat is a large box for gear, while behind is another receptacle for carrying stand-pipes, branch-pipes, etc., and below is a tray which will carry over 1,000 feet of hose for use with street hydrants or the motor fire engine. There is room for eight men, and the engine is of 12 to 15 h.p., giving a speed of twenty to thirty miles per hour on the level. The machine has been tested on hills, and easily ascended a gradient of 1 in 8 fully loaded.

MESSRS. DAVID MOSELEY AND SONS have entered into a contract with the British Motor Tyre Syndicate, Limited, for the manufacture of the Seddon tyre.

RUMOURS have been rife recently as to Mr. C. Jarrott driving an English car in the eliminating trials for the British Gordon Bennett team. They are false, Mr. Jarrott will drive a De Dietrich car only.

THE Bridgwater Motor Company, Limited, has been registered with a capital of £20,000 to adopt an agreement with Mr. H. Carver for the acquisition of the business of agents for and dealers in motor-cars and cycles carried on by him at Bridgwater.

MOTORISTS who went to Ireland last year were not so much concerned with the ancient buildings of the country as with its rooms and hotels. Hence the new history and description of the cathedral church of St. Patrick, Dublin, written by the Dean, and published by Messrs. G. Bell and Sons, Limited, will enable them to make partial atonement for the omission. This book is one of the Cathedral series, and deals pleasantly with a subject of interest not only to Irishmen but to all who take delight in buildings of architectural interest and historic importance.

TOURING IN ENGLAND AND ON THE CONTINENT.

A TOUR of some three thousand miles through England, France, and Germany has recently been completed by two American motorists—Messrs. Leon C. and R. H. Spaulding, of Rochester, N.H. The tour was made on a Winton car, and was free throughout from any trouble with their vehicle other than punctured tyres. Accompanied by a mechanic, the Messrs. Spaulding left the United States on September 3rd last, their car coming over on the same steamer, and on the day of their arrival they toured from Liverpool to Manchester. A couple of days were spent in Cottonopolis, and the following Sunday morning the trip to Leicester was made through Derbyshire. Mr. Leon Spaulding, who drove the car throughout the trip, considers these roads the best he found in Europe. The grades were gradual, and the surface was superior to anything on the Continent and immeasurably better than those of New Hampshire, where he resides. Kenilworth and the remains of the abbey founded in 1122 were visited, as was also Warwick and its famous castle, and then through Northampton to London. Several days were spent in the Metropolis, side trips being made to Kettering and other points. Then the Channel was crossed, the tourists going to Boulogne. Something like six hundred miles were ridden in England, and on that and the trip through the Continent the American tourists had ample opportunity of comparing the roadways of the three countries. While those on the Continent were long and straight and of excellent quality, Mr. Spaulding is of the opinion that the surface of the English roads is better, the only drawback being their turns and twists, which prevent speed.

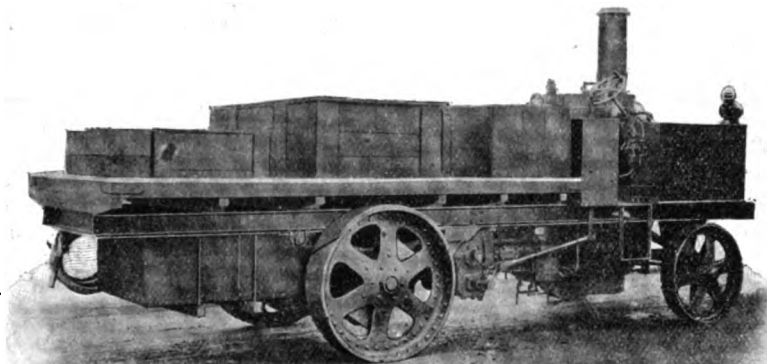
The trip from Boulogne to Paris was made in due season, and at the latter point the necessary licence was secured, and after a four days' stay there the party toured through Lyons to Nice. Next, a run to Monte Carlo was enjoyed, and then a week was spent in the Maritime Alps, the objective point being Grenoble. It was a beautiful ride over perfect roads and a gradual grade for miles, as shown by the fact that an average of fifteen miles an hour was maintained. The roads in the district are built around the mountain side, with sharp, dangerous curves. In many instances the road could be seen three or four miles away as it wound round the mountains. From Grenoble, Geneva was next visited. While on the road from Geneva to Lucerne the car was going along fairly fast, when suddenly a pair of oxen was driven on the road. Mr. Spaulding immediately applied the brakes, and the vehicle skidded and ran up the side of a bank. His brother jumped over a hedge, the interpreter dived into the same, and Mr. Spaulding hung on to his steering-wheel. No injury, fortunately, resulted, and the trip was continued from Berne to Lucerne. The next day the party climbed Mount Rigi, and then went through Basle to Mulhausen, Germany. Then came the trip down the Rhine to Strasburg, Metz and Cologne, and then to Brussels, where the party returned by train and steamer to England—leaving the mechanic to take the car to Liverpool, from which point a steamer was taken for Boston.

Mr. Spaulding takes particular pride in the fact that he took back with him all the extra parts that he carried. He was not as fortunate, however, in the way of tyre troubles, as he experienced five punctures on two separate days, and finally had to purchase a new pair of tyres for the rear wheels.

THE "RECTORY" STEAM WAGON.

HEREWITH we give an illustration of still another new steam wagon. It is known as the "Rectory," and is built by the Rectory Engineering Company, Limited, of Fullwell Road, Sunderland, to the design of their manager, Mr. J. K. Walton, and is the result of several years' experience in this special branch of engineering work. The fire-tube boiler is of special design and gives ample steam at 220 lbs. per square inch. The heating surface is about 105 square feet, and the grate area 3.5 square feet. The boiler is made in two parts, having an upper and lower shell, the former being easily removed when necessary for cleaning purposes. The engine is of the compound reversing type, having cylinders 4 in. and 6½ in. diameter, the stroke being 6 in.; it has constant lead valve gear worked by a single eccentric. All the working parts of the engine are entirely enclosed in a dust-proof case and run in oil. The machine-cut two-speed gearing and the roller driving chains are also completely enclosed in an oil-containing case. A specially strong type of steel leading and driving wheels is used, the front wheels having 6 in. tyres, and the rear wheels 9 in. The Ackerman system of steering gear is adopted, and a powerful screw band brake is fitted. The water tank will carry sufficient water for a run of from fifteen to twenty miles, according to the nature of the roads; the bunkers are large enough to carry 15 cwt. of coal. The front axle is pivoted at the centre, so as to allow

either wheel to drop one foot when going over rough ground without throwing any strain upon the frame, and consequently the engine and gearing are also free from undue strain when negotiating rough roads. In a recent trial of the first "Rectory" wagon turned out, a gradient of one in nine was, we are informed, easily negotiated with a useful load of four tons.



The "Rectory" Steam Wagon.

THE Normal Powder and Ammunition Company have been appointed sole representatives of the Usines Prunel for the United Kingdom.

A GARAGE for a dozen cars has been opened by Mr. A. Downie, in the Haymarket Terrace, Edinburgh.

THE Birmingham Motor Express Company, Limited, have several motor-buses of the Milnes-Daimler type on order.

FOR not having a light showing the direction in which he was going on his motor-bus W. Billington has been fined six shillings at Eastbourne.

M. A. CLEMENT has sent in a challenge to the A.C.G.B.I. for the "Harmsworth Cup." He has built a boat fitted with a powerful Talbot motor for the purpose of the race.

APPLICATION has been made to the authorities of the Canton of Ticino for a concession to establish and work a public service of electric motor vehicles between Locarno and Gravello, Switzerland.

THE Dublin and Swords Motor-car Company, Limited, has been registered with a capital of £2,500 in 500 shares of £5 each, for the purpose of establishing a line of motor-cars between Dublin and Swords, near Dublin.

A COMPANY, to be known as the Montreal and South Shore Auto Car Company, has been incorporated in Montreal to establish an automobile service between Victoria Square and St. Lambert. The cars to be used will each carry twenty-two passengers, and will be of 20 horse-power.

HERE AND THERE.

A SUGGESTION has been made for a motor-car service between Bridgnorth and Newport (Salop).

MR. C. R. BASE has removed his tailoring establishment to 306, Regent Street, W., near the Oxford Circus station on the Tube.

THE Pollard Garage, Limited, has showrooms at 47, Queen's Road, Bayswater, and is devoting considerable attention to motor-cycles.

MESSRS. ALFRED DUNHILL, LIMITED, will be in control of the garage at the Crystal Palace Show. A large staff of assistants will be in attendance.

PLANT for making copper and asbestos washers has been laid down by Messrs. John Child Meredith, Limited, of Birmingham. It is their intention to carry a stock of every size.

THE Windsor Rural District Council have had before them the subject of closing the gates of Windsor Great Park against vehicular traffic. The matter was adjourned for further information.

COUNCILLOR T. T. L. SCARISBRICK, who was recently fined £5 and costs for motoring in Lord Street, Southport, "to the danger of the public," is appealing against the verdict of the Southport Bench.

APPLICATION has been made for a concession to establish and work a public service of electric motor vehicles between Pamplona and Villara, Spain, the cars taking their current from an overhead conductor.

A DISCUSSION on "The cost, upkeep and care of a motor-car" is to take place at a meeting of the Western Section of the Scottish Automobile Club on Monday next. It should bring out some interesting information.

THE Pioneer Motor Car Company of India, Limited, has been registered with a capital of £5,000, to carry on the business of manufacturers, hirers, and repairers of and dealers in motors, motor-cars, motor yachts, etc.

TURNER'S MOTOR MANUFACTURING COMPANY, LIMITED (the makers of the Miesse steam cars), have now removed to the new works which they have recently purchased. Trial runs can be arranged with customers from the new place in Lever Street, Wolverhampton.

MESSRS. VAN RADEN AND COMPANY, LIMITED, have brought out an exceedingly neat and simple switch for one or two sets of accumulators. It is circular in shape and measures $1\frac{1}{2}$ in. over-all diameter by 5-8 in. in thickness, the base and cover being made of polished ebonite. The switch, which is practically watertight, is self-locking, and owing to its rigid construction there is little possibility of it getting out of order.

OWING to the increasing difficulties experienced in getting stock delivered quickly enough, the Edison and Swan United Electric Light Company has decided to adopt motor-traction for this purpose, and the first of their motor-vans recently commenced its duties. This van, a Milnes-Daimler of two ton capacity, makes a daily trip from the works at Ponder's End with a stock of lamps for the head office in London; thence supplies are taken to the various contractors in other parts of London. On its return in the evening, the van carries a load of empties and raw material.

THE first of the North-Eastern Railway motor-coaches, after preliminary tests, went through a satisfactory official test run of 60 miles on their main line last week. This coach was fitted with the first of the new "Wolseley" 80-b.h.p. petrol motors. The petrol consumption was approximately one pint per b.h.p. per hour. A speed of nearly forty miles per hour was frequently attained, and the sixty miles test run was accomplished at about thirty miles per hour average speed, including four stops and starts. The coach climbed a bank 1 in 95 on each journey without any difficulty whatever.

THE Brouhot Motor Company of Great Britain, Limited have opened a new depot at 25, Mortimer Street, Regent Street, W.

IN the "Agricultural Economist" for February, Mr. E. O. Greening continues his series of articles on the motor and its probable influence in agriculture.

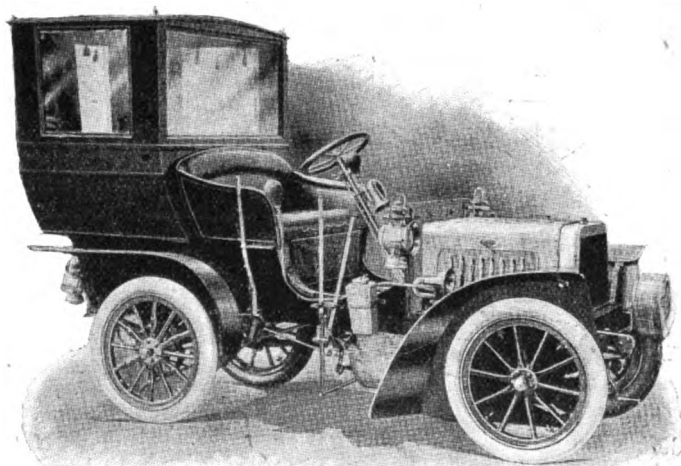
WE are informed that Sir W. G. Armstrong, Whitworth and Company, Limited, have taken over the entire patents and rights in connection with the Wilson and Pilcher petrol cars.

A COMPANY has been formed at Cleveland, O., U.S.A., to place on the market an odourless fuel for petrol motors which is said to possess 80 per cent. more energy per gallon than petrol.

AT a meeting of the Newcastle Emllyn Urban District Council it has been decided to co-operate with Cardigan in a petition to the Great Western Railway to arrange a motor service between the two towns.

SIR ALBERT DE RUTZEN, the magistrate at Bow Street, London, is considering the information laid before him by Mr. Staplee Firth as to the alleged perjury by a policeman in a motor-car case heard at that court.

AUTOCARS AND ACCESSORIES, LIMITED, is the title of a company, registered with a capital of £200. The first directors are Messrs. J. Portwine, J. Weller and H. E. Weller, and the registered office is at 114, Long Acre, W.C.



A 10-h.p. Argyll Car with Detachable Coupe Top.

MESSRS. A. DONALDSON AND COMPANY, LIMITED, has been registered with a capital of £3,000 to establish and carry on the business of manufacturers, etc., of motors, motor-cars, launches, etc. The signatories are all resident at Edinburgh.

AT a meeting of representatives of the District Committees of the Inverness County Council—under the presidency of Lord Lovat—it was agreed to recommend the Committees to appoint a joint Road Surveyor at a salary of £400, and that he be supplied with a motor-bicycle, with an allowance of £30 for repairs.

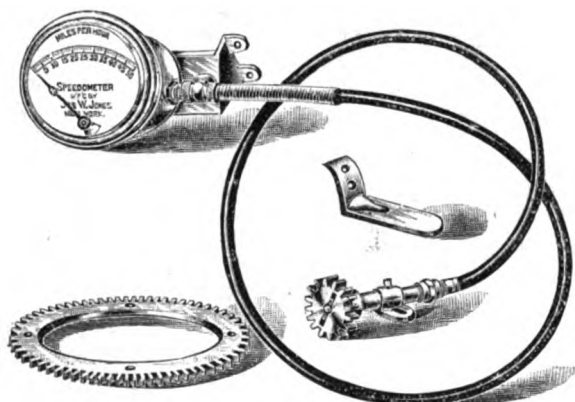
ALDERMAN W. B. HULTON has assured the Lancashire County Council that while the Main Roads and Bridges Committee, of which he is chairman, had no desire whatever to harass the makers of motor wagons, or to obstruct the users, the wagons must be so constructed and used as to prevent the destruction of roads and undue expense to the ratepayers.

MESSRS. HOLDING AND SON, of 7, Maddox Street, W., and 4, King Street, E.C., have just issued an extensive and highly illustrated catalogue which appears to cover the whole field of motor garments and of stylish garments that may be worn to motor in as well as for ordinary purposes. There is a striking illustration of their latest patent garment, viz., a waterproof coat called the "Car-Poncho."

MESSRS. CHARLES JARROTT AND LETTS, LIMITED, have secured the British rights in the automatic tyre inflator illustrated and described in our issue of the 16th ult. The device, which was awarded the gold medal at the Paris Salon, is now being made in this country and will be known as the "Pompeesi."

"ENGLISH CLUBS," a list of nearly 3,000 clubs frequented by English people in all parts of the world, for 1904, has just been published by Messrs. Spottiswoode and Company, Limited, and is edited by Mr. E. C. Austen Leigh, M.A. The book gives much information about each club, and this year, for the first time, automobile clubs find a place in the work; although we look in vain for information as to the Yorkshire, Nottingham, Reading, Manchester, Lincoln, and other well-known automobile clubs.

SINCE the advent of the new Motor Car Act an increasing amount of interest is being taken in instruments which will indicate the speed at which one is travelling on a motor-car. Among the many devices of the kind is the Jones speedometer, an American instrument which has been put on the English market by Messrs. Markt. The device is attached to the dashboard of the car, and is driven by means of a flexible shaft, at the end of which, in the old type, is a friction pulley, which rests against a ring or drum attached to one of the front wheels. In the latest pattern the friction drive has been abolished, and a positive gear drive substituted, greatly increasing the accuracy of the instrument. It can be had to fit on either the right or



left side of the car, and for wheels from 24 in. to 36 in., advancing two inches each time. In addition to the pattern designed especially for the dashboard, the speedometer can be had in a form specially for attachment to the steering arm, in which case the flexible shaft is dispensed with, and a certain amount of complication avoided, but in this position it is not so easy to read the dial, especially if the car be running at all fast. The dashboard pattern is made in two varieties, one registering up to fifty miles an hour, and the other recording speeds up to one hundred miles an hour.

ONCE a livery stable, now a garage for electric carriages, the premises in Curzon Street, facing Half Moon Street, Piccadilly, W., presented a busy scene on Monday, when a number of pressmen became acquainted with the work of the Electromobile Company, Limited. An inspection was made of the facilities possessed by the company for storing cars, more than seventy of which are now being garaged for private owners. A motorist having purchased an electric vehicle can have it kept charged and in good order in Curzon Street, the services of expert drivers being also available on a system which should be appreciated by West End people. Minor repairs can also be effected there. After an inspection of the garage and of the cars, Mr. E. Schenk drew attention to the progress that the electric vehicle is making. Although London had been somewhat laggard as compared with Paris and New York, the carriages now upon the streets of the metropolis would compare well with those of other cities. In the Electromobile, carriages English workmanship had been employed, the "straight chassis" being the work of Messrs. Greenwood and Batley, of Leeds, while London carriage builders were responsible for the coach work.

A COURSE of lectures on internal combustion engines is being given at the Hartley University College, Southampton.

THE London agents for the petrol made by Messrs. Whitaker, of Manchester, are Messrs. Miller and Company, 19, Hanover Square, W.

It is announced that the India-Rubber, Gutta-Percha and Telegraph Works Company, Limited, of Silvertown, is about to take up the construction of electrical cars.

A USEFUL handbook has just been issued by Messrs. Bradbury and Co., Limited, of Oldham, giving a number of hints with regard to the running of the "Peerless" motor-cycles.

POLICE CONSTABLE KERKHAM, of North Brixton, was once a motor-car driver. In his new capacity he secured the conviction of a motorist at the Lambeth Police Court, on Tuesday, for driving to the common danger.

THE East Sussex County Council is about to purchase a motor-car for the use of their chief constable, Major Lang. Probably the fines inflicted during the last few months in that locality on motorists will be more than sufficient to pay the cost.

WE have received two interesting snapshots showing a 10-h.p. M.M.C. car in Western Australia. The vehicle is the property of Mr. F. Wittenoom, who reports that it has run several hundred miles without giving the slightest trouble.

OWING to the growth of his business, Mr. A. A. Godin has taken new premises at 1, Red Lion Square, W.C., which are now being fitted up. He hopes to be in these premises within the next fortnight. Space will be reserved for a plant for charging accumulators.

THE Chief Constable of Folkestone has advised against any restriction of motor-car speed to the ten mile limit in the borough, and suggests that caution notices be placed on the borough boundary on Dover road, at the top of Sandgate Hill, and near the top of the Waterworks Hill.

EXAMINATION of the tracks left in the sand on the Ormonde-Daytona beach, Florida, after the passage of the Packard Company's racer, the Grey Wolf, showed that frequently the car was entirely clear of the ground, the rear road wheels sometimes being out of contact with the sand for a distance of eight feet, by actual measurement.

ON page 974 we illustrate one of the standard types of commercial motor-vehicles which Messrs. A. Darracq and Company are introducing into this country. It is fitted with a 12-h.p. engine, and in general arrangement follows the well-known lines of Darracq cars. The wagon, which is capable of carrying a load of 30 cwt., is provided with three speeds and a reverse, all controlled by one lever on the steering column.

PUBLISHED by Messrs. Sweet and Maxwell, Limited, and also by Messrs. Stevens and Sons, Limited, is "The Statutes of Practical Utility passed in 1896." These are arranged in alphabetical order in continuation of "Chitty's Statutes," and have useful notes by Mr. J. M. Lely, M.A. Of the forty-seven Acts adopted last year, twenty-four are dealt with, including, of course, the Motor Car Act. The text of the latter is given, with the Local Government Board's Regulations, and the book will be of value as well as of interest to the legal profession.

AT the official Exhibition of the Automobile Club to be held at the Agricultural Hall, London, next month, under the direction of Messrs. Cordingley and Company, a special section will be devoted to a display of heavy vehicles for municipal and public services. All the leading British makers of such automobiles for heavy traffic will be represented, including the Yorkshire Steam Wagon Company, the Lancashire Steam Motor Company, Messrs. Foden, Limited, Messrs. Mann, Messrs. Stirling, and the makers of the Hagen and Hercules types of vehicles. In the light car section several vehicles which will not be exhibited at any other exhibition in this country will be on view, and the interest of the public will also be aroused in leading types like the Peugeot, Talbot, Star, De Dietrich, Dechamps, Spyker, Richardson, Mors, Duryea, Mercedes, Serpolle, etc.

MOTOR-CYCLING NEWS.

—■—

MR. H. A. DIPPLE, of Brockley, was summoned at Greenwich by the Inland Revenue authorities for keeping a carriage, viz., a motor-cycle, without a licence. Mr. Purnell, an Inland Revenue officer, said that on September 23rd he saw the defendant on a motor-cycle. He afterwards sent defendant a form, which he filled up, to the effect that the cycle was the property of Mr. J. J. Leonard. Mr. Leonard said the defendant was a partner in his business at the Brockley garage, adjoining the defendant's premises. On the occasion in question he was testing a motor-cycle before it was sold. The defendant said that at the time there was a verbal agreement of partnership from March last, but he did not state it in the form he filled up, as he had no agreement to show. This year he had taken out a two-guinea and a fifteen shillings licence, which he had since found were not necessary. He held a County Council licence which cost £3. Mr. Baggallay said the defendant made an untrue answer on the form, and must take the consequences. He would have to pay a fine of £3 and 9s. costs.

MR. G. C. GNAPP, manager of the cycle department of Messrs. Walker, Sons and Company, Limited, has returned to Colombo after an interesting ride by motor-cycle to Kandy, Ceylon. Starting on his Quadrant from Grand Pass bridge in the early morning on New Year's Day, he passed through Veyangoda an hour and five minutes later, and did not dismount until the thirty-ninth mile-post had been reached. Later, while going along at a rattling pace round a curve, and loudly sounding his cycle horn, Mr. Gnapp found himself all but landed between the ponderous legs of an elephant, which was being driven Colombo-wards. An accident was averted in the nick of time; but the elephant and its keeper seemed to be the most alarmed, and they regarded the strange contrivance, which they apparently saw for the first time, with amazement. The journey was continued over the Kadugannava Pass. The climb was a stiff one, and care had to be exercised in negotiating the sharp elbow-curves, for which the road is so noted. Mr. Gnapp rode on to within six miles of Kandy, when a heavy shower of rain compelled him to dismount and take shelter. With the completion of the ride to Kandy, Mr. Gnapp has ridden 1,000 miles on his motor-cycle, and he says that the Quadrants seem to have caught on, as, in the two months following his return from England, he had sold, or had received orders for, eight machines.

MESSRS. JOHN CHILD MEREDITH, LIMITED, have sent us a sample of a number-plate they have introduced for attachment to the lamps of motor-cycles. It is made to fit any lamp. There are three sizes, for lenses from $3\frac{1}{2}$ in. to $4\frac{1}{2}$ in., for ditto from $4\frac{1}{2}$ in. to $5\frac{1}{2}$ in., and ditto from $5\frac{1}{2}$ in. to $6\frac{1}{2}$ in. When fixed in position, the plate throws no shadow upon the road; its weight is under three ounces.

THE Motor-Cycling Club will hold its first run of the season on the 12th March. Brighton will be the destination, starting from Purley at 3.30 p.m. It is proposed to hold a run from London to Edinburgh on the Saturday before Whit-Sunday, the start to take place at midnight.

THE Austrian Touring Club and the motor-cycle section of the Automobile Club of Austria are organising a motor-cycle race from Vienna to Brunn for the 8th May. There will be separate sections for racers and tourists.

AT the invitation of the captain, Mr. E. H. Humphries, the members of the Birmingham Motor-cycle Club attended an "At Home" at the headquarters a few days ago, when a most enjoyable evening was spent. In the course of a short address Mr. Humphries mentioned that prizes to the value of upwards of £30 were already offered for the coming season in competitions. The honorary secretary stated that it was proposed to hold two or three runs each month during the coming season, as well as occasional smoking concerts and week-end runs.

A NEW friction clutch for use on motor-cycles has lately been brought out by the 20th Century Cycle Company, of Erith. It consists of a metal driving pulley, recessed so as to also form the female portion of the clutch. The pulley runs free on the engine shaft. The male portion of the clutch is leather covered and is kept in contact by means of an internal spiral spring in the outer end of the engine shaft, which is bored out to receive it.

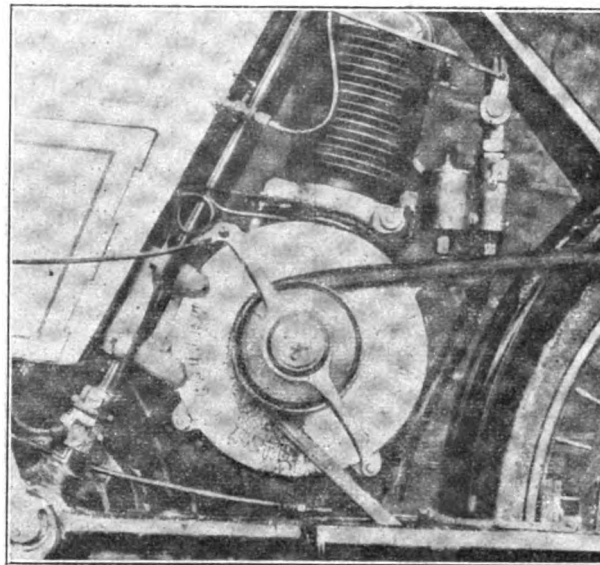


Fig. 1.—General View of Clutch.

This male part is held to the shaft by a feather, so that while it must rotate with the shaft, it is free to slide laterally on it. The clutch is operated by lever and wire from the handle-bar, and a suitable arm on the clutch is connected therewith, the clutch being drawn out by pressing a lever on the handle-bar. A ball race takes the thrust when the arm is out, and the thrust on the clutch and pulley, caused by the internal spring, is overcome by means of a groove turned on the spindle, in which run three set

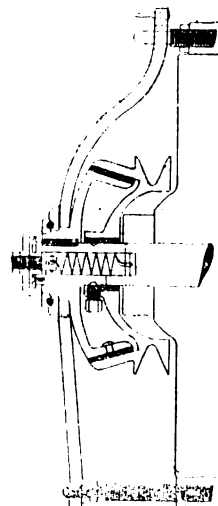


Fig. 2.—Section of Clutch.

screws which are screwed through the boss of the pulley. The device can be fitted to existing motors for either chain or belt drive, and seems to be well adapted for the high-power engines of two-seated motor-cycles.

MESSRS. JOSEPH LUCAS, LIMITED, have removed their London office to 224, Shaftesbury Avenue, W.C.

THERE was a noticeable increase in the exports of motor-cars and parts from the United States during December last, a total of £14,709 being recorded as against £8,739 in the last month of 1902. The total for the year was £328,605 as compared with £213,956 in 1902.

OUR DIRECTORY OF "NUMBERS."

[ALL RIGHTS RESERVED.]

Below is a further instalment of Automobile Numbers. Motorists who have not yet communicated with us are invited to forward their Names, Addresses and Numbers.

Dealers are also requested to send their general identification marks for inclusion in the second column.

Ajello, L. R., 10, Albert Road, Gloucester Gate, N.W.	A.	652
Arnott, Geo., Market Place, Pickering, Yorks	U.	87
Allen, Wm., Tone Engineering Works, Taunton	Y.	82
Aldons, D., Mannamead, Plymouth	C.O.	18
Bartram, W. J., 97, St. Nicholas Road, Norwich	E.X.	6
Bocock, Geo., 16, New Station Street, Leeds	U.	54
Bacon, Hatley, Commercial Street, Leeds	U.	18
Burbridge, E. B., Easton, Newbury	B.L.	309
Burnham, Walter M., Carlingford House, Merton	P.	19
Butler, J. G. W., "Anaverna," Murrayfield, Edinburgh	S.	32
Bradley, David, Denshaw House, Morley, Leeds	C.	59
Bannister, Miss Edith, 9, Cannon Street, Accrington	B.	133
Bolton, L. A., 10, Bowden Street, Oldham	B.U.	7
Bedwell, G. C., East View, Tenison Road, Cambridge	C.E.	104
Berry, A. W., Artillery Street (South), Colchester	F.	431
Baker, T. and Sons, 35 and 37, Friar Street, Reading	D.P.	27
Birmingham and Coventry Cycle Company, 165, Above Bar, Southampton	C.R.	46
Benbough, G. L., 22, Tivoli Place, Ilkley, Yorks	C.	379
Bowden, S., Sutherland Terrace, Plymouth	C.O.	7
Burrongs, Wellcome and Company, Snow Hill Buildings London, E.C.	A.	1469
Carter Paterson, and Co., 128, Goswell Road, E.C.	A.	2174
Clark, W. E. and Co., Station Road, Doncaster	C.	304
Coade, James W., 61, Brixton Hill, S.W.	C.	306
Corbet, Captain, 61, Gt. Cumberland Place, W.	A.	12
Clarke, Stewart, Dundas Castle, S. Queensferry, N.B.	S.X.	5
Campbell, A., 14, Baker Street, W.	A.	2222
Citroen, D., Shooters' Hill, S.E.	H.	251
Cooper, Montague, Taunton	Y.	94
Caunt, J., Portland Square, Sutton-in-Ashfield	A.L.	38
Chadwick, W., Reid's Road, Blackpool	B.	203
Collett, O., Bampton, Oxon	B.W.	12
Cary, Mrs. R., Elliott Terrace, Plymouth	C.O.	9
Cross, Mr., Darnford Street, Stonehouse, Devon	T.	2
Crosley, James, 12, Tower Bridge Road, S.E.	A.	410
Delafield, R. B., 33, Frankfort Street, Plymouth	C.O.	12
Dean, Major, The Towers, Yarmouth, I.W.	C.O.	124
Day, W. J., Mount House, Harwich Road, Colchester	D.L.	25
Egerton, Mr., Ipswich	F.	457
Estcourt, E., Thatcholme, The Avenue, Wroxham	D.X.	11
Edge, S.F., 14, New Burlington Street, W.	A.H.	12
Edison and Swan, United Electric Light Company, Limited, 36, Queen Street, E.C.	A.H.	13
East Pier Engineering Works, Scarborough	A.	3332
Edwards, W. P., Corporation Street, Taunton	H.	372
Firefly Motor Company, Croydon	A.J.	62
Folkestone Motor Public Service, Folkestone	Y.	131
Finny, Dr. W. E. S., Tamesa, Kingston Hill, Surrey	B.Y.	92
Fuller, S. W., South Street, Dorking	B.Y.	94
Fieldhouse, Harry, Nuneaton	B.Y.	95
Fiddian, Wm., "Ferndale," Park Road, Moseley	D.	280
Garrard, C. R., 12, St. Charles Square, W.	D.	288
Glass, W. 72, High Street, Croydon	P.	379
Gooch, C. W., Sedburgh, Yorks	P.	452
Glassen, R. J., Beacon Bank, Penrith, Cumberland	A.C.	86
Gamage, Limited, A. W., Holborn, E.C.	O.	18
Gollin, John, Grantham	A.	2366
Hansford, A. W., 20, Jewry Street, Winchester	B.Y.	93
Hutchinson, Mr., "S.W. Yacht Club," Plymouth	C.	14
Hinder, A. R., Land's End, Chippenham	A.O.	76
	A.	844
	C.T.	60
	A.A.	94
	D.R.	10
	A.M.	238
	A.M.	239

Hyde, A. E. S., The Square, Stow-on-the-Wold	A.D.	27
Hynes, Wm., 94, Gt. Western Street, Moss Side, Manchester	N.	268
Hicks, S. and Son, 10, River Street, Truro	A.F.	2
Humphrey and Co., 166, High Street, Sevenoaks	D.	162
	D.	167
Irvin, Rev. E. A., Woodlesford Vicarage, Leeds	U.	56
Johnson, L., Mountfields, Child's Hill, N.W.	H.	411
Jennings, S., 46, Bridge Street, Morpeth	X.	77
Justin, Mortimer, Stratton Villa, Croydon Road, S.E.	D.	792
Kemp, J. H., Eastbourne Street, Lincoln	F.E.	34
King, H., Clapham Park Road, Clapham, S.W.	A.	2991
Kelsall, Mr., Fleetwood	B.	187
Kettle and Company, H. G., 24, Lower Brook Street, Ipswich	D.X.	4
Kay, Wm., Ash Lodge, Chester Road, Stretford	N.	1
Leader, R. W., Cumberland Park, Willesden Junction	A.	2572
Lound, J. E., 14, Baker Street, W.	A.	2221
Lovell, S. G., Stickney, Boston, Lincs.	D.O.	23
Leavers, H. F., 14, Bank Street, Carlisle	A.O.	33
Lewis, J. A., 17, Warwick Road, Ipswich	D.X.	44
Latt and Robb, East Street, Plymouth	D.X.	22
Lofts, A. C., Northern Grove, West Didsbury	C.O.	22
Motor Cartage Company	N.	16
Manton, A. W., St. James' Terrace, Plymouth	A.	1162
	C.	10
Newby & Co., 38a, Marton Road, Middlesbrough	D.C.	54
Neeld, Lieut.-Col. Sir Andley D., Grittleton, Chippenham	A.M.	56

(To be continued.)

DEALERS' MARKS.

London Stereoscopic and Photographic Co., Ltd., 106 and 108, Regent Street, W.	A.	J.M.
Ormonde Motor Co., Wells Street, Oxford Street, W.	A.	D.K.
Bottoms and Co., 196, East India Dock Road, E.	A.	H.N.
Lavell, J. and Sons, 317, Camberwell New Road, S.E.	A.	L.
Hampstead Motor Co., 109, Goldhurst Terrace, N.W.	A.	H.C.
Bell, R. M., 95, Foxburne Road, Balham, S.W.	A.	F.K.
White, F., 8, Lupton Street, Kentish Town, N.W.	A.	G.P.
Pollard Garage, Limited, 47, Queen's Road, Bayswater, W.	A.	H.G.
Highgate Motor Car Co., 23, Grand Parade, Archway Rd., N.	H.	C.
Prestwich, J. A., 1, Lansdowne Road, Tottenham, N.	H.	T.
Hobson, Ltd., H. M., Auckland House, 36, Basinghall Street, E.C.	P.	A.A.
Merigold, Bros., 147, Church Street, Preston	C.K.	M.
Smith, H., Netherheys, Colne, Lancashire	B.	L.
Express Motor Co., 20, Lytton Street, Liverpool	K.	A. 10
Robinson and Price, Ltd., Chatham Street, Liverpool	K.	A.
Stanbury and Co., Commutation Row, Liverpool	K.	74-85
		A.
		104-115
Madgwick, J. N., 77 and 79, Knowsley Street, Bolton	B.N.	B.
Ramsbottom, R., 81, Market Street, Manchester	B.	A.
Garner, T., 12, Peter Street, Manchester	N.	M.R.
Edismitth Motor Co., 53, Darwen Street, Blackburn	C.B.	X.
Brownword, R. and W., 19 to 27, High Street, Stockport	D.B.	A.
Forbes, F. E., 9, King Street, Southport	B.	E.
Atkinson and Griffin, 58, Highgate, Kendal	E.C.	W.C.
Jackson, H., Queen Katherine Works, Kendal	E.C.	W.
		16-20
Croft, H. J., Victory Works, Kendal	E.C.	W. 1-5.
Dickson, John, Cycle Depot, Cockermouth	A.O.	J.
Durham, Churchill and Co., Grimesthorpe, Sheffield	W.	A.
Sheffield Motor Co., 56, Broomhall Street, Sheffield	W.	A.
Thompson and Sons, 83 and 85, Sheffield Moor, Sheffield	W.	A. 31
		35
Hodgson, J. D., 94, Northumberland Street, Newcastle-on-Tyne	B.B.	N.I. 6
Bartlam and Thompson, Goole	C.	A.M.
Wright and Co., Newland, Lincoln	F.E.	R.M.
Holland Bros., Barcote Motor Works, Boston	D.O.	H.
Mann, Egerton and Co., 5, Prince of Wales Road, Norwich	C.L.	A.
Boon, F., 17, Crown Street, Ipswich	D.X.	D.
Botwood and Egerton, Motor Engineers, Ipswich	D.X.	B.
Kettle and Co., H. G., 24, Lower Brook Street, Ipswich	D.X.	A.
Brooke and Co., J. W., Adrian Iron Works, Lowestoft	B.J.	A.
Criswell, E. C., High Street, Newmarket	C.F.	A.
Green and Co., J., Loughton, Essex	F.	E.6
Archer, A., High Street, Dunmow	F.	E.18.
Blake, J. W., 113, Eleanor Cross Road, Waltham Cross	A.R.	H.C.
Fells Bros., Waltham Cross	A.R.	H.A.

(To be continued.)

CORRESPONDENCE.

BENZ v. LIGHT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

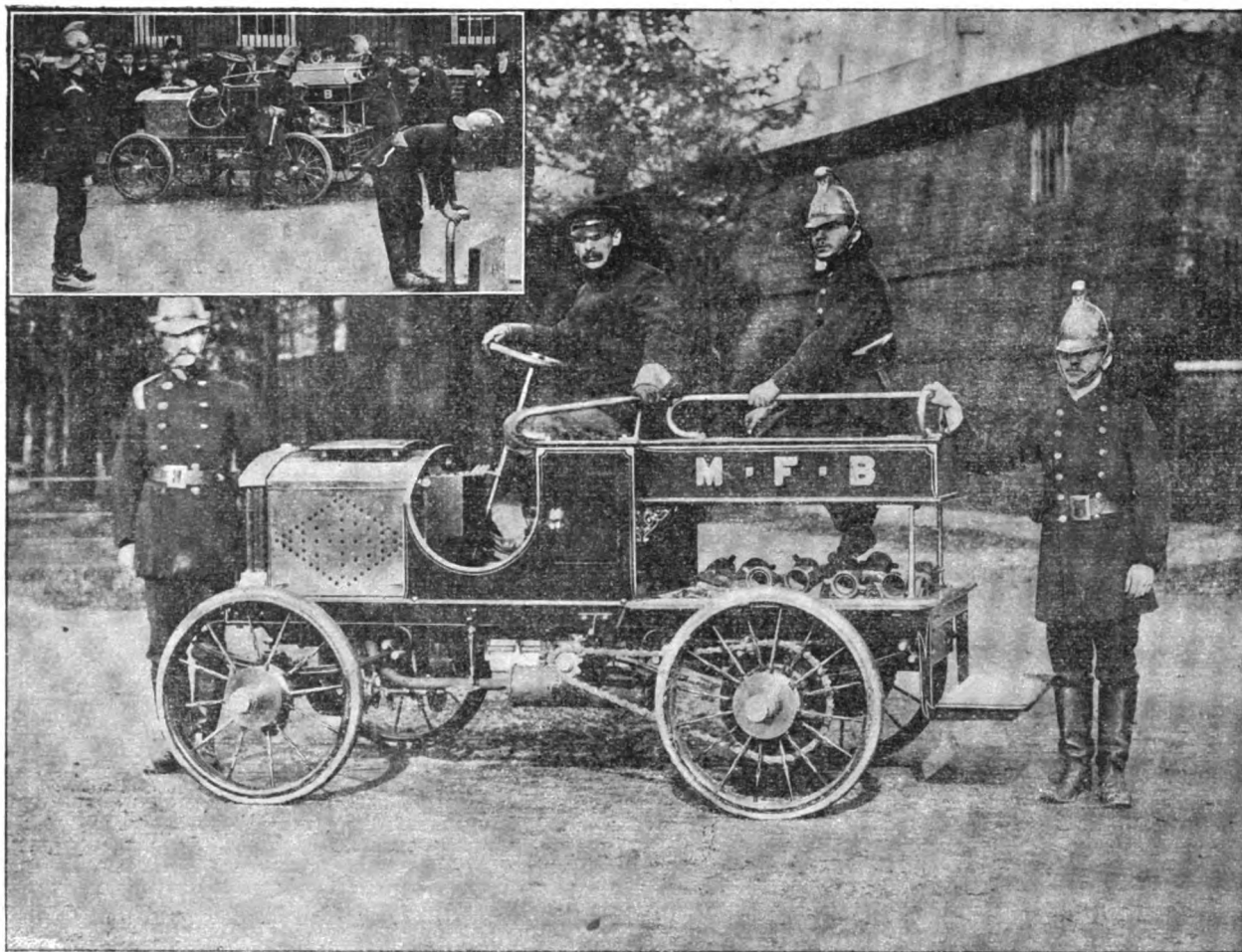
SIR,—I was very much amused with the letter of W. H. W., in last week's issue, and hardly knew whether to take it seriously or not. In the first place it would be interesting to know how the different speeds are worked with only one belt, or is it a geared Benz? also how these three marvellously powerful band brakes are put into operation "one after the other" by pressing one pedal. In my experience the brake power of a 3½-h.p. Benz is utterly inadequate for the weight of the car, and I should be glad to hear of a more powerful foot brake. The fact that "he can travel for two days without calling for petrol or water" either means that he has had some enormous tanks fitted or that he does not travel far. Your correspondent makes a mistake when he says the cars have only been restored to their original efficiency, and even that is doubtful; if he reads the letter of Mr. Hay Taylor he will find that his car was improved shortly after it was bought new. The fact is the cam

that I venture to write you on the subject. Can W. H. W. prevail upon the gentleman who has made such improvements on his Benz to give the readers of the *Journal*, who are interested in Benz cars, the benefit of his experiences? I am the owner, fortunate or unfortunate, as the case may be, of a Star Benz, and I have often thought, considering the size of the cylinder and the excellent get up of the car, that much more power should be got out of it.—Yours truly,

STAR BENZ.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been very much interested in the discussion on the above subject, which has been instrumental in bringing out a number of "tips" for users of the 3½-h.p. Benz car. I cannot, however, agree with those correspondents who condemn the mechanically-operated inlet valve. In my opinion, this is of great importance on these low-powered cars. I was one of the first to fit the Ratcliffe device, and must say it has been a great improvement. Not only can I now mount fairly stiff gradients, but I can run much slower in traffic on top speed, which is a great advantage.



The New Motor Fire Tender for Mauritius. (See page 967).

operating the exhaust was not originally made the correct shape to give the best results, but slightly widening it at the sides makes a wonderful improvement in the power. If there are potentialities in the old Benz cars not yet dreamt of, I am sure we shall be only too pleased if we can find them out or have them pointed out to us; but I think it is useless to compare the size of the Benz cylinder with those in use on the latest make of engine; for one thing, the Benz is a slow-running engine, making about 750 revolutions a minute against the others at 1,500 or 2,000, which would, I should think, make the latter about two or three times as powerful looked at from a non-practical point of view. Personally I think if a 3½-h.p. Benz is improved so as to do twenty miles per hour on the level and take small inclines on top speed, making an average of fifteen or sixteen miles per hour, it is quite as much as we can expect from it.—Yours truly,

A SATISFIED BENZITE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with great interest the letters in the *Journal* respecting the Benz car. I have got a few hints which have benefited me; but the letter in last issue signed W. H. W. whets my curiosity so much

When adopting the M.O.I. valve care should be taken in fitting the cam in the right position, so that the valve is full open on the commencement of the stroke, and closed at the end of the stroke. The air valve spring at the back of the cylinder may require readjustment to suit the new conditions.—Yours truly,

GRATIFIED BENZITE.

THE REPAIR OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is difficult to see where "Chirurgien" has been "glaringly overcharged" in the items mentioned by him last week. Time is charged out at 1s. per hour. Does he think that any repairer can supply skilled labour cheaper than that? It is customary for a repairer to charge for use of gas engine and lathe, though it is not always entered as a separate item. Gas engine and lathes have to be paid for, both in first cost and upkeep.

I have had considerable experience in costing and pricing up motor repair work, and, after looking carefully through the items printed, I

really cannot see that your correspondent has much to complain of. But does not an 8-h.p. car, which costs £100 for repairs in less than six months, suggest a change of make unless "Chirurgien" has been unfortunate enough to meet with bad accidents?—Yours truly,

FRANCOIS.

MISFIRING TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have frequently found when driving in wet weather that the engine of my car either stops altogether or misses very badly when the sparking lever is in an intermediate position, but will go perfectly well when the spark is either fully advanced or fully retarded. Directly I put it back, however, to an intermediate position the trouble begins. The curious thing, however, is that in fine weather the motor—a 6-h.p. De Dion—gives no trouble; it is only in wet weather that it starts its tricks. If you or any of your readers can assist me in locating the cause I shall be extremely obliged.—Yours truly,

PLUVIUS.

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am one of those who are tired of pneumatics. It is all right talking about "puncture proof bands," etc. I have had only three punctures and two bursts in a year, but every time I have gone out with the car I have had from three to six tubes to replace. Fancy six tubes going down in one afternoon, and they talk of the pleasures of motoring! I never did so much work in my life in a year. What is to prevent the loosening of patches caused by the heat—patches which

the ball races are in good order, the trouble of broken balls will disappear.—Yours truly,

WOLSELEY CAR.

WHAT IT COSTS TO KEEP A CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

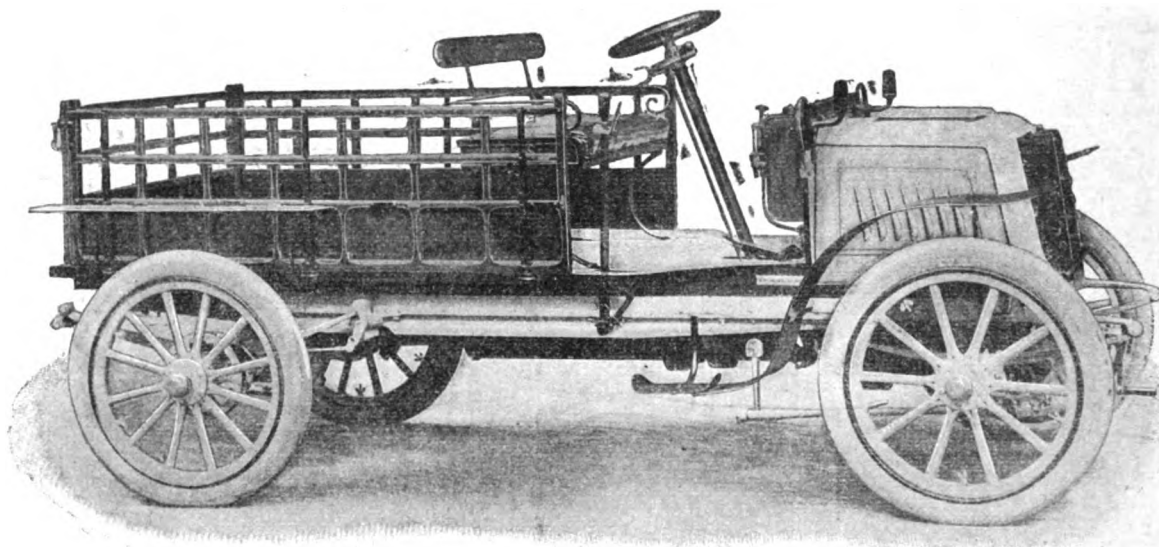
SIR,—As an interested reader of the *Journal*, but one who is not yet the proud possessor of a motor-car, I venture to ask those who have had experience to let you have for publication in these columns particulars as to the expense of running and upkeep of a small automobile. I believe there are many motorists who keep a record of their motoring expenses, and if only they will allow the same to appear in print it might assist many who are at present waiting to make the plunge. In order to prevent any invidious comparisons between different makes of cars, the name of the type need not be given. Nowadays all high-grade cars, I believe, can be relied upon to give good service, and if the cost of the car, horse-power, number of cylinders, speeds, chain or cardan drive, size of tyres (pneumatics or solids) were mentioned, these would form sufficient guidance to would-be motorists.—Yours truly,

J. W. MOORHOUSE.

THE STORAGE OF PETROLEUM.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In looking through the regulations with reference to the storage of petrol, "Petroleum (Motor Cars) Regulations, 1903," which came into force on the 18th March, 1903, it seems to me that it is necessary, under Regulation 7, to give notice to the local authority if one



The Darracq 12-h.p. Motor Lorry. (See page 970.)

have been properly done with the best of material, not amateur patches. Owing to friction I have had the pleasure of putting four or more patches on a tube which had been partly melted off on many occasions. No more pneumatics for me! I am having solids put on the wheels, and if they damage the car much, then I shall think it time to give up motoring. What about the "Rossel" spring wheel? Is any British firm going to take it up? In my opinion pneumatics are doomed; they are good for bicycles, as I have found, but for cars they are really absurd.—Yours truly,

PNEUMATIC SICK.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Roller Bearings," in your issue of January 23rd, I feel sure that the broken balls in his Wolseley car are not caused by the use of solid tyres, or, at any rate, with a scientifically designed section, but more likely caused by the ball race being allowed to become worn. The condition of the ball race can generally be judged by jacking up and spinning the wheels, and if the same do not revolve sweetly—that is to say, if there is a peculiar rumbling noise—it is a sure sign that the bottom of the ball race has become scored, which soon causes the balls to get out of shape; if, therefore, car owners would more often look to their wheels instead of running until something happens, there would be no trouble on this score. I have had three cars running with Sirdar buffer solid tyres for something like two years past, and have 3-inch high speed buffer tyres fitted to the driving wheels of a 24-h.p. Wolseley with pneumatics on the front wheels; with this combination the speed up to thirty miles an hour is quite comfortable. With all the three cars I have not had a single case of a broken ball, although the cars are in constant use, and I feel sure, if "Roller Bearings" would try these, and occasionally see that

stores petrol in a building within twenty feet of a house. This regulation is as follows:—

"Any person who keeps petroleum spirit in a storehouse, which is situated within twenty feet of any other building, whether or not in his occupation, or of any timber stack or other inflammable goods not owned by him, shall give notice to the local authority under the Petroleum Acts for the district in which he is so keeping such petroleum spirit and shall renew such notice in the month of January in each year during the continuance of such keeping, and shall permit any duly authorised officer of the local authority to inspect such petroleum spirit at any reasonable time. This regulation shall not apply to petroleum spirit kept in a tank forming part of a light locomotive." A "storehouse" is defined to mean any room, building, coachhouse, lean-to, or other places in which petroleum spirit is stored. As this is a point which I do not remember having seen referred to in any of the motor papers, I mention it so that owners of cars and cycles, many of whom must store their petrol in buildings within twenty feet of their houses, may give the necessary notice to their local authority.—Yours truly,

A.O. 33.

TELEPHONE WIRES AND THE CHARGING OF ACCUMULATORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having twin lead covered wires connecting two telephones, using dry batteries, would it be possible to pass a current of 100 volts over these wires, for charging motor ignition accumulators? If I connected on to the lead covering with the negative from the two telephones, and used the wire so freed for the negative return to source of 100 volt supply, would the positive 100 volt lead which I propose to connect to the lead

still in connection with the telephones interfere with their working? If this is not practical, how could I get over the matter without using separate wires, and not put an earth on the 100 volt supply? The telephones are of the private installation type with a small generation for ringing up, made, I think, by the General Electric Company.—Yours truly,

S. C. C. VINE.

[The telephone wires could be used for passing a current of 100 volts pressure to charge motor ignition accumulators with the following disadvantages:—First, if the insulation of the wire is not very good the 100 volts between the lead outer and the copper inner wires might break down the insulation and produce a partial short circuit. Second, the lead wire being connected to the 100 volt supply would certainly put an earth on the circuit; if the supply is a private one, these points would not signify, provided fuses were placed in the circuit and a double switch to cut off when not in use. If the supply is a public one, it would be contrary to the regulations to do it.]

BURNT GASES AS A MOTIVE POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to the query of your correspondent, H. M. J., in the last issue of the *Journal*, I may inform him that for over a year I have been working on exactly similar lines to his suggestion, and that some months ago I took out a patent for this method, along with some very important additions which have become obvious in the course of experiments.—Yours truly,

HAROLD C. READING.

HOTEL CHARGES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Respecting your reference to hotel charges in the last issue of your valuable paper, may I give, for the benefit of motorists (more especially motor-cyclists, for I am one of them) who pay a visit to Windsor, the details of my bill after putting up at a leading hotel for a snack for two persons:

	s.	d.
2 Steaks...	5	0
2 Coffees ...	1	0
1 Ginger beer ...	0	6
Attendance ...	1	0
Garage (tri-car) ..	1	0
Tips (optional, of course) ...	1	0
	9	6

Although this was at a good hotel, they have yet to learn modesty in their charges.—Yours truly,

OWEN JOSEPH.

THE MOTOR CAR ACT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—My view of the Act is that something stringent was required for the "cads" on the road. I also think that as yachts go scot free from taxation, not only as regards the vessel but also as regards the men (servants) employed on same, and the registration, motor-cars are somewhat hardly dealt with.—Yours truly,

R. L. CURTIS, JUN.

THE MATERIAL FOR PETROL PIPES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I note on page 913 of your issue of January 23rd, a report of a meeting held by the Institute of Marine Engineers, at which a paper on "Marine Petrol Engines and Motor Launches" was read by Mr. O. Sumner. In this it is stated:—"He would like to make it clear that a lead pipe should always be used for the conveyance of petrol from the tank to the vaporiser." Would any of your correspondents kindly inform me the reason that this is so, as I am greatly interested in this kind of thing?—Yours truly,

GREENWOOD.

THE POLICE AND TRAFFIC.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the collision near Patcham, as a resident on the road itself, will you kindly allow me to say a few words? The police, especially one sergeant who left some eighteen months ago, have been very strict on motorists, unnecessarily so at times, and not strict enough on the horse traffic. The village itself demands care in passing through, the road being narrow and curved, and frequently quite a line of cabs, etc., will be found drawn up outside the "Black Lion," leaving practically only room for one vehicle to pass. It is quite a common thing to meet after dark furniture vans and other lumbering vehicles without the slightest vestige of a rear light, or a front one, and on three afternoons per week, Brighton market days, between Patcham and the "Plough" at Pyecombe, it is usual to have to try and pass some two or three dozen of market carts, ambling along in the middle of the road in twos and threes, with a goodly proportion of the drivers fast asleep.—Yours truly,

C. D.

TWO AND FOUR CYCLE ENGINES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be glad if you or any of your readers could give any information on the following points:—Has a two-cycle engine the same power as a four-cycle engine of the same bore and stroke? Can a two-cycle engine be run as fast as a four-cycle engine of the same size?—Yours truly,

W. J. FIELDING.

[It is not possible to obtain the same power from a two-cycle engine as from a four-cycle, both of the same bore and stroke, and running at the same speed, but the two-cycle engine can be run at a higher speed and thereby develop the same power. The deficiency of power is due to the impossibility of such a high compression as in the four-cycle, thereby giving a much weaker explosion. In running the engine at a higher speed its wear is very great, and against the principles advocated by almost all makers.]

DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I quite agree with H. Hart, with "Chameleon" and with "Driver" as to boys with a week's tuition as drivers. But let me state a fact. When employed in the repair shop of one of our leading manufacturers I had occasion to witness a driver employed by the firm's agent taking a car from the works, which had been overhauled.

He accelerated, and when the engine was racing as merrily as ever it could, he clutched without taking his foot off the accelerator and starting on the third speed. The result was, that he started off like a shot and narrowly missed upsetting the car, having to take a V-shaped corner, when he applied both brakes with a vehemence that left me wondering how it was he had a differential gear left to go home with. I went to the agent and applied for a driver's berth. Although I had been in the firm's repair shop during four months and have served my time as a mechanic, I was told that my driving capabilities were not good enough to be entrusted with a car. I had not been tried and no references were taken up.

Well, by what I saw of not only that one, but of others of that agent's drivers, I am still wondering how they managed to find employment there.—Yours truly,

NONPLUSED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I agree with Mr. Edge. If good men were easy to get one would not find that the car driven and cared for by the owner runs at a great deal less per mile than the chauffeur-driven one; and also I notice that the owner-driven-and-cared-for one is ever ready to come out! Is it a recognised custom for private motor-car drivers to receive and ask for commission on all purchases paid for by them, such as petrol, spare parts, oil, plugs, &c.? I hear it is common, and I think it must be, as a friend of mine, after driving many miles in the mud and wet, entered a motor place and asked for four gallons of petrol and two spare plugs and a receipt—he kept motor-running accounts. He got it all including the receipt, and the man said, "Here is your lot," and handed him 1s. 6d. Receipt was in full.—Yours truly,

OWNER.

DRY BATTERIES.—Replying to "Novice," the Ideal dry battery is made by the Ideal Electric Company, 78, York Road, King's Cross, N.

DE DION MOTORS.—Replying to Mr. M. Brown, the cylinder dimensions of the 3½-h.p. De Dion motors are 80 mm. bore by 80 mm. stroke.

THE DE DION-BOUTON WORKS.—Replying to "L. W. B." and "A. W. S.," the booklet on the De Dion Works, referred to in our last issue, is printed in French, and is published by M. J. Barreau, 16, Rue Littré, Paris. The price is not stated.

THE MONARQUE MOTOR.—We have an enquiry for the name and address of the makers of the Monarque motor-cycle engine. Should any of our readers have the information, perhaps they will communicate with us.

ALCOHOL FOR MOTOR-CAR USE.—In answer to the enquiry as to obtaining alcohol for running motor-cars, the Jones Haulage Syndicate, of Whitacre Heath, Warwickshire, inform us that they have been experimenting with the same for use in their agricultural motors, and that they will shortly be in a position to supply same on a commercial scale.

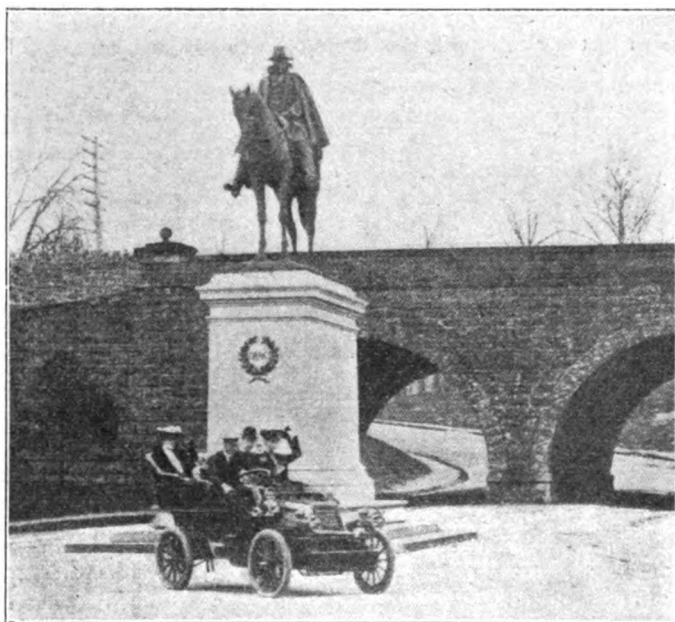


CLUBS AND ASSOCIATIONS.

LEICESTERSHIRE.

THE first annual dinner of the Leicestershire Automobile Club was held on Monday at the Bell Hotel, Leicester. Mr. E. George Mawbey, M.Inst.C.E., took the chair, and amongst the company, numbering nearly fifty, were Colonel L. L. Powell, Mr. T. W. Lumley (chief constable of Leicester), Mr. H. A. Hamshaw, Dr. Hewlings, Dr. Mason, and Dr. West. After the loyal toast had been honoured, Colonel Powell proposed, "The Club and the President." The chairman responded. That was the first year of its existence, and it had been attended by a considerable degree of success. Having referred to the great strides automobilism is making in the country, the chairman went on to speak in eulogistic terms of the Leicestershire roads. Mr. H. A. Hamshaw gave "Kindred clubs and the visitors." Mr. T. C. Aveling, of the Birmingham Club, whose name was associated with the toast, replied, and pointed out that it would be necessary, in a year or two, for the affiliated clubs to employ a paid secretary instead of a honorary secretary, if the work was to be carried out in a satisfactory manner. The Chief Constable of Leicester also responded, and wished the club success. It rested with the members themselves, he said, whether automobiles became popular or not. Automobilism had undoubtedly come to stay, and he assured them that both he and the members of the force were anxious to help motor-car drivers.

The Chairman heartily thanked Mr. Hubbard and Mr. McAlpin for their efficient work as secretaries during the year. Mr. Hubbard had been advised by his doctor to discontinue car driving, but for all that he had decided not to sever his connection with the club.



A Snapshot in Fairmount Park, Philadelphia.

MIDLAND.

THE second annual dinner of the Midland Automobile Club took place on Saturday at the Grand Hotel, Birmingham. In the unavoidable absence of the President, Mr. J. Broughton Dugdale, J.P., the chair was taken by Mr. Ballin Hinde, and amongst those present were Messrs. Tangye, J. Holder, H. Holder, O. Harmer, H. Austin, Fred. Lanchester, E. Instone, P. V. Vernon, J. Milburn, and A. J. W. Millership.

The toast of the visitors was proposed by Mr. C. V. Pugh, and suitably responded to by Mr. J. C. Percy. The Midland Automobile Club was proposed by Mr. Hamilton, Barnsley, and responded to by the hon. sec., Mr. Thos. C. Aveling. A presentation was made to Mr. F. Lanchester in connection with his recent marriage. Mr. Rees Jeffreys responded to the toast of the A.C.G.B.I.

NEWCASTLE.

A MEETING of automobilists was held at the Station Hotel at Newcastle-on-Tyne last Saturday, when Captain H. S. Streatfield, of Ryhope, who presided, gave a lucid resumé of the new Act, and of the means already adopted by the Motor Union and other authorities to safeguard the interests of motorists. It was unanimously decided to form a district branch of the County of Durham Automobile Association in the north-western portion of the county. Mr. A. Wood, of The Hermitage, Chester-le-Street,

was elected president; Captain W. C. Blackett, of Sacriston, vice-president, and Mr. F. Herbert, Birtley, R.S.O., hon. secretary; these three gentlemen, together with Mr. P. T. Smith, of Coldpike Hall, Lanchester, and Dr. Cox, of Bensham, were appointed to act as a general committee. An influential body of members were enrolled, and the chairman impressed upon those present the necessity for careful driving, especially in congested areas such as Sunderland, where the authority had declined to sanction any irksome restrictions, but relied upon the discretion and judgment of motorists, and the opinion was very generally expressed that this confidence should be respected. A hearty welcome was extended to motor-cyclists and others interested in mechanically-propelled vehicles, and the subscription fixed at a merely nominal amount in the hope that all local automobilists will at once communicate with the hon. secretary.

CLAIM FOR DAMAGES DISMISSED.

At the Manchester Assizes Mrs. Bagot claimed £500 for injury and loss suffered through the negligent driving of a motor-car by a servant of Mr. Riley of Blackpool. Negligence was denied, and the defendant pleaded contributory negligence on the part of the plaintiff. Her case was that she was driving a trap, in which two other ladies were seated, from Blackpool to Poulton on the night of the 23rd October last, and that near a bend of the road she was met by the defendant's motor-car, driven by his servant, when it dashed into her trap, and the wheels of the two vehicles got locked together. After the collision efforts were made to get the vehicles apart; this was successfully accomplished, and immediately the separation took place the wheel of the plaintiff's trap fell to pieces, the plaintiff fell out, and the trap rolled over upon her as she lay on the ground and injured her severely. Mr. Taylor, K.C., said the defendant's case was a direct contradiction of that presented by the other side. The defendant gave evidence to the effect that the car was a light one, only $4\frac{1}{2}$ horse power, and incapable of travelling more than twelve miles an hour. Several witnesses, including residents in the neighbourhood, who came upon the scene after the collision, and had opportunities of seeing the position of things, bore out the view put forward on behalf of Mr. Riley. The jury, without leaving the box, found a verdict for the defendant.

ALLEGED FURIOUS DRIVING.

PROFESSOR HUNTINGDON, of King's College, London, was summoned before the magistrates at the Hove Petty Sessions for driving a motor-car to the danger of the public on the London road, Patcham, on January 23rd. E. Penfold, brake driver, said that about 5.15 p.m. on the day in question he was driving a brake and pair. When near Patcham he saw a motor-car driven by the defendant approaching on the wrong side of the road. Witness thought he was going straight for the horses and pulled up close into the gutter. The car then turned off towards its proper side, but immediately came back and ran into the off-side horse and the side of the brake, the pole being snapped, the under carriage damaged, and the horse injured. Dr. Gilkes said he did not remember seeing any other lighted vehicles, except the car, on the road. The defendant declared that it was so dark at the time that he did not see the brake until close to it, there being no lights on it. Considering the conditions then prevailing, he thought no vehicle ought to have been on the road without a light. If there had been a light on the char-a-banc he would have seen it a considerable distance away. The Bench imposed a fine of £10 and £1 14s. costs.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editor's hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.

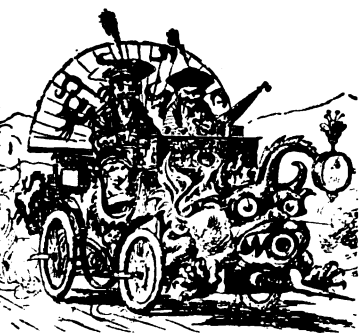
VOL. V.]

LONDON, SATURDAY, FEBRUARY 20, 1904.

[No. 259.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



JAPAN, full of the modern spirit of advance, is reported to be about to adopt the automobile in the army, and we can scarcely credit the report. Probably, like many other eastern rumours, it has little foundation in fact. On more substantial ground, however, it may be declared that the wealthier classes of the Japanese community are taking an interest in motoring. The fact that an American who has been a resident for the last half-dozen years has returned to New York on the look-out for agencies is significant evidence of the demand that is likely to arise when the present trouble subsides. Every country of the world is recognising the automobile.

The Darracq Racers for the British Gordon Bennett Team.

SOME surprise was caused when among the entries for the eliminating contest for the British team for the 1904 Gordon Bennett the name of Messrs. A. Darracq and Company appeared. As is now fairly well known, this is an English company with works at Suresnes, near Paris. One of the conditions of the International Cup Race is that the competing cars must be entirely constructed in the country they represent in the event, and much discussion has taken place as to where the British Darracq racers were to be built. From a reliable source we learn that the work has been entrusted to an old-established firm of engineers in the North, Messrs. G. and J. Weir, Limited, of Cathcart, Glasgow. The vehicles will of course be built in accordance with plans furnished from the French works, and we may further add that their construction is to be supervised by Mr. Pullinger, of Messrs. J. Marston and Company, Limited, the designer of the "Sunbeam" car.

Automobiles and the Post Office.

WHILST the postal authorities of the Mother Country are still making a few local experiments with regard to the utilisation of the automobile in the postal service, some of the colonial postmasters are showing considerably more enterprise in the matter. We hear that the Federal Postmaster-General of Australia is endeavouring to establish a motor mail service in Tasmania, and that the Melbourne authorities will shortly seek quotations for suitable motor vehicles both in Europe and America. It is to be hoped that in this connection the names of British makers will not be overlooked.

Presidency of the A.C.G.B.I.

SPECULATION is rife with regard to the presidency of the A.C.G.B.I., and names are being freely bandied about irrespective of the real claims of their owners to such a distinction. The occupant of such an office will not only require tact, influence and experience, but he must be a man aloof from the controversies that have lately raged in Piccadilly.

Clear of trade associations, he must, nevertheless, be one who is acquainted with the industry from a broad point of view. Recognising the essential character of these qualifications one name occurs to us, as it will to many others, as likely to command respect and add dignity to the Club government. In the days before automobiles were legalised on the public highway, Sir David Salomons was a friend and advocate of the light locomotive. He assisted the passage of the Emancipation Act through both Houses of Parliament, and he organised the motor-car meet at Tunbridge Wells, which first drew general attention to the automobile in this country. Since then, as chairman of the Foreign Relations Committee of the A.C.G.B.I., he has won international renown, and, altogether, Sir David is a man whose election to the Club presidency would give that organisation a higher prestige abroad and an added credit at home.

Covered Van Regulations.

SIR THOMAS DEWAR, M.P., has been congratulated by many members of Parliament on the promising success of his advocacy of some legislation to abate the dangers of covered vans in London traffic. With the class of vehicles now in use the dangers exist during the operations of turning corners and crossing streets at spots where several roads meet. The necessity for reform in the present regulations can be realised when it is noted that during the past two years no fewer than 3,500 accidents caused by this kind of vehicle occurred in the streets of London, and out of this number seventy-six were attended with fatal consequences. The bye-law which comes into force on May 1st next requires that all vehicles shall be reconstructed in a way which will permit the driver to have a full and uninterrupted view of the traffic in front and abreast of him, and that no person shall drive any vehicle upon a public highway who is not in a position where his view is unobstructed.

Reviving an old Agitation.

AT the luncheon held in connection with the opening of the Motor-Car Show at the Crystal Palace on Saturday last, Lord Stanley, in proposing the toast of the automobile industry, declared himself a motorist with something akin to enthusiasm for the sport. Then he proceeded to a defence of the Parliamentary party which was hastily formed in connection with the agitation for motor legislation last year. It was rather a pity he should have revived this matter, for all who took part in that premature attempt at solving a great problem would doubtless prefer to "let sleeping dogs lie." The Parliamentary party have very little to congratulate themselves upon, and no after-luncheon speech from Lord Stanley or anybody else will ever induce motorists to believe that they have so very much to be grateful for from the legislation of 1903.

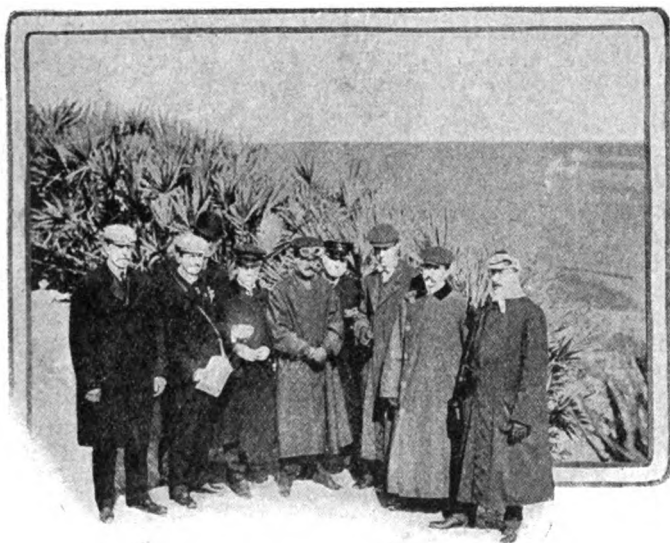
Needless Vexation.

ALREADY in many parts of the country motorists are finding that the legislation which was to place them on an equality with all users of the road is somewhat of a delusion. Not only are the police keenly criticising the speed of vehicles and maintaining the traps, which were such a bad feature of their policy last year, but the way in which many are exercising

their right to call upon drivers for the production of licenses is becoming something of a nuisance. We hear of several cases where fully licensed drivers have been constantly stopped and asked for the production of their licenses, apparently without any reason whatsoever. Then, too, the enthusiasm with which the police are hauling before the magistrates those who, according to their calculation, are going slightly over the twenty miles limit, is certainly not carrying out the spirit of the first section of the Act. We would ask those in authority not to fancy that everyone is satisfied with the present position, and not to imagine that none would desire to go back to the old condition of things. The truth is that motorists are not confident as to the impartiality of the administration of the law, and cannot help feeling that the police and magistrates are often too closely associated to secure fair play.

Toleration, not Satisfaction.

IN fact the position of the motorist is not a happy one just now. Firstly, the weather has been against him and has turned the dry land into a series of running streams or continuous mud banks; secondly, the police are as watchful as ever; and thirdly, the severity of the magistrates has been in no way relaxed. Such a triple combination is enough to



Mr. W. K. Vanderbilt, jun., in the Centre of a Group of Officials at the Florida Race Meeting. (Motor Age.)

harden our hearts against all forms of motor legislation; but, like the Israelites when urged to flee from Pharaoh, we feel inclined to suffer present ills rather than encounter further possible ills we wot not of. Hitherto, legislation—save the happy stroke of 1896—has been unkind. It is now tolerated because of the fear that any change may be for the worse.

A Motor in a Novel.

WHY do people utilise the motor-car as an excuse for novel writing? We can forgive Mrs. Kennard and be equally sympathetic to Mrs. C. N. Williamson, because both have already won their spurs—a metaphor perhaps out of place in the *Journal*, but it will serve—but when every other writer introduces an automobile merely to run it down, or rather to allow it to run somebody down, we become somewhat hard of heart. Now here is Mr. R. W. Bradshaw Needham writing a short novel with the long title of "A Man and a Motor and subsequently a Wife." Doubtless his intentions were entirely amiable, but why talk of a girl being "architectonised on the right lines?" Still, with all its faults of this kind, the book is not without interest, and in the latter chapters are some well-told incidents of motoring in Surrey. And thus the critic's promised wrath is assuaged, for a pleasant hour may be spent with such a

genial author as Mr. Bradshaw-Needham. The book is published by the Clements Publishing Company.

Level Crossings.

SHOULD the weather ever again become dry and reasonable—and it can hardly continue its unseasonable dampness much longer—motorists will be upon the road in greatly-increased numbers. Attention may therefore be called, not for the first time, to the dangers that lurk in the level crossings that are found wherever the railway has been established. The point occurs to us with all the more emphasis in view of what has recently happened on the Cleveland and Portishead Light Railway. On the level crossing at Weston, a collision occurred between a train and a wagonette. It was ascertained at the inquest on the bodies of the two people killed, that the railway company had fulfilled all their obligations as required by Act of Parliament. But more is wanted, and motorists would like to see all level crossings indicated by some general mark of identification, so that they could be made aware of the proximity of such a crossing, even before reaching it.

Motor-Car Fees.

No less than £283 has been received by the county authorities of Stafford in fees for the registration of cars and the licensing of drivers. Other counties have been even more fortunate, and there is no doubt that the Motor Car Act has opened up a new avenue of revenue for local authorities. It is to be hoped that the money thus obtained will be usefully expended in improving the roadways, especially in districts which have been long neglected in this respect.

Thorns on the Wayside.

TROUBLES are frequent enough on English roads without their number being increased by thorns bestrewn in the path of motorists and those who travel. At the West Malling (Kent) Petty Sessions a man named Little has been summoned for laying hedge clippings on the highway. The defendant said they were clipping the hedge three days, and cleared up every night. If he was convicted every farmer in Kent ought to be prosecuted. The Bench convicted, and imposed a fine of 5s. and costs, which should prove a salutary warning "to every farmer in Kent." Publicity should be given such cases wherever farmers are negligent of their duties. Thorns in tyres are no joke.

Universal Lighting of Vehicles.

AT the present time Mr. Rees Jeffreys is preparing a report for the Motor Union as to the advisability of initiating legislation for the universal lighting of all vehicles upon the public roads. It is being forced upon motorists very keenly that the time for such an advance in legislation is coming, and that any proposals in that direction would have a large measure of practical sympathy in the House of Commons. Frequently have we heard of cases where vans and carts lumbering along the highway unprovided with lights constitute a menace to the public safety. Some motorists are serving the public interest by prosecuting such offenders, but more definite and stringent legislation is essential.

Drivers.

THE correspondence that has been running in our columns for the past month on drivers shows no slackening of interest, and it is evident the subject is one upon which there is much to be said on both sides. It is clear that there is a great deal of prejudice against the employment of young drivers, while others would urge that as mechanics they are unequalled. But the private owner wants something more than mere driving. He wants his motor to run as smoothly and

economically as is consistent with comfort and the enjoyment of the pastime. To secure that end, the man he employs should have some mechanical knowledge and a good deal of common sense. The possession of the latter quality is a decided advantage, even to the driver of a motor-car.

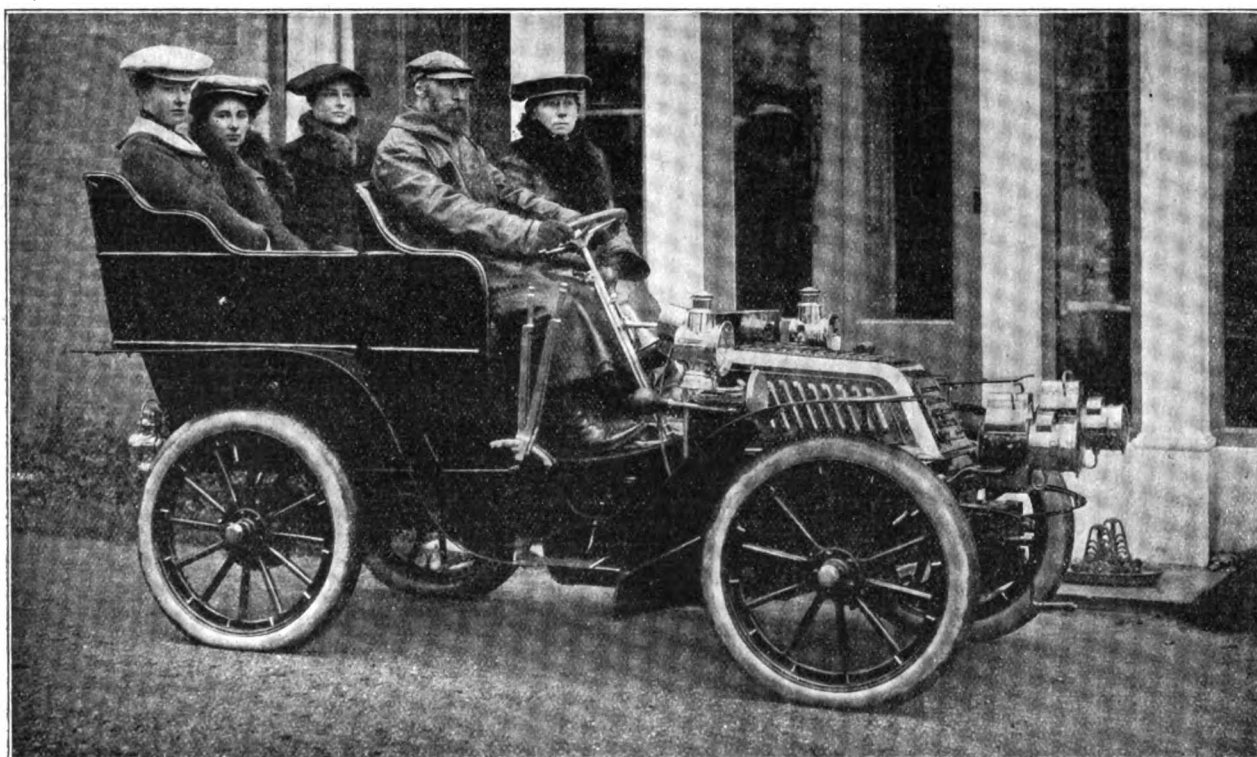
Alcohol v. Petrol.

RECENT experiments made in this country by a firm interested in the development of agricultural motors lead to the hope that ere long alcohol may be obtainable on a commercial scale, and cars propelled by alcohol-spirit may be seen on English roads. Ireland has been looking forward to such an event with considerable interest, and the Department of Agriculture there has promised its hearty co-operation in any scheme for obtaining alcohol for motor-cars in that country. Makers of motor-cars can assist the agricultural industry in more ways than one.

sible, that unless small presents are made no purchase is likely to result. Two or three exposures of such methods would do considerable good and help to place the trade upon a more satisfactory basis.

Military Motor Trials.

DURING the last few days some important trials of the capabilities of motor lorries have been carried on in the vicinity of Edinburgh, by officers of the Royal Engineers. By means of barrels of water and heavy pieces of iron, with loaded sacks on the top, the total weight of the lorries was made up to seven tons; which, as the bodies of the vehicles are 10 feet 6 inches long and only 4 feet 3 inches wide, had to be piled up to a considerable height, thus constituting a good test for the springs, owing to the swaying of the load when passing over irregular ground. Thus loaded, with some half-dozen officers and engineers from Messrs. Stirling's works, perched upon the top, the vehicles, with their ponderous wheels, presented a



The Rev. A. C. Hervey and Family, of Alton, Hants, on their 10-h.p. Beaufort Car.

Commission.

THE private gentleman who suggests to a friend the name of a motor-car, and then, should a purchase take place within anything like a twelvemonth, goes to the maker and demands commission, is one of the creatures who ought to be fired out without delay. A dealer who had disposed of a car to a total stranger a few weeks ago has just received requests for commission from two private persons, and also from a couple of agents, every one of the quartette being equally emphatic as to the part he had played in influencing the purchaser with regard to that particular car. The only way by which this can be effectually stamped out will be for the makers and their agents to emphasize very clearly to the purchasers their position in the matter, and then be equally firm in resisting any attempts at what is really a subordinate form of blackmail. It would appear also that there is need for a note of warning against the so-called "expert," who, requested by the budding motorist to advise him as to the merits or demerits of a particular car, goes to the showroom gently intimating in as quiet a manner as pos-

striking appearance. A large board on the rear of each vehicle displayed in bold white letters the words "War Department," and the machines were painted khaki colour. One day a distance of forty-two miles was covered at a rate of nine miles an hour, and on other occasions satisfactory tests were made up various steep hills, while the crossing of a football field, made slippery by recent rains, was successfully performed by the vehicles.

Motor-Car Imports and Exports.

As compared with a year ago, there is a falling off in the importation of foreign motor-cars and cycles into this country. In January 335 cars valued at £120,772 were imported, together with 51 motor-cycles, estimated at £3,746, the combined total of £124,518 contrasting with £167,112 in the first month of last year. As regards the exports of British automobiles, these last month amounted to 55 cars, valued at £28,636, and 78 motor cycles estimated at £3,619, giving a combined total of £32,255, as compared with only £16,876 in January, 1903.

Free Men or —!

"AND who would be bondsmen in the land of the free," sang a poet of old, little anticipating that in the Twentieth Century an attempt would be made to hold a new industry in an adamantine grip of bondage. Automobilmism, having freed itself from the shackles of the law—so far as total prohibition on the roads was concerned, is not likely now to be handcuffed in such a way that no movement can be made without risk of breaches of agreements or fears of forfeits. Members of the trade are free to exhibit what they like, and where they choose; not many are inclined to place themselves in a noose leading them whithersoever their fellow-bondsmen may wander.

Coercion Must Fail.

ANY such attempt to restrict the actions of those engaged in a growing and expanding industry must fail, although it might have succeeded in the Middle Ages. This year's experience amply proves that no two halls in the United Kingdom are capable of accommodating all the firms anxious to exhibit automobiles and the various accessories connected therewith. At the Agricultural Hall, although it covers a ground floor area of nearly five and a-half acres, it will be difficult to find space for all applicants, in spite of the added area gained by the extensive galleries with their three rows of stands, King Edward's Hall, the Minor Hall, North Annexe, Berners Hall, etc. With this fact in mind enterprising firms are likely to maintain their position of freedom and their right to do what they consider best in their own interests.

British Automobilmism.

DURING the discussion on the paper by Mr. Aveling, summarised on another page, the Hon. C. S. Rolls said he hoped that British manufacturers would be able to prevent importations from increasing in the same ratio as had been the case in the past. Several firms were now turning out from three to five hundred cars per annum, and he knew of one that was arranging to turn out 1,500 cars this year. Mr. Napier said it was unfortunate that the petrol car was taking up so much attention, to the neglect of the heavy oil car. He himself had made some experiments with oil, and had found he could run his car just as well on naphtha as with petrol. The petrol he got was about .72 sp. g., and he first of all tried a mixture about half and half, from which he obtained perfect results. Then he tried the pure naphtha with equal success, and had run about 250 miles on nothing but naphtha. He never had a dirty sparking plug, and the fuel only cost him 6½ a gallon. Sir John Macdonald, who presided, concluded the discussion by moving a hearty vote of thanks to Mr. Aveling, which was unanimously adopted.

Affiliation.

ON Monday an important conference of automobile clubs was held at the A.C.G.B.I. to consider the affiliation question. Dr. Walters (Reading), Captain Streatfield (Durham), Captain Cole (Lincolnshire), Mr. F. B. Cawood (Sheffield), Mr. S. R. Rhodes (Wolverhampton), and other representatives of important provincial clubs took part in the discussion, and ultimately it was agreed to accept the three schemes submitted by the A.C.G.B.I. with some minor amendments. These are best understood from a speech made by Mr. Roger Wallace during the conference to the effect that some bodies preferred to have the "Club Journal," as well as become members of the Motor Union—they paid 10s. 6d.; others did not want the "Journal," but desired membership of the Union—they paid 5s.; the funds of other bodies, such as motor cycling clubs, would not allow them to affiliate, or they did not want to affiliate, but they desired membership of the Union—they paid 2s. 6d. The schemes had been arranged with the idea of meeting all classes, and so to get everybody together.

No More Lists of Police Persecution.

AFTER publishing for more than a year a weekly list of cases of motorists charged with furious driving, *The Motor-Car Journal* has decided to abandon that special feature of its pages. Prejudice against motorists still exists on the magisterial bench, as is apparent from the heavy fines which have been inflicted in the cases heard this year, and the way in which magistrates have threatened to inflict severer penalties on a repetition—or alleged repetition—of offences. In taking this step the *Journal* does not in any way lessen the warning already given to motorists to recognise existing regulations, but does not, at the same time, intend to assist the system of persecution which is unhappily feared in many quarters.

The Motor Trade of London.

COMPARED with the automobile establishments that did service in the early days of the movement, present-day premises devoted to the purpose show an improvement that would have seemed impossible five years ago. The great garage of Messrs. Friswell, the well-ordered premises of Messrs. Milnes-Daimler, the showrooms of the Lacre Company, and the facilities offered by the Locomobile Company at their Sussex Place garage, are evidences of the changes that are taking place. Firms are rightly recognising the necessity for organisation and systematic superintendence in garage and repair work, and recent developments in the Metropolis prove that the automobile trade of London is well capable of sustaining the reputation of the capital city of the Empire.

Automobile for Official Uses.

AT Hartford, in the United States, the local authorities have long utilised the motor-car in official work. Three years ago a new police van, propelled by electricity, was purchased, and a twelve-month later an automobile ambulance was also placed at the city's service. Recently we hear that a motor vehicle has been obtained with two bodies, available for police and ambulance work respectively, so that now the one car is able to do the work which originally required two separate vehicles, each with different teams of horses. It is said that the actual cost of the vehicle, exclusive of course of driver, etc., is only twelve dollars a week, and as it has the advantage of being available at all hours of the day, the development of the automobile in Hartford has been a distinct economy for the people of that place.

THE Cannstatt Automobile Supply Association claim to have received the first 1904 model 18-28-h.p. Mercedes car. The speed of the vehicle is said to be 20 per cent. greater than that of the 1903 model.

Up to the 11th inst., 960 automobiles had been registered by the County Council of Surrey, of which 522 were motor-cars and 438 were motor-cycles. 1,350 licences to drive have been issued in the same county.

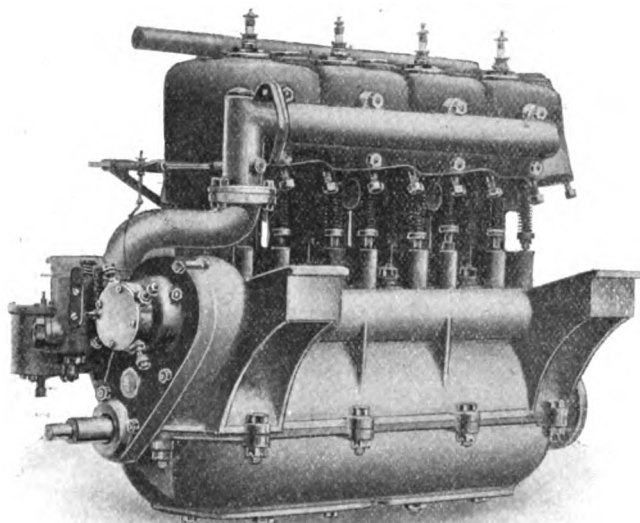
PRINCE and Princess Alexander of Teck, who left England for Cannes on Monday, paid a visit to the Duke of Cambridge on Sunday, using the motor-car which the Earl of Shrewsbury presented to Prince Alexander on the wedding day.

RUMOUR has it that the eliminating trial to select the British team for the Gordon Bennett Cup race may be held in the Isle of Man. On another page we give some information with regard to the automobile regulations in the island.

THE Automobile Club of America has decided to hold the first of the eliminating tests for the American team for the Gordon Bennett race in New York on April 15. These will be of a technical nature, and will be followed within a week or ten days by speed trials on the beach at Ormonde, Fla.

THE CORONET FOUR-CYLINDER PETROL MOTOR.

THE accompanying illustration shows a new four-cylinder petrol motor which has just been brought out by the Coronet Motor Company, Limited, of Coventry. As will be seen, the cylinders are separate castings with their water jackets and have a bore of $3\frac{3}{4}$ in., stroke $4\frac{3}{4}$ in. The normal speed is 1,000 revolutions per minute, at which the average power developed on test is 20-22-h.p., increasing to 25-27-h.p. at a speed of 1,400 revolutions. The inlet valves, as well as the exhaust, are operated by one cam shaft which runs with its gear wheels continuously in oil in a dust-proof case. The cam shaft is so arranged that it can be withdrawn, if necessary, without removing either inlet or exhaust valves. The mixture is supplied by a specially designed float-feed carburettor, the jet of which can be inspected or removed without uncoupling any parts. The engine is governed on the admission by a novel form of throttle box, for which patents are being applied for. The governor is located in the same oil bath and dust-proof case as the cam shaft gear wheels. The crank bearings are of good diameter and length and a bearing is fitted between each throw of the crank. Two large inspection plates are



fitted to the lower half of the crank case. The end of the cam shaft is left so that magneto ignition can be fitted if desired. The ignition plugs are placed in the induction valve caps, and the makers inform us that in practice they can run with as much as half a gallon of oil in the crank case without interfering with the sparking. Complete, the motor, as illustrated, weighs 315 pounds.

A MOTOR-BOAT section is being formed in connection with the Belgian Automobile Club.

THE Los Angeles Automobile Club has offered to supply temporary mile posts, to be erected between Los Angeles and Fernando and between Los Angeles and the city of Pomona, California, if the county authorities will bear the expense of erecting them. The club has also offered to provide permanent posts, to be made of concrete. Each of these artificial stones will be five feet high, one foot wide and six inches thick. The Automobile Club is particularly anxious to have these two "runs" marked off so as to permit of the use of the roads during the present season, in which case automobilism is expected to receive a great impetus. The Highway Commission regards the matter with favour, and it is considered certain that the Board of Supervisors will accept the Club's propositions.

THE MOTOR CAR ACT.

Charge for Dealers' Marks.

A firm in Sussex who as dealers only registered one car write pointing out that a large firm in London or Coventry, with several vehicles used in the course of their business, would have to pay only the same registration fee as the smaller dealer. This seems somewhat unfair to the latter, and it is a pity that a scheme of graduated fees was not adopted. At Wolverhampton the small dealer has been considered, and a charge of £1 only is made for the registration. Firms at Old Hill, which is only six miles from Wolverhampton, have to be registered with the county authorities, eighteen miles away, who charge £3—the maximum for the dealer's mark. Several other apparent anomalies have also been brought to our notice.

Dealers' Marks.

In our last issue the marks of some dealers at Kendal were given, and a correspondent writes from Westmorland asking for an explanation. In the case of dealers general identification marks are given for a maximum fee of £3, securing to the trader a series of numbers at the one charge. Apparently there is no uniformity in the methods adopted by various authorities. At Liverpool, for instance, A is regarded as the distinguishing mark for a trader's vehicle, various numbers being assigned for the individual firms. At other places a different letter or combination of letters is given the various firms. In the county of Westmorland, where the index letters are E.C., the letter W is assigned to the trade, each member of which is given five numbers and can have the selection of three colours—red, green, or blue. At Nottingham the mark is in black letters on a yellow ground.

The Isle of Man.

With reference to the point raised last week by a correspondent as to the operation of the Motor Car Act in the Isle of Man, we would point out that the measure, as adopted at Westminster, is inoperative in the Isle of Man and also the Channel Islands. Motor-cars in the Isle of Man come under the Highways Act, 1899, of the local Legislature and also the Light Locomotives on Highways Order, of the same year. Under these regulations motor-cars are not allowed to travel at a greater pace than fourteen miles an hour; they must exhibit lamps at the usual hours as in England, and also give audible warning of their approach, at corners, etc. For breach of the Act fines not exceeding £10 are inflicted. In addition to the ordinary carriage duty or license fee for a hackney carriage, motor-cars are subject to an annual duty of 10s. if weighing less than half a ton, and of £1 if between that weight and one ton, unladen.

Other People's Numbers.

"What," writes a Wandsworth motor-cyclist, "is to prevent an exchange of numbers among motorists after the registration of their cars? Is it not possible to so make the 3 as to appear like an 8; or what is to stop a man placing an altogether bogus number on his vehicle? The other day I saw identically the same number on two vehicles, both being on the road. They were not dealers' marks, and evidently one was inaccurate." Where the honesty of a man is not enough to prevent him playing such shabby tricks on fellow-motorists, only a wholesome fear of the law will stop a course of procedure that is absolutely reprehensible. Not one extenuating circumstance can be found for such conduct, and, in common with every self-respecting motorist, we would denounce any attempts thus to bring confusion and annoyance on innocent men. It must be taken for granted that no one would substitute a number belonging to another person unless he intended to break the law. Fortunately the Act provides for such cases—if found out—and Section V. declares that "if any person forges or fraudulently alters or uses, or fraudulently lends or allows to be used by any other person, any mark for identifying a car or any licence under this Act, he shall be guilty of an offence under this Act."

SOME HINTS TO INTENDING PURCHASERS OF A MOTOR-CAR.

THE first main considerations the prospective purchaser of a new car has to decide are (a) how much he will pay for it; (b) what seating capacity he requires; (c) to what use the car is to be put: touring or "runabout" work, or both.

(a) As regards price, cars may be roughly classified as follows:—

- (i.) below £200.
- (ii.) between £200 and £400.
- (iii.) above £400.

(i.) Cars below £200 are mostly of the single-cylinder variety, of about six horse-power, and, with few exceptions, driven through a live axle. Average speed about 17 miles per hour.

(ii.) Cars between £200 and £400, usually double-cylindrical, from six to ten horse-power. These comprise the large class of medium-powered touring machines. Average speed about 22 miles per hour.

(iii.) Cars above £400 comprise the higher-powered touring machines of four or six cylinders.

(b.) In group i. the cars are mostly designed to carry two persons, but a third (spider) seat or even a tonneau is in some cases added. For touring purposes the addition of a tonneau makes the car too heavy for its engine-power, whilst a spider seat is draughty and uncomfortable.

In groups ii. and iii. the higher engine-power enables four persons, at least, to be carried easily.

(c.) As regards the choice of propulsive power, and the work for which the car is intended, it may be briefly said that

Petrol cars and heavy steamers are suitable for "all round" work.

Electric cars and light steamers are suitable only for local work.

Having now, for argument's sake, found several cars which seem to suit your requirements as regards price and seating capacity, the next consideration is whether you intend to look after the car yourself or to employ a mechanic. If you are going to look after it yourself, then accessibility of parts is of paramount importance, whilst a live axle is a great advantage, as the complication of countershaft and chains is thereby eliminated. But it should be remembered that there are at present on the market a number of cars with faultily-designed live axles, and, in general, it may be said that the methods of adjustment in a live axle which runs on ball-bearings should be carefully looked into.

GEAR.

Do not omit to inspect this, and, generally speaking, favour the car with the biggest and strongest-looking gear wheels. There are several cars now on show the small size of whose gear wheels is utterly disproportionate to the power which they have to transmit, and in which fair all-round work would mean speedy renewal.

TYRES.

If your choice falls upon a car designed for use with pneumatic tyres, be careful to ascertain that these are of a size consistent with its weight and speed. This information is best obtained from the tyre manufacturers themselves, since retailers of cars (especially of the cheaper kinds) are apt, from financial motives, to fit too small a size. Remember that by fitting your car with large, even excessively large, pneumatic tyres you will reduce the pace and increase the original outlay, but you will gain (with reasonably careful driving) comparative immunity from punctures and bursts, and you will undoubtedly save money in the end. As regards solid tyres, there are several good cars specially built for these. The disadvantages of solids compared with pneumatics are, slower pace and greater vibration, with increased wear and tear of mechanism, but it should be remembered that this latter disadvantage

may be to a large extent compensated by good springs, whilst many drivers advocate the combination of pneumatics on the front and solids on the driving wheels, an arrangement which is frequently recommended.

FUEL CONSUMPTION.

Roughly it may be said, in respect to petrol cars, that this increases in proportion to the horse power. The light "run-about" steam cars are expensive to run, but the makers of the heavier touring types claim that their machines cost less than petrol vehicles of similar weight and pace.

REVERSE MOTION.

The intending purchaser of a small two-seater will do well to remember that in England the law requires every car weighing more than five cwt. to be fitted with a reverse, a fact which some agents either accidentally or intentionally overlook.

TRIAL RUNS.

These should be taken preferably where the roads are in doubtful or even bad condition, for then the side-slipping propensities, very marked in some cars, and especially in such as are fitted with single-cylinder engines of eight or nine horse power, are most easily observed, whilst it is much more useful for the intending purchaser to know what the car can do in bad circumstances, than when conditions are in its favour. The car should then be tested with special reference to its brakes and its hill-climbing capacity.

Every car worthy of the name should be able to climb a gradient of 1 in 6 with a full load. Either brake used separately should be able to hold the car with full load forwards and backwards on a gradient of 1 in 6.

In most cases the application of the foot-brake withdraws the clutch. But, in the case of a touring car especially, preference should be given where this practice is not adhered to, for then a third brake, i.e., the engine, is available in case of necessity. The brakes of heavy cars should be invariably water-cooled.

The above notes, while referring principally to petrol cars, since these at present constitute the majority, also apply with modifications to electric and steam cars.

Finally it may be mentioned that the horse-power of an engine as claimed by the makers is a very unreliable criterion in many cases of the speed and hill-climbing powers of a car, and, when dealing with makers whose reputation has yet to receive the seal of public opinion, the only real test of its capacity is to go for a ride on the car and see what it will do. W. J. E.

MESSRS. SHIPPEY BROTHERS, LIMITED, have been appointed sole London agents for the steam wagons of the "Hercules" Motor Waggon Company, Levenshulme, an illustration of which was given in our issue of August 22nd last. The 1904 type of wagon will be on view at the Show at the Agricultural Hall.

MESSRS. KENEALY are to be congratulated on the quantity of information they have compressed into the "Motoring Annual and Motorist's Year Book" for the current year. The present volume contains more than 400 pages, and is illustrated with photographs of several well-known motorists as well as short biographies of many more, after the manner of "Who's Who." Records, trials, and races are chronicled in concise form, and the fact that the index contains about 1,300 references is ample demonstration of the fulness of the information.

If a motor-car is not to be used for a week or so it is well to cover the whole of the vehicle with a light sheet, the edges of which are provided with tapes to enable it to be tied down into position on the car. Leather hoods should not be allowed to remain for any long period in a folded-up position, for, however good the leather may be, and whatever means are taken to provide for its protection and the retention of its suppleness, it will dry and crack where sharp bends occur in it. For this reason it is well, if possible, to let the hood remain open during such time as the car is standing in the garage.

MOTOR-CYCLING NEWS.



THE Rover Cycle Company, Limited, of Coventry, have recently taken up the construction of motor-cycles, and this week we are able to give an illustration and a brief description of the machines they are turning out. The frame is designed to carry the motor in the popular vertical position with such

cam; as the cam turns round these two projections are rubbed or wiped together, making or breaking contact. The moment the projections part the rocking lever is pushed by a compression spring against the end of a screw, forming a stop which prevents the lever remaining in contact with the cam. The sudden intervention of the stop ensures a quick break, resulting, it is claimed, in a hot and fat spark between the extremities of the sparking plug. The carburettor is of the float-feed spray type; two separate

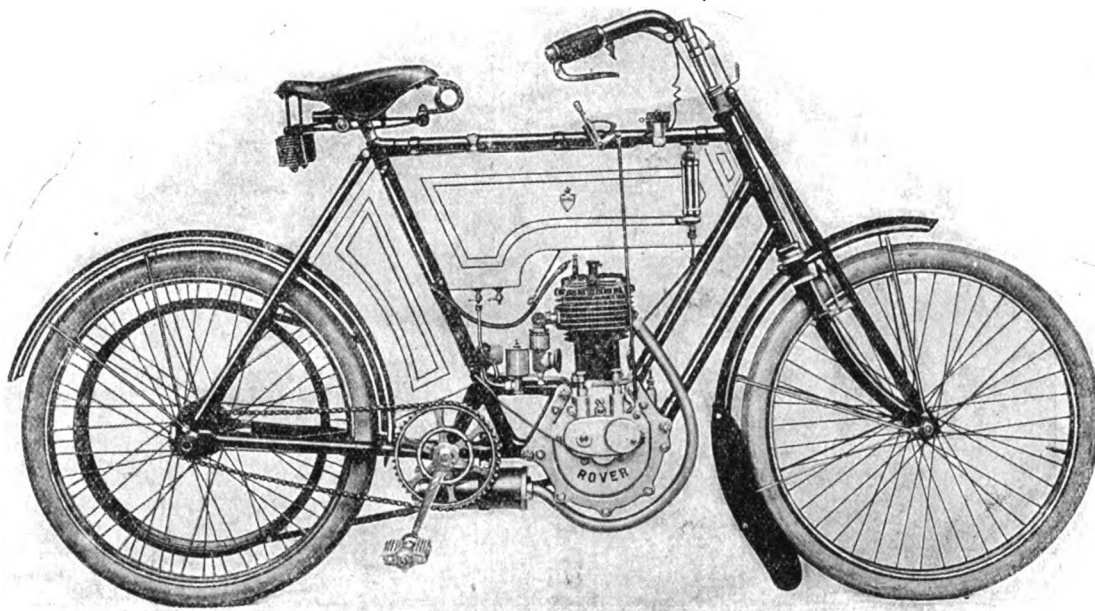


Fig. 1.—The Rover Motor-Bicycle.

rigidity as to ensure adequate strength to provide for the severe stresses. The motor, which is constructed throughout in the Rover works, is of 3-h.p., having both a bore and stroke of three inches. The main bearings are large in diameter and long, that on the belt side of the engine being extended to an exceptional length by the use of a deeply-dished driving pulley. Both the inlet and exhaust valves are operated by mechanical means; a separate cam is used for each valve, the lower end of each valve tappet being provided with a roller to minimize the friction. An improved and protected method of retaining the valve springs is employed, consisting of a slotted collar which slides on to a reduced diameter near the end of the valve stem, over which a sleeve fits, holding it in its place; the top of the sleeve is cupped out to accommodate the lower end of the valve spring. The sparking plug is situated immediately above the inlet valve, where it is subjected to the scouring influence of the inrushing gas; and in the exact centre of the cylinder head is inserted a paraffin valve closed by a spring of sufficient strength to be proof against the influence of suction, and opened by a cam actuated by a small lever. Handle-bar control is provided by the left inverted lever actuating an exhaust-valve lifter through the medium of a rod or wire, whilst the right inverted lever automatically interrupts the electric current by means of a special switch, and also applies the front brake. The contact breaker (Fig. 2) is quite an original design, having neither a trembler blade nor a platinum tipped screw; it is a "wipe" contact, and yet there is no friction whatever except at the moment of the contact being made. The usual trembler blade is replaced by a rocking lever having a projection near its centre to meet the projection on the revolving

accumulators wired up to a two-way switch the top rail are provided. Thus, one accumulator can be always held in reserve and instantaneously switched into use upon the other evincing signs of exhaustion. The transmission is by means of a V-shaped belt. In addition to the front wheel rim brake worked by the right hand inverted lever, a back-peddalling expansion brake worked by a clutch on the crank shaft is provided. The disadvantage experienced with most back-peddalling brakes is the impossibility of wheeling the machine so fitted backwards; this has been overcome by providing a lever or trigger which on being raised holds the brake out of action; while to guard against the possibility of the trigger being thus left, the pedal crank is arranged with a small catch which on the first forward revolution pushes the trigger down and thereby places the back pedal brake ready for action.

THE motor uni-cycle has made its appearance! It is on view at the motor-car exhibition at present being held in Turin, Italy. The 2-h.p. motor and seat for the rider are mounted on the inside of a wheel 7ft. diameter.

WEST Ham—an eastern suburb of London—now has its motor-cycling club, of which Mr. W. Simmonds, of Plaistow, is chairman, and Mr. A. C. Davis, of Canning Town, is secretary.

THE Auto-Bike Messenger and Delivery Company is the name of a concern which has just been formed in Rochester, N.Y., U.S.A.

THE Motor Cycle Committee of the C.T.C. is promoting a week's tour in France at Easter.

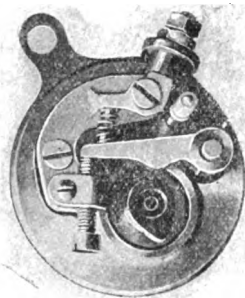


Fig. 2.—The Rover Contact Maker.

CONTINENTAL NOTES.

HERR RASCH, the German Government inspector, accompanied by Freiherr Brandenstein, the secretary of the German Automobile Club, has completed a survey of the course for the Gordon Bennett race. The representatives of the municipal authorities of the various districts included in the route were also of the party. The dangerous turns in the roadway have been carefully noted, and the necessary steps for putting the track in good condition have been arranged for. Some suggestions have been put forward to the effect that the toll-gate at Weilburg should be removed. It has been decided, however, that this is not necessary, the authorities being of opinion that the width of the road at that point is sufficient in its present state. It has also been settled that the cars for the Austrian team are to be painted black and yellow.

A GRENOBLE firm, in conjunction with Messrs. Thomas Cook and Sons, have just started a series of automobile excursions

The wheel-base of the vehicle is nearly 14 ft. The designer intends to make some speed trials with the car after the show, and, according to report, expects to attain a speed of 125 miles per hour.

A MOTOR-CAR exhibition was opened in the Palace of Industry, Amsterdam, on Friday last week, by the president of the Dutch Automobile Club. There are between fifty and sixty exhibitors, the cars on view including all the leading French, Belgian, and German types. An interesting motor-boat section has been organised in connection with the show, which will remain open until the 21st inst.

MR. H. R. KIRK, the well-known Yorkshire motorist, has recently been touring in France on his 24-h.p. De Dietrich car. One of the trips was from Paris to Monte Carlo, which was made in easy stages in four days. On the first day of the outward journey he ran to Dijon, on the following day Lyons was reached, the third day found him at Avignon, and on the fourth day he



M. Cormier's Tour on an 8-h.p. De Dion Car—The Vehicle among the snow in the Airlberg.

[Le Chauffeur.

in the Nice district. One car makes a daily trip from Nice to Mentone via the beautiful Corniche road, and returning by Monte Carlo, Beaulieu, and Villefranche. On Tuesdays, Thursdays and Sundays there are excursions to St. Jean-la-Rivière and the Valley of the Vesubie; and on Wednesdays and Saturdays one to the Gorges du Loup and Grasse.

THE GARDNER-SERPOLLET COMPANY have secured a contract for a number of 20-h.p. steam omnibuses for a public service in Martinique. They are intended for the conveyance of both passengers and mails, and will have accommodation for eighteen persons.

AMONG the novel vehicles on view at the motor-car exhibition at present being held in Turin is a 200-h.p. racing car. It follows the usual arrangement of chain-driven cars, and has been designed by Signor Dobelli, of Rome. The four-cylinder vertical engine has cylinders 9½ in. bore by 6½ in. stroke, the normal speed being 1,300 revolutions per minute.

ran through Cannes to Monte Carlo. Similar long stages were made on the return journey, Valence being reached the first day, and Dijon the second.

It is reported that the Sports Committee of the A.C.B. is endeavouring to change the route of the Circuit des Ardennes in order to avoid the sharp corner at Longlier, and also to slightly increase its length. The new course is Bastogne, Barrière de Champlon, St. Hubert, Decogne, Neufchâteau-l'Eglise, Habay-la-Neuve, Corne du Bois des Pendus, Martelange to Bastogne, a distance of 126 kilometres as against the 85 kilometres of the old course.

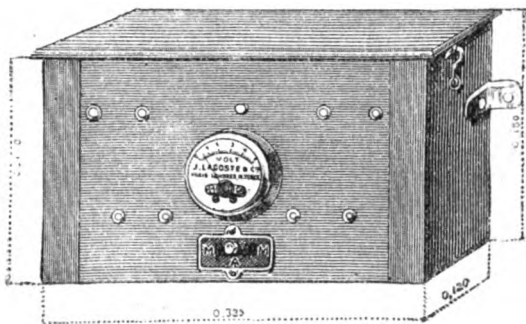
THE Solent Yacht and Marine Motor Company, Limited, has been registered with a capital of £5,000, to acquire the business carried on by Messrs. Charles Sibbick and Company, Limited, at Cowes, to adopt an agreement with Mr. F. W. Livesay, and to carry on the business of motor-launch and boat builders.

HERE AND THERE.

THE Haywards Heath Council has decided against the erection of notice boards as to motor-car speed.

BEFORE the Coventry Engineering Society, Mr. C. R. Garrard has been lecturing on Road Locomotion.

MESSRS. J. LACOSTE AND COMPANY have brought out a new induction coil for petrol motors. It is arranged to be attached to the dashboard and is fitted with an ignition controller. As



will be seen from the illustration given herewith, the coil is provided with two sets of buttons, by means of which, in the case of misfiring in any one of the cylinders of a motor, the faulty one can be detected. Take the case of a four-cylinder engine; the cylinder which is misfiring or giving any trouble can at once be detected in the following way. Press the buttons 1, 2, 3 in the bottom row, the high tension current is then put into short circuit with the frame, and no spark is produced at the sparking plugs in the corresponding cylinders, so that, if the motor still continues running, it will be evident that cylinder number 4 is firing as it should. Reverse the process, cutting out cylinders 4, 3 and 2, and then perhaps the motor will stop, showing that cylinder number 1 is at fault. When, having stopped the motor, it is required to verify the sparking at the plugs and adjust the tremblers of the coil, by pressing any button on the top row the corresponding trembler "buzzes" and produces a spark at the plug tips. Usually, to perform this operation with an ordinary coil, it is necessary to turn the engine round until the desired contact in the commutator is reached, and to do this it is necessary to release the compression in some way or another, as otherwise the engine would not stay in the position while the necessary adjustment was made. A great feature about the controller is that while running not a single extra connection is used, and when wiring the coil up, the connections to be made are exactly the same as a coil not fitted with the controller.

MESSRS. JACKSON BROS., of Knutsford, have a motor-car depot at Grove Street, Wilmslow, where they have a large stock of accessories, petrol, etc.

WE learn that the Mo-car Syndicate, Limited, Paisley, are bringing out a new type of "Arrol-Johnston" car with the engine in the front. It is being made in two sizes—16 and 20-h.p.—both having three-cylinder horizontal engines, the cars being chain-driven throughout.

A PROPOSAL is under consideration at the Belgium Automobile Club to organise a backward race; that is to say, instead of the competing cars running forward, they are to be driven backwards on the reverse gear. The suggested course is from Brussels to Grosselies.

THE PIONEER MOTOR COMPANY FOR INDIA, LIMITED, are showing at the Palace a little stereoscopic souvenir with photos of motor-cars with the added effect of relief that comes by stereoscopic vision. This new company have already shipped an automobile to Bombay, together with a driver, and Anglo-Indians are invited to obtain one of the souvenirs from 17, Shaftesbury Avenue, W. There are so many ways in which this novelty can be used that many motor-car firms will probably consider its adoption in connection with their own particular cars.

A PUBLIC service of motor-cars has just been started between Havre and St. Romain, a distance of twenty kilometres.

MESSRS. J. GRANT AND SONS, of Strathmartin, N.B., are now using a motor lorry for the conveyance of grain.

MESSRS. WOOLER AND SHORE, of 162, Aigburth-road, Liverpool, have been appointed district agents for Star cars.

MESSRS. DU BOIS, LIMITED, 4, Princes Street, Hanover Square, W., have been appointed London agents for the Dennis cars.

THE Ryknield Engine Company, Limited, are building a 20-h.p. car fitted with lorry body, for station and shooting work, for Lord Burton.

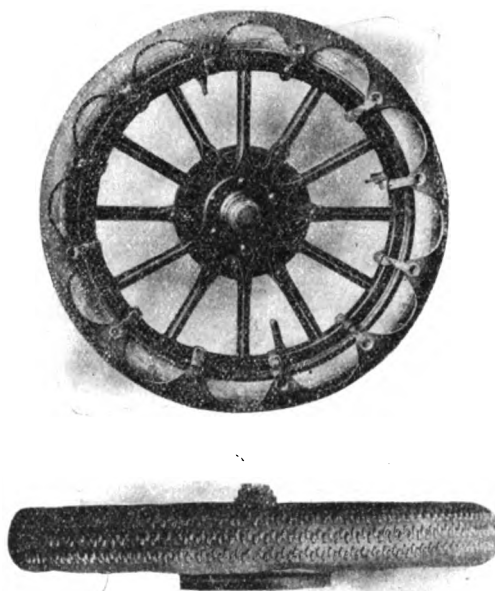
THE Sheffield Motor Company, Limited, has been registered with a capital of £5,000, to acquire the business of motor-car dealers and repairers now carried on by Messrs. E. H. Hill and H. Hill, at Sheffield, and to carry on the said business.

THE Monmouthshire County Council has decided "That a bye-law be framed to suppress the nuisance and annoyance caused to the public by the unnecessary use of horns and other instruments by parties travelling by vehicles and motor cars throughout the county."

MESSRS. W. J. PECKHAM, LIMITED, has been registered with a capital of £10,000, to acquire the business carried on by Mr. W. J. Peckham, at 84, Osborn Road, Southsea, at 278-280, Commercial Road, Portsmouth, and at 5, Stoke Road, Gosport, and to carry on the business of manufacturers and factors of and dealers in motor-cars, motor-cycles, etc.

ON Friday last week the quarterly 100 miles non-stop trial of the A.C.G.B.I. was held over the customary course to High Wycombe and back to the Club Garage, Down Street, W. A 5-h.p. Coventry Humberette was the only vehicle, entered and successfully made the journey in bad weather, the cost of fuel per mile at 1s. 3d. per gallon working out to 44d., the speed attained on the outward journey averaging 13.82 miles per hour, including the hill-climbing tests.

HEREWITH we illustrate a new unpuncturable and non-skidding band for the pneumatic tyres of motor-cars which has



lately been introduced by Mr. G. H. Hoyle, of Ash Lea, Brighouse. As will be seen, it consists of an endless leather band set with staples and fastened to the rim with straps through brass eyelet holes. It is stated that the treads cannot creep or roll when once the tyres are inflated. They are made in all sizes up to 900 mm., the size for 750 by 85 mm. tyres weighing 6 lbs.

BRITISH AUTOMOBILE INDUSTRY, 1904.

By T. C. AVELING, ASSOC. M. INST. C.E.

UP to the present the leading firms in the industry have confined the greater part of their ability to the production of pleasure vehicles, and have by these means now gained the necessary experience to enable them to be in a position to put on the market a commercial vehicle of value to the public at large. That the future of the industry will eventually and permanently be with the commercial vehicle we cannot doubt, and, further, that the great firms of the future will be those who have produced an efficient commercial vehicle, in a like manner as the great shipbuilding firms are not those who have confined their output to high-speed yachts for pleasure vehicles, but have turned their attention to the production of ocean liners, tramp steamers, and men-of-war. That the industry has made strides in the last four years is undoubtedly true, and the following comparison between the output of the various firms mentioned in 1900-1901 and 1903-1904, may be of interest:—

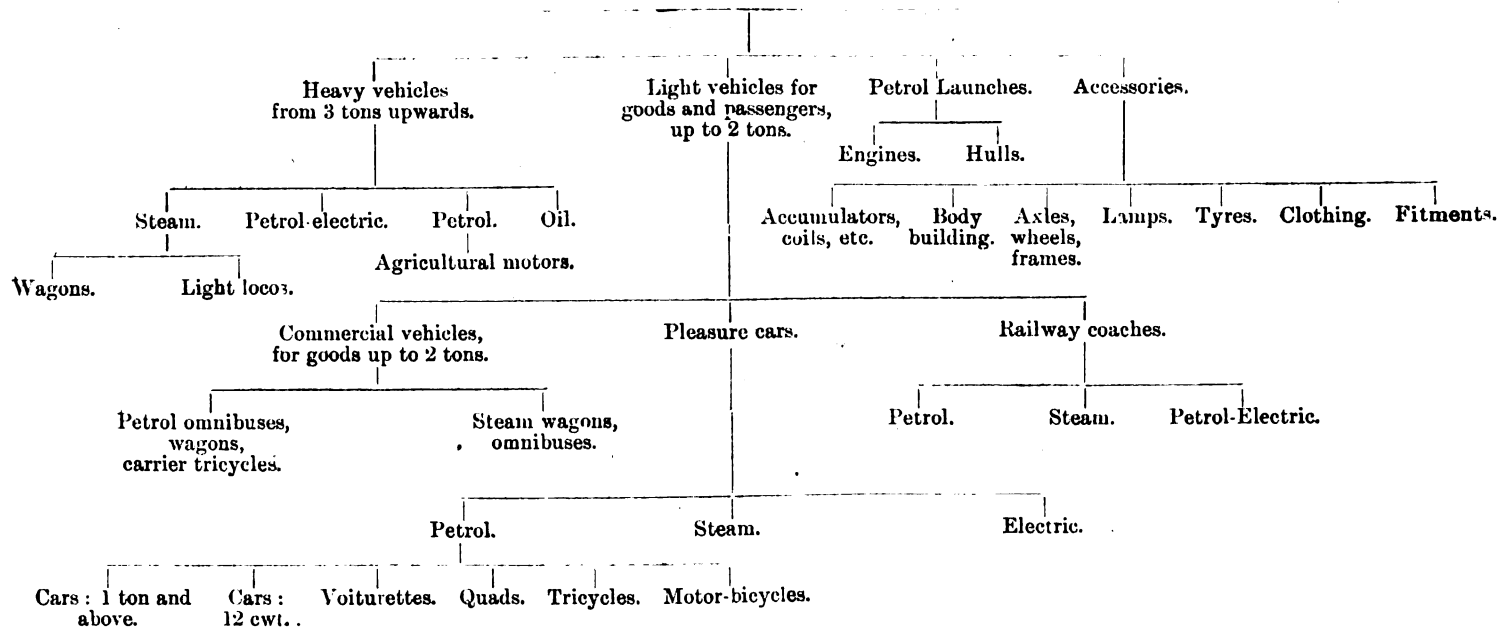
		Value of cars per week.	
		1900-1.	1903-4.
		£	£
Wolseley, estimated	...	500	2,500
Daimler	...	1,400	4,500
M.M.C.	...	1,000	2,000
Lanchester	...	none	3,000
Ariel	...	150	1,000
Napier	...	600	6,500

showing an increase in three years of something like 400 per cent. on the output of these individual firms alone. Since then there are at present,

wheel be altered, and, in its stead, the diagonal plates be allowed so long as they are of a close formation, and that a minimum width of tyre should become law in proportion to the total weight moved; this in itself would be a boon to the lorry-maker, as it would ensure the wagon not being overloaded. The maximum weight allowed for heavy road locomotive wagons (mounted on springs) is 4 tons 13 cwt. per pair of wheels, and these wheels must be at least 8in. wide. Now it must be borne in mind that these wheels have merely a rolling action on the road; that from practice with these weights this width of wheel has been found sufficient. It should be noted, however, in the Heavy Road Locomotive Act, 1861, Sec. 4, 1898, Sec. 1, that if a wagon is carrying one block or other single article of a greater weight than 16 tons, the tyres of the wheels must be at least 8in. wide. All the above, too, it should be noted, is at a maximum speed of four miles an hour. Whereas in the case of motor-lorries a speed of five miles an hour is allowed, and that the higher periphery speed of the motor lorry necessarily increases the wear on the road. For the petrol electric heavy wagons I believe the Wolseley Company are making trials. For the petrol heavy vehicles there is no doubt that every firm now engaged in the manufacture of the lighter vehicles will ultimately enter into competition in this field. Amongst the builders of petrol omnibuses of Great Britain may be mentioned Messrs. Stirling, who have made a speciality of this work.

The next heading we come to is that of a *Pleasure Car*, subdividing itself into petrol, steam, and electric. The first of these headings, petrol, sub-divides itself into pleasure cars of a ton and upwards, cars of 12 cwt., voiturettes, quads, tricycles, and motor-bicycles. Engaged in the first three of these sub-divisions are such well-known firms as Messrs. Napier, Wolseley, Lanchester, Daimler, Ariel, Ryknield Engine Company, Thornycrofts, Marston, Star, Wolverhampton; Hozier, Dar

THE AUTOMOBILE INDUSTRY.



now formed and carrying on work, *i.e.*, manufacturing, such firms as Messrs. Humber, of Beeston and Coventry; the Mo-Car Syndicate; the Ryknield Engine Company; James and Browne; Marston Limited; Stirling's; together with the firm of Messrs. Darracq, who are building new works in this country, and also the Clement Company. Other firms are:—Sir W. G. Armstrong, Whitworth and Co., Limited, who are making the Wilson and Pilcher and the Roots and Venables cars. Also Messrs. Willans and Robinson, who have taken up the Duryea and Mr. Hutton's car. I believe that Messrs. Crossley, the gas engine makers, are expending a sum of thirty thousand pounds on machinery for motor-car manufacture, and we know that Messrs. Clarkson, of Chelmsford, are producing an efficient steam car. Amongst the steam wagon builders may be mentioned Messrs. Thornycroft, Coulthard, Fodens, Leyland, Straker, Ellis, Yorkshire Steam Wagon Company, Wantage Engineering Company, Savage, Hindley, etc. Amongst the light steam locomotives may be mentioned Messrs. Tasker, Wallis and Stevens, etc., and several of the big road locomotive firms.

To the makers of heavy lorries, it would be well to draw attention to the seriousness of supplying a lorry with a too narrow wheel width. County authorities are becoming more and more severe on the motor vehicles—in fact, they are, to a great extent, inclined to treat any self-propelled vehicle as the scapegoat for any extraordinary wear and tear on the roads that may take place in their districts. Some authorities will tell you that it is not the broad locomotive wheel with its diagonal plates that does the harm on the properly-made road, but the incessant hammering of the smooth and narrow-faced wheel which so many of the heavy steam lorries are now using; hence, in my opinion, I think it would be an excellent thing if the law as to the smooth-tyred

racq; Crossley, Clement, Richardson and Company, Motor Manufacturing Company, Humber, James and Browne, &c.

Firms interested in the electric carriage trade:—The City and Suburban Electric Carriage Company (1903) Limited; the Electromobile Company; Anti-Vibration Company. The chassis for the City and Suburban Electric Company are supplied from America. The bodies and upholstery, &c., by R. J. Shinnie, of Aberdeen; Barker, of London; and Hooper, of London. The various parts are assembled at their works at Clapham.

In the manufacture of engines for petrol launches we have Messrs. Napier, Wolseley, Lanchester, Daimler, Motor Manufacturing Company, and Thornycrofts, who have done considerable work.

From carefully prepared details the writer estimates that about three-quarters of a million is paid annually in wages in the industry at the present time, and that this supports and gives a livelihood to, in all, some 40,000 persons. At present there is in hand some £840,000 worth of work, exclusive of tyres, which will probably be delivered within the next six months; that in gross figures the total output capability of the firms now in this industry would be capable of close on two million pounds worth of work. Of this amount about one million five hundred thousand may be detailed to light vehicles alone. The total imports of motor-cars into the country last year were about two millions, and as the country itself has produced some one million three hundred thousand worth of cars, or, to be on the right side, shall we say to the gross value of one million, the total demand in the country has been one million plus the imported value, which equals three millions. Not allowing for the natural increase of the demand in this country, and taking that demand as stationary, we could establish at least twice as many factories as there are at present, and keep them fully employed, without there in any way being a glut in the market.

* From a paper read at the Automobile Club on Thursday, February 11th, 1904.

The Crystal Palace Automobile Show.

[FIRST NOTICE.]



Photo by]

General View of Exhibition.

[Russell and Sons.

AT the Crystal Palace, Sydenham, a motor-car exhibition is in progress which has attracted the presence of a large section of the industry, as will be apparent from the reports on the various stands which appear below, and which will be continued next week. As will be readily understood, it is impossible to deal with all the firms represented in one issue, but an effort will be made to secure mention of everything that appeals to motorists, whether from the point of view of novelty or utility. One notable feature of the show is the great increase in the number of cars with six-cylinder engines, these being shown by no less than five firms, viz., Messrs. S. F. Edge, Messrs. Wilson and Pilcher, the Ariel Motor Company, the Maudslay Motor Company, and Messrs. John Marston, Limited.

PETROL CARS.

The "Talbot" cars are displayed by MESSRS. HALL AND CO. The 1904 models of this familiar type of car have already been fully dealt with in the *Journal*, so it will suffice to mention that specimens of the 14-h.p. and 20-h.p. four-cylinder and 11-h.p. double-cylinder vehicles are displayed, including a handsome 14-h.p. brougham. Considerable interest is being shown in the latest "Talbot" production—a double-cylinder, gear-driven car of 8-h.p. This motor, which has mechanically-operated inlet valves, has attached to it all its necessary adjuncts, such as pump, governor, and electrical gear, in such a way that the whole can, if necessary, be lifted out of the frame in one block. Three speeds forward and a reverse are provided. Fitted with a well-appointed tonneau body, this car is one which is likely to become a popular type in the near future. Passing from the 8-h.p. we come to the chassis of the 27-h.p. "Talbot" car which made its debut at the National Cycle Show in November last, at which time we described the vehicle at length. It differs from the usual models in several respects; one point of difference is that the transmission is by means of side chains in place of the cardan shaft and bevel gear. Messrs. Hall and Co. also have on view several of the latest Darracq cars, and in this connection we may mention that Mr. L. Carcenac, who for some years has been head salesman at the Darracq factory in Suresnes, has taken over the management of their new depot at Tunbridge Wells.

The AVON MOTOR MANUFACTURING COMPANY, Bristol, display quite a novel departure in the way of a light car at a popular price. It has accommodation for two passengers and runs on three wheels in place of the usual four. The frame, which is of tubular construction, carries

under the seat, at one side, a 4-h.p. vertical water-cooled motor, the water circulation being on the thermo-syphon system. Three speeds forward are available, but, as the complete vehicle weighs under 3 cwt., no reverse is provided. The crank shaft terminates in one half of a friction clutch, the male portion of which is mounted on a sleeve on the same shaft. The sleeve also carries a pinion meshing with a spur-wheel on the change gear shaft, the first reduction of the engine speed being thus obtained ere the gear box is reached. In the latter are the usual double pairs of pinions, the power being transmitted through the pair brought into mesh by means of a lever on the inclined steering column. From the gear box a single chain conveys the power to the rear live axle. In place of the differential gear the rear wheels are mounted on free wheel clutches, which allow either of the wheels to over-run the other in turning corners. The engine and change speed gear are so mounted that they can easily be removed from the frame if necessary.

MR. STEPHEN A. MARPLES again exhibits the 18-h.p. "Windora" four-cylinder car, of which an illustrated description was given in our report of the National Cycle Show in November last. A new car designed to meet the demand for a popular-priced vehicle is the 10-h.p. "Mercury." This is of French construction, and in general arrangement follows standard lines. The motive power is supplied by a two-cylinder vertical engine, having mechanically-operated inlet valves. Three speeds forward and a reverse are provided, with a direct drive on the top speed. From the gear-box the power is transmitted by a cardan shaft through bevel gear on to a live axle. MESSRS. JOSEPH BAKER AND SONS, LIMITED, again display the Stevens-Duryea cars, of which a full description was given in our issue of December 12th last. Examples of the Baker speed-reducing gear, a very compact arrangement, are also on view. MR. W. H. M. BURGESS displays a variety of Talbot cars and a 15-h.p. Panhard, all fitted with Rothschild bodies. The White and Poppe motor-cycle engine described in a recent issue is also to be seen at this stand. AUTOMOBILIA, LIMITED, confine their exhibit to examples of the 14-h.p. Renault, 15-h.p. Panhard, and 12-h.p. Darracq types.

The RYKNIELD ENGINE COMPANY, LIMITED, of Burton-on-Trent, display for the first time their new 10-h.p. "Ryknield" cars. The new features, such as the clutch and steering, were illustrated and described at length in our issue of the 6th inst., so that we need only now refer to a few of the details not dealt with on that occasion. In addition to a neat tonneau (Fig. 1) painted in dove grey, a novel vehicle is displayed, this being known as a station cart, being designed to convey luggage and also for use in connection with shooting parties, to carry beaters, game, etc. A van to carry a load of one ton is also on view, while special attention may be drawn to a handsome victoria. In order to demonstrate the

various features, a chassis is shown in motion, worked temporarily by an electric motor. The two-cylinder engine has mechanically-operated inlet valves, these being located in the top of the heads and actuated by tappets somewhat on the lines of the Buchet motor. The cylinders are 4 in. bore by 4½ in. stroke, the normal speed being 1,000 revolutions per minute. The ignition is by magneto. The governor is adapted to act on a throttle in the admission pipe, the pump is gear-driven and circulates the water through the engine, a framed ribbed radiator and a separate water tank. At present the Longuemare carburettor is being used, but the company

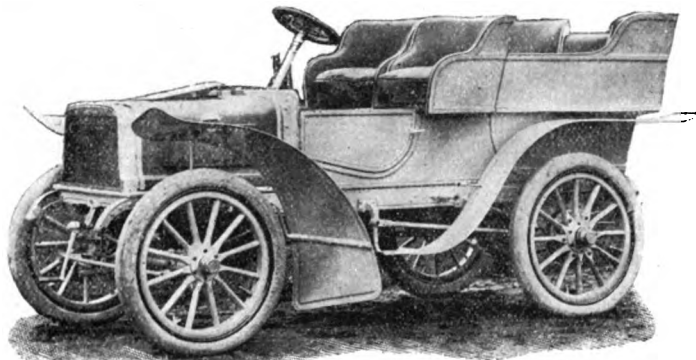


Fig. 1.—The "Rynkeild" 10-h.p. Tonneau.

have an automatic carburettor of their own design in hand. The frame of the vehicle is of pressed steel, the wheel base being 6 ft. 6 in., and the track 3 ft. 11½ in.

The new models of the Georges-Richard Company, shown by MESSRS. MANN AND OVERTON, comprise quite a number of special features. For the 1904 season, 8, 12, 16, and 24-h.p. cars will be available. Two-cylinder engines will be fitted to the 8-h.p. and 12-h.p., while those of the 16 and 24-h.p. will have four cylinders. Except that the 8-h.p. car has only three speeds forward in addition to the reverse, while the others have four, the following remarks apply to all four vehicles. The main frame is of stamped steel, the engine and gear being supported on a secondary frame of tubular construction. The cylinders, which are cast in pairs, have mechanically operated inlet valves, these being set on the opposite side to the exhaust valves. Magneto ignition is being retained, but the Georges Richard Company have struck out a line for themselves in deciding to abolish the pump, relying on the thermo-siphon action in conjunction with a fan-cooled radiator for the water circulation. The carburettor is an automatic air-regulation one of the Georges Richard Company's own patent. The transmission is by means of a cardan shaft and bevel gear on to a live axle

"back kicks" of the motor, owing to the ignition not having been retarded, is an arrangement whereby the act of putting the starting handle into gear at the same time automatically retards the ignition; the moment the handle is released the ignition returns to its normal position. The 12-h.p. and 16-h.p. chassis are of sufficient length to take bodies with side entrance, while the 24-h.p. type is made with chassis of two different lengths. Messrs. Mann and Overton also display a range of waterproof tool boxes, umbrella cases, etc., for use on motor-cars, made of cane work and painted in any colour to match the car. At the time of our visit to the stand, one of the latest 22-28-h.p. Mercedes cars was expected, to which we shall refer in a later issue.



Fig. 2.—The "Vauxhall" 6-h.p. Car.

While the general features of the popular "Vauxhall" car have been retained, the 1904 models displayed by the VAUXHALL IRON WORKS COMPANY, LIMITED, show a number of notable improvements over the preceding type. In the first place, it may be mentioned that the power of the motor has been increased from 5 to 6-h.p., and that larger bearing surfaces throughout are provided, while improvements have been made in the design which will render the crank case, &c., if anything, more accessible than before. A reverse speed has been added to the gear box, brought into action by friction, and applied by a small pedal on the floor of the car next to the brake pedal. We notice, too, that many of the minor details of the car have been modified, a high-speed trembler coil having been fitted, larger dashboard, lubricator, &c., all tending to improve the running of the vehicle. The road wheels are of the artillery type, shod with 3 in. Dunlop tyres, instead of the wire wheels with 2½ in. tyres of last year. All the exposed metal work and lamps are of bright brass instead of nickel plated. The frame has been widened, enabling a more roomy seat to be fitted, giving the car generally a more handsome appearance. We may add that, as before, the 1904 model can be fitted with a third seat instead of the bonnet, to enable a third passenger or two children to be carried.

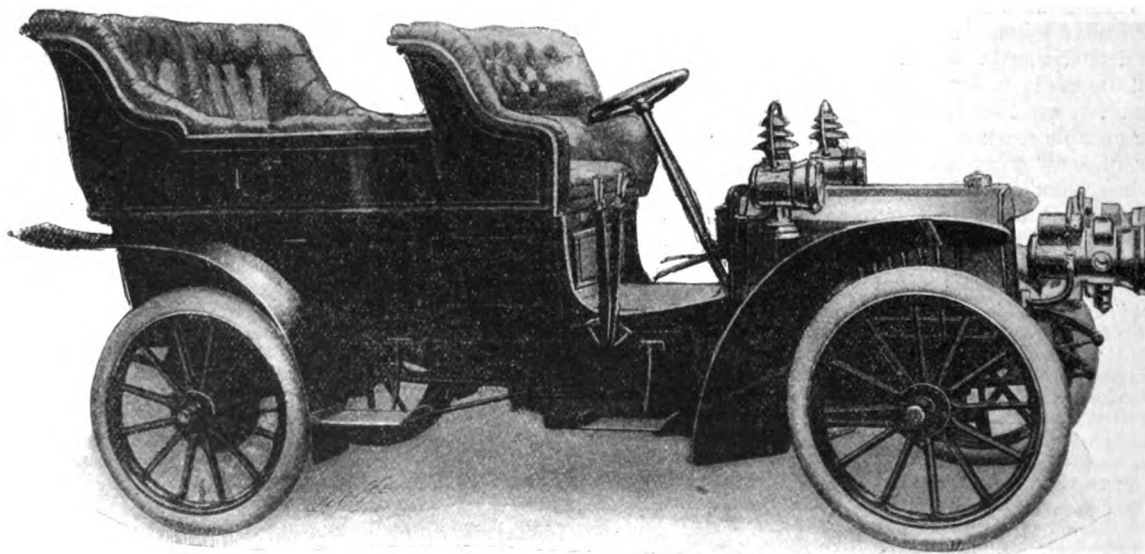


Fig. 3.—The Georges Richard 16-h.p. Side-entrance Car.

a new point being the introduction of a universal joint between the engine and gear box, this not only relieving the shafts of the latter of all strain, but permitting the clutch to be dismounted without interfering with the gear box in any way. With the object of rendering the cars quieter than ever, and also of keeping down the dust, a new form of silencer is being adopted; it is of large size and is placed transversely across the rear of the car, the burnt gases finally emerging through two flattened pipes projecting at an angle to the silencer. Enclosed internally-expanding brakes are now fitted, while a new point which will appeal to all who have suffered from

The stand of MESSRS. DEASY and Co. is continually surrounded by an interested crowd, the object of their attention being the identical 14-18-h.p. Martini car on which Captain Deasy recently drove up the cog railway on the Rochers de Naye, near Caux. An attempt has been made to indicate what the feat meant by the laying down under the car of a section of cog railway track, together with the loose ballast on which the wheels of the vehicle had to run. For 1904 only one type is being made, a 16-20-h.p. four-cylinder vehicle (Fig. 4), the engine, although on the same lines as last year's model, being slightly more powerful. Mechanically-actuated inlet valves

are employed, together with a combined honeycomb radiator and water tank, a feature being the provision for drawing off all the water, when necessary, from the radiator tank, pump and cylinder jackets. The carburettor is provided with a jacket through which part of the exhaust gases may be made to circulate. Four speeds forward and a reverse are provided; a direct drive is obtained on the fourth, and the single lever controlling all the speeds has only a forward and backward movement. The clutch is of the leather-faced cone type, and a universal joint is introduced between

mitted through a cardan shaft to a differential shaft below and parallel with the rear axle. On the ends of the differential shaft are pinions meshing with internally-toothed rings attached to the rear road wheels. The governor can be set to act at any desired speed from the steering wheel, a pedal accelerator cutting out the governor, no matter at what point this is set to act. The Chenard-Walcker has a record for economy in fuel consumption, while the special control results in an exceedingly silent-running and flexible engine, it being claimed to be possible to run the car at

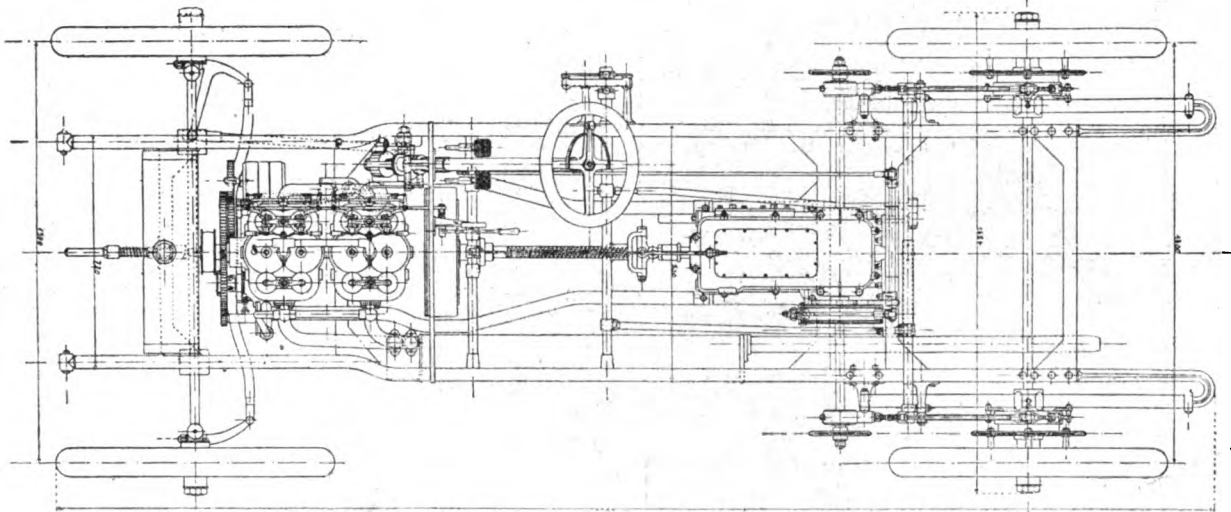


Fig. 4.—Plan of the "Martini" 16-20 h.p. Car.

it and the gear box, to prevent any strain being thrown on the latter. The main frame, as well as the secondary one supporting the engine and gear box, are of pressed steel, while the dumb irons extend well to the rear to allow of placing the rear axle well back and the use of long springs. With the exception of one hand-controlled lubricator for the pump and radiator fan spindle, the lubrication is entirely automatic; the base chambers are provided with cocks, by means of which it can readily be ascertained whether they contain the desired amount of oil. The engine and gear box are entirely protected below, while the steering rod is placed behind the front axle.

A car which comprises a number of interesting features is the 18-h.p. four-cylinder Chenard-Walcker (Fig. 5) shown by the WESTON MOTOR SYNDICATE. The engine is provided with mechanically-operated inlet valves located on the opposite side to the exhaust valves; a characteristic point of the motor is the peculiarly-shaped cam, by means of which not the lift, but the duration of the time the inlet valves are kept fully open, can be varied, and the speed of the engine consequently controlled. A novel form of automatic carburettor which furnishes a quality of mixture to

any pace from 2½ miles per hour up to the maximum on the top speed of the car. The 12-h.p. Chenard-Walcker car has a two-cylinder motor; it is provided with the special valve control found on the 18-h.p. car; an ordinary type of carburettor is used, while the transmission is by means of side chains. Three speeds forward and reverse are provided, and the Weston Company claim that the vehicle can be driven at a rate of as low as four miles per hour on the top direct speed.

The Arrol-Johnston cars are shown in a number of styles by the Mo-Car SYNDICATE, LIMITED, the models on view including a four-seated dog-cart, a six-seated car having small side doors to the seats, and a vehicle to accommodate seven passengers. They are all built on the standard 12-h.p. chassis, of which one is shown, the two-cylinder engine being located at the rear. The general features and arrangement of this novel car have been fully described in the *Journal*. We notice, however, that several modifications and improvements have been effected. Among these is the provision of a hand-operated throttle valve on the admission pipe, this being quite distinct from the governing arrangement, which, as hitherto, acts on the exhaust valve. When running down hill, with the throttle closed, fresh air

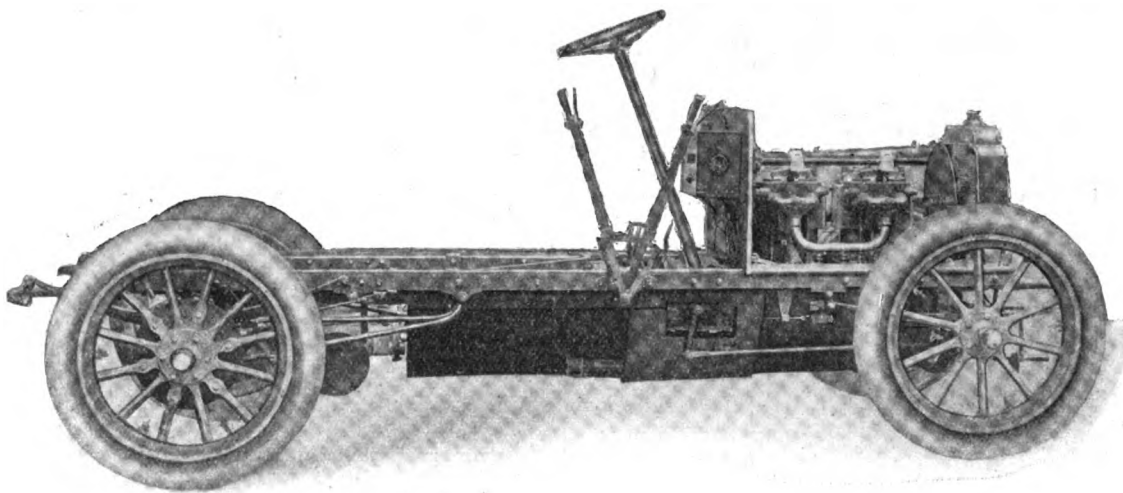


Fig. 5—Chassis of Chenard-Walcker 18-h.p. Car.

correspond to the engine speed is used; this comprises a compound valve, part of which regulates the supply of air and the other portion the supply of petrol. The water-circulation pump has been discarded in the 1904 Chenard-Walcker, the thermo-syphon system in conjunction with a special honeycomb radiator being relied upon. Magneto or high-tension ignition, with a chain-driven commutator on the dashboard, can be fitted. The special combined clutch and brake is still retained, as is also the Chenard-Walcker transmission, in which, it may be remembered, the power is trans-

is drawn into the cylinder. Not only does this help to cool the motor, but the latter is thus made to act as a brake. Quite a new departure for the Mo-Car Syndicate is a 12-h.p. estate wagon, with the engine in the front. This is intended for carrying servants and luggage to stations, and also for use in connection with shooting parties; it will carry loads up to two tons, and is provided with a body which can be tipped by means of a handle and gearing. The engine is of the standard 12-h.p. type, the power being conveyed to the gear box by a Renold silent chain, thence by a

second chain to the differential shaft, which in turn drives the rear road wheels through side chains. As usual, the engine is arranged to be started from the seat.

A very large display of Panhard cars is made by MESSRS. PANHARD AND LEVASSOR. For the 1904 season no less than seventy types are being made, viz., 7-h.p. two-cylinder, 8-h.p. three-cylinder, and 10-h.p., 15-h.p., 18-h.p., 24-h.p., and 35-h.p. four-cylinder, these powers being in all cases nominal. We gave a description of the new three-cylinder car in our report of the Paris *Salon*, so it will suffice to briefly deal with the changes that have been made in the 1904 models as compared with those of last year. From 8-h.p. upwards the engines have now separately cast cylinders, the chief advantage of this system being that it permits the fitting of a bearing between each crank; while it facilitates more perfect water jacketing, and consequently better cooling of the cylinder walls. Ignition is by means of a chain-driven magneto on the dashboard. The wood and steel frame is retained, as well as the Krebs automatic carburettor. A ribbed radiator, set in a frame which forms the water tank, is employed, an adjustable fan being provided to induce the necessary current of cool air through the same. Mechanically-operated inlet valves are now fitted to all engines from 15-h.p. upwards, and on the two larger sizes extensible cams are provided, so that the lift of the induction valve may be varied by the driver. The valves of each cylinder are accessible by releasing one screw, and the whole of the valves may be removed for cleaning without disturbing any other part. The water circulating pump has been greatly

by a water circulation maintained by a gear-driven pump and honeycomb radiator in the usual way. The inlet and exhaust valves are in one casting, and are placed on the top of the cylinder, both being mechanically operated from a side-shaft. An important part of the Dougill system is an automatic carburettor, which is really four carburettors in one. It consists of a rectangular case on the top of the engine, provided with four gravity-fed petrol leads, each being covered, when the engine is stationary, by short levers held in their relative position by light springs, and operated by the suction of the motor in the following manner:—There are four round openings in the body of the carburettor, the combined area of which give the pre-arranged air speed to the motor at its maximum number of revolutions. The carburettor is adjusted by closing three of the four oil feeds and tightening the tension of the spring on the air control levers, so that one only becomes operative. After starting the engine, release the tension on the second lever and open the oil feed by degrees; the engine then will be giving its full brake power up to 200 revolutions per minute, and the moment the engine is accelerated No. 2 air and oil feed comes into operation, not by spasmodic jerks but by degrees. When the second air lever has opened to its limit—at a speed of about 400 revolutions per minute—No. 3, and in turn No. 4, comes into operation through the increased speed of the engine. Thus the carburettor is adjusted, and the parts firmly locked entirely under the engine's load at all and every speed at which the motor may be designed to run. The normal rate is about 800 revolutions, but by means of the automatic and sensitive carburettor

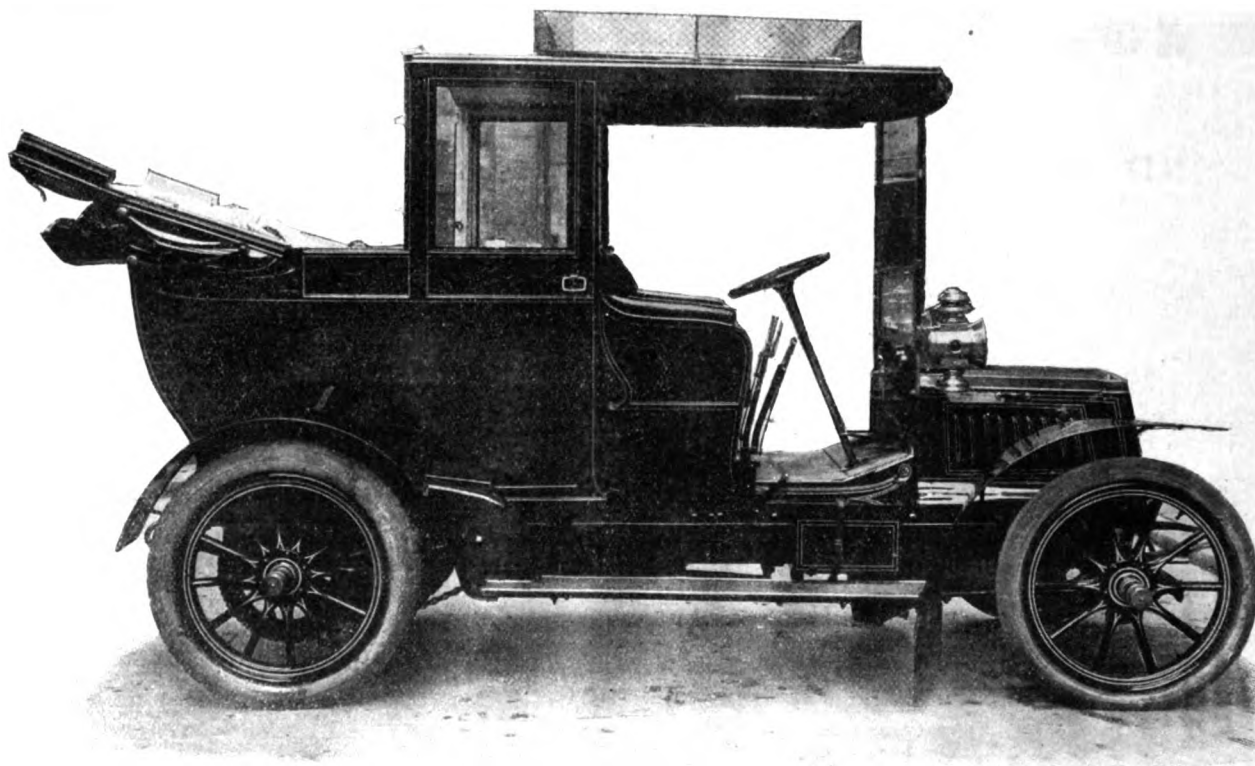


Fig. 6.—The Panhard 18-h.p. Landauette.

improved and placed in a convenient position under the bonnet, where it is protected from dirt and danger; it is driven by friction off the flywheel, by means of a flexible shaft. Most of the different types are built in two lengths of frame, to enable bodies with side entrance to be mounted upon them, and some excellent examples of this increasingly popular class of vehicle are to be seen on the stand, notable among them being an 8-h.p. brougham and an 18-h.p. landauette, the latter being illustrated in Fig. 6.

One of the most novel cars in the show is the "Dougill" exhibited by the PATENT AUTOMATIC FEEDING MACHINE COMPANY, LIMITED, of Rochdale, a statement which will be at once realised when we state that it has no change-speed gear, and that the engine is a horizontal single-cylinder one of 24-h.p. The cylinder, which has a bore of 8 in., has a central explosion chamber, which forces out two pistons in opposite directions, each having a stroke of 5 in. There are thus a crankshaft and flywheel at each end of the cylinder, the two pistons travelling to and from each other at each revolution, and, in consequence, balancing the impact of the explosion and the reciprocating motion of the pistons. The latter are synchronised by a Renold silent chain, running over chain wheels fixed upon the crankshafts, this chain also transmitting the power from the forward to the rear crankshaft, upon which are fixed an expanding clutch, chain pinion, and epicyclic reversing gear. This shaft being parallel with the live back axle, a single chain drive is all that is necessary to complete the transmission, throughout which there is no end thrust. The clutch is operated either by a pedal or side lever, while the reverse motion, which is the only mechanical gear provided, is controlled by a pedal. The engine is cooled

referred to above, the speed can, it is claimed, be varied between 150 and 1,600 revolutions per minute. A compression release valve is provided, enabling the engine to be started on half compression. Notwithstanding its size, the motor is stated to be very quiet and steady in action. The designer has had in view the quick expansion of the burnt gases, and to this end has provided two exhaust valves in place of the usual one; both are operated off the same rod, to which is fitted a compound tappet lever, so arranged that a slight lead is given to the supplementary exhaust valve. The silencer is 8 in. in diameter, while the bore of the exhaust pipe is 3 in. As already stated, no mechanical change speed is provided, the various speeds being entirely obtained by means of the automatic carburettor, a throttle valve, and the clutch. The experimental car, although somewhat heavy, has been subjected to extensive trials, which have, we are informed, fully realised the designer's expectations.

A large range of Star cars is displayed by the STAR ENGINEERING COMPANY, from the 6-h.p. two-seated vehicle up to a 18-h.p. four-cylinder car. Since we last saw the 6-h.p. vehicle its wheel-base has been slightly increased. The car is chain-driven, three forward speeds and a reverse being provided. A large silencer is fitted, rendering the car very quiet in operation. The Star Company have lately introduced a new light 12-h.p. car, with four-cylinder engine. We notice that the side chains of this vehicle are provided with oil-containing gear cases. To meet the demand for side entrance cars, a 12-h.p. with long chassis has been introduced. The vehicle is up-to-date in every respect, the engine having mechanically actuated inlet valves, to which a variable lift device is fitted.

The CADOGAN GARAGE AND MOTOR COMPANY, LIMITED, display a new petrol lorry of Belgian construction, designed to carry a load of 5 tons and capable of hauling a further 3 tons on a trailer. The frame of the vehicle is of channel steel, its design being of a special character, which cannot well be explained without a drawing. The motor, which is located in the fore part of the chassis, is of the Gobron-Brillié type, having two cylinders and four pistons; it is stated to develop 34 brake h.p. Four

also be made to a 15-h.p. parallel-sided tonneau with canopy, the chassis of which weighs about 12 cwt. The car is fitted with a honeycomb radiator and tank, so arranged that, even should the pump stop, the water is always above the cylinder heads. The four-cylinder engine has no water joint to the cylinder heads. The suction inlet valves are of the multiple port type. The commutator is also worthy of careful examination. We notice that all the wires leading to the commutator are

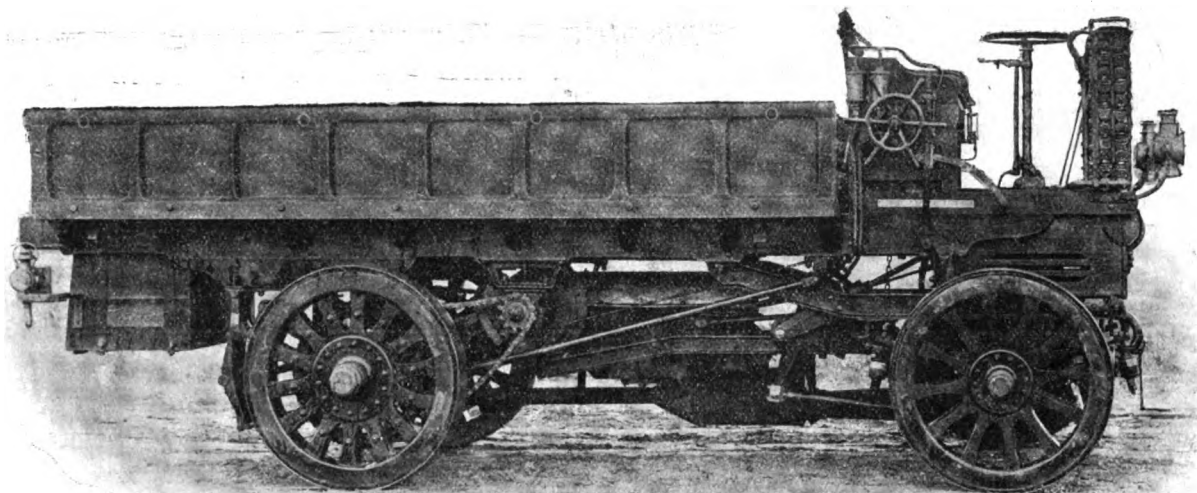


Fig. 7.—The Cadogan 64-h.p. Petrol Lorry.

speeds forward and reverse are provided, the quadrant on which the change speed lever works having a neutral stop between each notch or gear, so that the latter can be put in the free position at any point. From the gear box, which is of unusually large size, the power is transmitted by side chains. The tare weight of the wagon is under 2½ tons, and with its full load it can attain a speed of 10 miles per hour. One of its features is the low consumption of fuel—it being claimed to carry 5 tons a distance of 5 miles on one gallon of 750 petrol, the cost of which is said to be 7½d. per gallon.

stationary, and are not moved backwards and forwards as the commutator is actuated. Only one coil is used in connection with the ignition in the four cylinders. The carburettor is fitted with the hydraulic air regulator recently described in these columns. The gear box, which gives four forward speeds and a reverse, has a lid which can be removed by merely taking out one small screw. The 24-h.p. cars embody many of the general features of the 15-h.p., but are, of course, made stronger throughout. It is rather a slower-running engine, giving 26-h.p. on the brake.

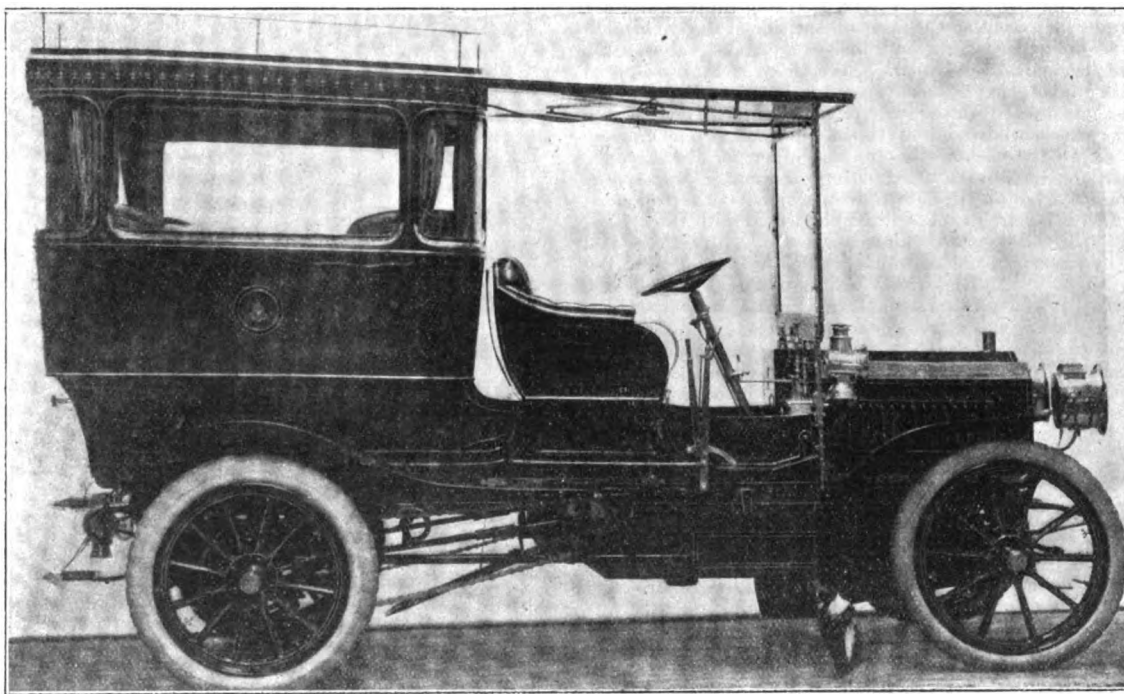


Fig. 8.—The Napier 24-h.p. Pullman Car

Interest at the stand of MESSRS. S. F. EDGE, LIMITED, is largely centred on the chassis of the new six-cylinder Napier car, of which illustrations and a description were given in our last issue. Apart from this, however, a large display is made of 15-h.p. and 24-h.p. cars, the body work of which is of the highest grade, and here special attention may be drawn to a side-entrance brougham and a 24-h.p. Pullman to seat six people (Fig. 8), both of which appear to have been finished regardless of cost. Reference may

MESSRS. PRITCHETTS AND GOLD, LIMITED, have on view two types of their "Meteor" cars—12-h.p. and 24-30-h.p.—both fitted with four-cylinder engines. They are on standard lines, the 12-h.p. vehicles being made with cardan shaft or side chain transmission. The 24-30-h.p. car, of which a chassis is shown, has a pressed steel frame and a long wheel base, viz., 8 ft. 9 in., which enables a roomy body with side entrance doors to the tonneau to be fitted. The gear box gives four speeds forward and one

reverse. The motor is fitted with a special carburettor, which enables the engine to be run down to a low speed.

MR. MORGAN DONNE exhibits Rochet-Schneider cars, for which he has obtained the British agency. For the 1904 season they are being built in two sizes, both of which have a four-cylinder engine, 16-h.p. and 24-h.p., the former giving 22-h.p. and the latter 30-h.p. on the brake. The 16-h.p. car has a wheel base of 8 ft. 6½ in., the chassis weighing 650 kilos. The 24-h.p. has a wheel base of 9 ft. 2½ in., the weight being 750 kilos. The frame is of pressed steel, and is narrowed in front to increase the "lock" of the steering wheels. The steering rod connecting the front wheels is

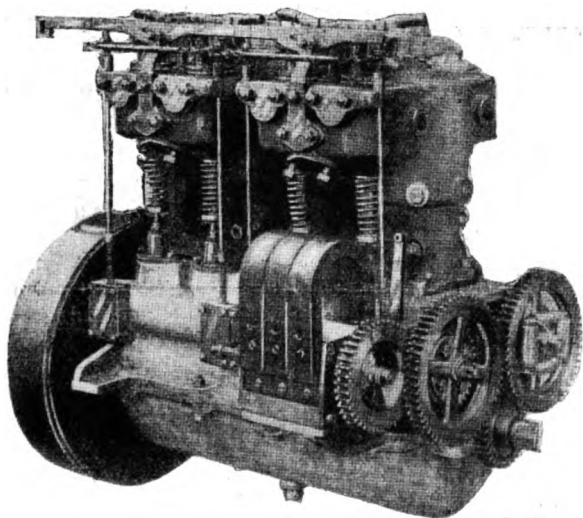


Fig. 9.—The Rochet-Schneider Four-Cylinder Motor.

behind the front axle and consequently protected from accident. There are two brakes on the 16-h.p. car and three on the 24-h.p., the latter having two pedals, each acting on its own countershaft brake, this being in addition to the hand lever which actuates the band brakes on the hubs of the rear wheels. The pedals, which are of the "push" type, are mounted upon a transverse shaft underneath the footboard which actuates the clutch, and also the countershaft brakes. Although there is no radical alteration in the engine, there are a number of improvements; it is of the double twin cylinder type (Fig. 9), having the inlet valves, sparking tappets, and the vertical rods and levers for actuating the same on one side of the engine and the exhaust valves on the opposite side, both inlet and exhaust valves being interchangeable and mechanically operated. The ignition is by a low-speed rotary magneto with tappets and advance sparking device, as in the 1903 cars. The governor acts directly on the carburettor; a throttle lever is also fitted on the steering wheel, while adjacent to the wheel are two levers, one for regulating the air to the carburettor and the other for the advance sparking. The gear presents several marked improvements; four speeds and reverse with direct drive on the fourth are provided. The top shaft in the gear-box, which is square in section and connected with the clutch, has mounted upon it the sliding gears; the latter are in two portions, and are operated upon by two forks, one of which controls two speeds and the other two speeds and reverse. These forks are actuated by means of a locking bar, which has several projections and recesses to give the desired motion necessary for placing the various gears in and out of mesh; this arrangement permits of a short gear-box, and at the same time enables very broad and strong gears to be used. The male portion of the clutch is connected to the gear by means of a universal joint, which counteracts any undue strain on the gear-box and engine; the joint also permits of the male portion of the clutch finding its true position in the flywheel. Any type of carriage body can be fitted to the chassis, a noticeable example being a 24-h.p. side-entrance brougham.

The STANDARD MOTOR COMPANY, LIMITED, Coventry, have on view a chassis and a double phaeton of 12-15-h.p. A detailed description of this vehicle was given in our issue of January 9th last, so that a lengthy reference is unnecessary on the present occasion. Attention may, however, be drawn to the double-cylinder engine, which is unique in design, having a bore of 5 in. and a stroke of only 3 in. The advantages claimed for this form of construction are compactness and light weight for the power developed, and great elasticity, it being possible to run the engine at extremely high speeds when required; while, owing to the large flywheel and special design of carburettor, it can be run very slowly and quietly without loss of efficiency. Both inlet and exhaust valves are mechanically operated and interchangeable, and the accessibility of all parts appears to have been carefully studied. Two inspection doors are provided at the side of the crank case, by removing which all the bearings and the camshaft can be examined and the bearing caps adjusted. The pistons can also be removed without dismantling the cylinders. The governor is mounted on an extension of the crank shaft, and, in addition to governing the supply of gas to the engine, also acts as an air regulator, giving the engine more air at high speeds in accordance with the latest practice in automobile engineering.

The stand of MESSRS. JARROTT AND LETTS, LIMITED, has been the centre of attraction all the week, the cause of the same being the new "Crossley" car, of which a highly-finished chassis, as well as a complete car fitted with a Roi des Belges body, painted and upholstered in red, are shown. Having already dealt fully with this car in recent issues, it is unnecessary to go into the details again; but we may mention that, in addition to the chassis, a display is made of the various parts of which the car is built, and that a model is shown of the Xenia automatic carburettor, the public interest in the latter being particularly keen. One-half of the stand is devoted to a display of the latest De Dietrich cars, these including a 45-h.p. racer, two 16-h.p. cars, and a 35-h.p. chassis. For the 1904 season four sizes are being made, viz., 12-h.p., 16-h.p., 24-h.p., and 35-h.p. The inlet valves are now mechanically-actuated off the same cam shaft as the exhaust valves. The carburettor is supplied by gravity from a special petrol reservoir, which is kept supplied under pressure from the main petrol tank. The carburettor is provided with an ingenious but simple automatic device, by means of which the quality of the mixture is kept in consonance with the requirements of the engine. The ignition is by magneto, with provision to test the sparking in each cylinder separately by a simple cutting-out device. To prevent any strain on the engine or gear-box, two universal joints are introduced between the latter and the clutch. The carburettor, which is controlled both by the governor and from the steering wheel, is also connected up to the clutch pedal, so that as the clutch is disengaged the supply of mixture to the engine is throttled. The brakes attached to the rear wheels are now of the internal expanding type, metal to metal. The frames, of pressed steel, are being made of a length to accommodate side entrance bodies. Another exhibit on the stand is

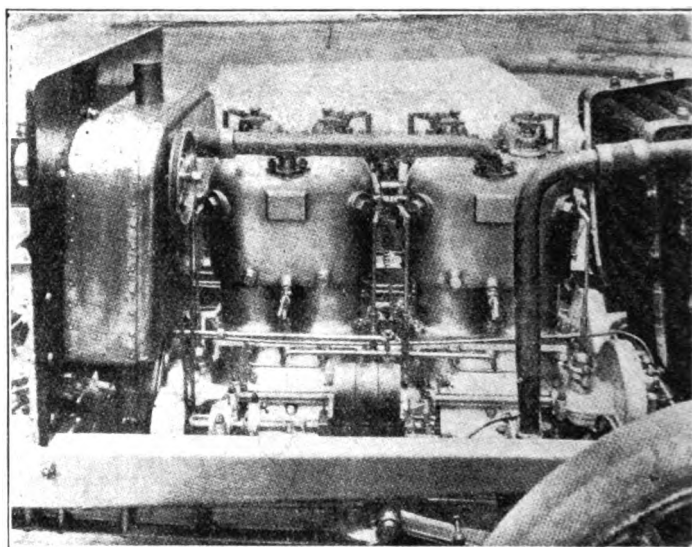


Fig. 10.—The De Dietrich Four-Cylinder Motor.

that of the "C. J. L." supplementary ignition, for use in conjunction with the magneto. This consists of a transformer, which, in conjunction with special batteries, is capable of producing the necessary strength of spark without alteration to any part of the motor, and with the utilisation of the existing ignition plates in the cylinder, thus making it possible to either run on the magneto, if desired, or to switch off the magneto and run on the supplementary ignition. A further advantage claimed for the supplementary ignition is that it facilitates the starting of the car, the motor being put into operation by half a turn of the handle.

DR. WINTER's speed indicator is also to be seen at this stand. The mechanism of this device runs very slowly, so that there is no wear on the working parts; in fact, with the car running at thirty miles per hour, the main spindle takes two seconds to make a revolution. Finally we may mention the "Pompeii" automatic tyre inflator, of which an illustrated description was given in our issue of the 16th ult.

On another stand a large display is made of the popular Oldsmobiles. This car is too well known to need description at this time. The engine is a 5-h.p. single-cylinder, placed horizontally, and the transmission is by a central chain. There are two speeds and reverse, the gears being of the epicyclic type. A feature of the Oldsmobile is its silent running and freedom from vibration. One of the cars is shown fitted with a back seat for two additional passengers; another is fitted with a hood and a specially designed storm apron; while a third is provided with a luggage carrier in the shape of a waterproof wicker basket. A new departure in Oldsmobile cars is a light delivery van, designed for the carriage of light goods of all descriptions up to a weight of about 8 cwt. The mechanism is the same as that on the runabout, with the exception that the springs and running gear have been strengthened and the gear somewhat lowered. Finally, we may refer to the weird Oldsmobile racer, which is merely a chassis with a seat for the driver projecting at the rear.

THE ROADWAY AUTOCAR COMPANY, LIMITED, the British agents for the Mors and Renault cars, have on view some excellent samples of both these well-known types of vehicles. We first examined the chassis of one of the new 19-h.p. Mors cars. The motive power is supplied by a four-cylinder engine having the mechanically-operated inlet valves on the opposite side to the exhaust valves. The carburettor is provided with both hand and automatically-regulated air inlets, and has a jacket through which hot water can be circulated. No governor is now used, but to prevent "racing" the throttle valve is so connected up to the clutch pedal that as the clutch is withdrawn the throttle is partially closed. A lever on the steering wheel also acts on the throttle. A framed ribbed-pipe radiator is used, air being drawn through the same by the arms of the flywheel, which are made to act as a fan. The magneto ignition has been improved in so far as the speed at which the magneto works has been reduced to that of the motor

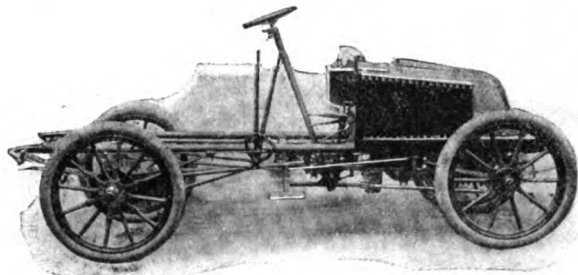


Fig. 11.—Chassis of Renault 14-h.p. Car.

itself, enabling the number of parts to be diminished and securing quietness in operation. A special form of clutch is employed, while the shafts in the gear box and the differential run on ball bearings. The 18-h.p. Mors cars are represented by a highly-finished brougham, an illustration of which is given in Fig. 12. The exhibit of Renault cars includes a chassis of the new 7-h.p. type, a 10-h.p. two-cylinder landaulette with side entrance, and one of the latest 14-h.p. four-cylinder cars. (Fig. 11.) We gave some illustrations and particulars of these vehicles in our report of the Paris Salon, but it may be mentioned that a feature of the 7-h.p. single-cylinder engine is the provision of a device by means of which the tension of the spring of the inlet valve can be varied and the speed of the engine thus regulated, this being in addition to the centrifugal governor, which acts on the carburettor, automatically regulating the supply of air and the quantity of mixture allowed to pass to the engine. The 10-h.p. two-cylinder shows a number of modifications. The inlet valves as well as the sparking plug are in the top of the combustion chamber, and are

tremblers are used for the four cylinders. The contact breaker is of the wipe type and can be readily detached without using any tools.

One of the stands of MESSRS. S. F. EDGE, LIMITED, is devoted to a display of the "Gladiator" chain-driven cars—9-h.p. and 12-h.p. (two cylinder), and 14 and 28-h.p. (four cylinder), all but the 12-h.p. type being entirely new models. The structural characteristics of the several different models are very similar. The frame is built of wood strengthened on the inside with steel flitch plates to prevent side twists. The engine and gear

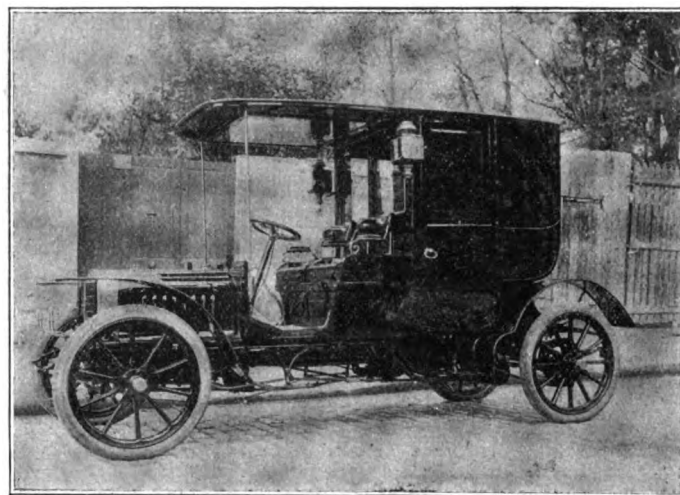


Fig. 12.—The Mors 18-h.p. Brougham.

box are mounted on a separate steel frame. The power from the engine to the gear is transmitted through a leather-lined clutch of the internal type, in connection with which ball bearings are fitted to take the end thrust when the clutch is out of action. The honeycomb radiator has been abandoned in favour of one of the ribbed-pipe variety set in a neat frame. The pump is friction driven, the leather-faced wheel being enclosed and protected from mud, except at the point of contact with the flywheel. The pump itself is mounted on a pivot and held to its work by a spring. The ignition is on the high-tension coil and accumulator system. Among the other noteworthy features may be mentioned the carburettor, in which the quality of the mixture is automatically made to correspond with the

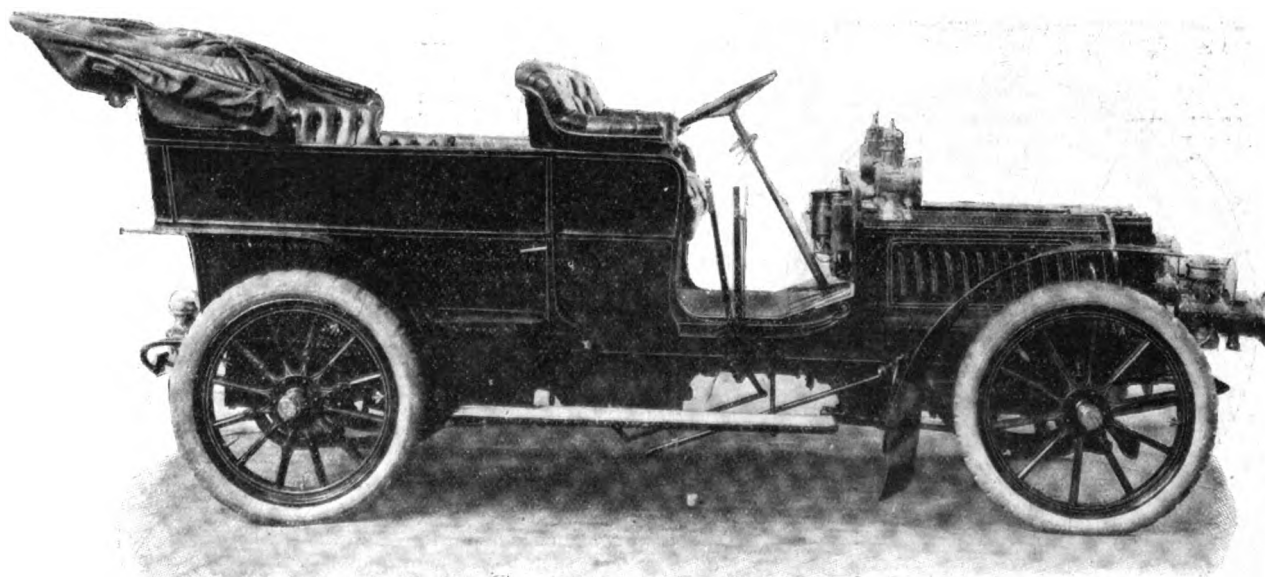


Fig. 13.—The Gladiator 28-h.p. Side-entrance Car.

thus readily accessible. Furthermore, it is not now necessary, in order to remove the exhaust valves, to first detach the inlets; instead, they can be quickly taken out by first removing two plugs in the combustion chamber. The inlet valves are provided with the variable tension spring found on the 7-h.p. In the 14-h.p. the four cylinders of the engine are cast in two pairs, with an air space between each pair. The inlet valves, which are mechanically actuated off the same cam shaft as the exhaust valves, are fitted with a special device to give a progressive lift. On all the Renault cars the high tension system of ignition is adopted. On the 14-h.p. vehicle, however, we note that a duplex coil is employed, and consequently only two

requirements of the engine at all speeds, and this without the use of any springs or diaphragm; a branch from the admission pipe is brought to the top of a weighted valve, which is lifted to a height corresponding to the suction of the motor, and more or less air correspondingly admitted. The change gearing is of the sliding pinion type, the drive on the top gear being direct except in the case of the 12-h.p. Two distinct sets of brakes are fitted; the foot-brake is on the countershaft, and is of the metal to metal double-acting variety. The rear brakes are provided with a simple device which holds the bands off the drums when not in use. Of the different vehicles on view we may specially refer to a 14-h.p. four-cylinder car

fitted with a limousine body and upholstered in green leather, and to a 28-h.p. four-cylinder car. An illustration of the latter is given in Fig. 13, from which it will be seen that it is fitted with a new type of side entrance body, which allows free entrance and exit on either side, and provides an unusual amount of room in the rear portion.

MESSES. DENNIS BROTHERS, LIMITED, for the 1904 season have made an interesting departure in adopting a worm gear drive for their 20-h.p. cars, in place of the bevel wheels previously used. The chassis on view is an excellent piece of work; it has a pressed steel frame, on the fore part of which is set a four-cylinder Aster engine of the latest type.

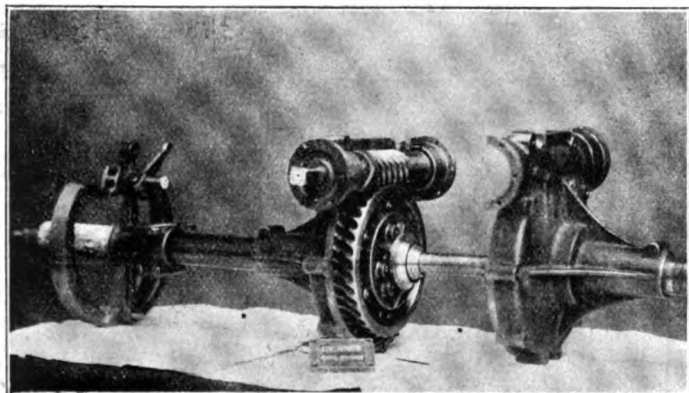


Fig. 14. The Dennis Worm Gear Drive.

In general arrangement the standard lines are followed, except so far as regards the worm gear drive. A view of the latter is shown in Fig. 14. The rear road wheels are not mounted on the axle proper, but on sleeves surrounding the latter, the power being conveyed from the axle to the wheels by jaw clutches in the hubs, as shown in Fig. 15, which also illustrates the double artillery wheels used on this car. Other features of the car are the improved steering pivots, magneto and high-tension ignition, and the spring drive between the clutch and the gear box. Messrs. Dennis exhibit two complete 20-h.p. cars with bodies built in their own works, one having a special limousine body. Examples of the Dennis 12-14-h.p. double-cylinder cars are also shown; in these the bevel gear drive is still retained. Finally, we may refer to a 12-14-h.p. delivery van, adapted to carry a load of one ton, at speeds up to 14 miles per hour. This has worm gear transmission, the double artillery wheels being shod with solid tyres.

THE MOTOR CAR COMPANY, LIMITED, exhibit five complete Decauville cars and a chassis of the new 12-h.p. type (Fig. 16). The various types of bodies fitted include a coupé, a hooded phaeton, and a Roi des Belges tonneau, as well as the standard pattern tonneau fitted to the 10-h.p.



Fig. 15.—The Double Artillery Wheel on the Dennis Car, showing the Driving Clutch.

chassis. The 12-h.p., 14-h.p. and 16-h.p. types embody all the latest Decauville improvements, including the fortified back axle and the metal shield which, securely bolted to the frame, affords additional support to the motor and protects the mechanism from mud, wet, or dust. All are fitted with the Decauville dynamo, by means of which the ignition accumulators are re-charged whilst the engine is running. The brake and clutch pedals, if preferred, can be of the "push" pattern, instead of the more ordinary type usually adopted. The new 12-h.p. car is fitted with a four-cylinder engine, having cylinders of 90 mm. diameter by 110 mm. stroke; the inlet as well as the exhaust valves are mechanically actuated. The centrifugal

governor acts on the inlet, a pedal accelerator being fitted, by means of which the speed of the engine can be increased to 1,200 revolutions per minute. A honeycomb radiator and tank is now employed in connection with the water circulation. The carburettor is of the automatic air regulation variety. Three speeds forward and a reverse are controlled by one lever, the drive on the top speed being direct, the power being transmitted through bevel gearing to a live axle. As usual in Decauville cars, the engine and gear are entirely protected, and the new model should prove as successful as its forerunners. A novelty on the stand is a petrol motor-tramcar.

RYDE MOTORS, LIMITED, have on view a well-finished example of the "Ryde" 14-h.p. three-cylinder tonneau car, of which an illustrated description was given in our issue of January 23rd last. The car is driven by cardan

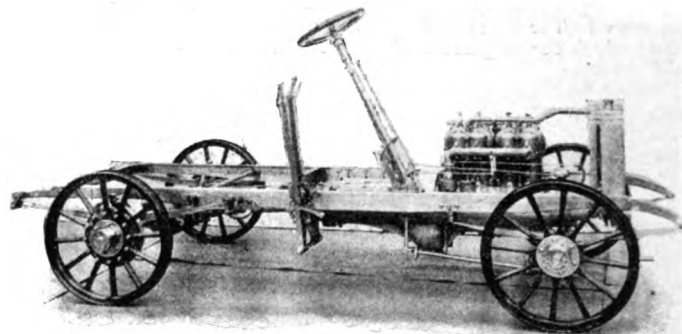


Fig. 16 —Chassis of 12-h.p. Decauville Car.

shaft and bevel gear on to a live axle, and has three speeds and a reverse, with a direct drive on the top speed. They also show a 10-h.p. car fitted with a two-cylinder horizontal engine, and with a transmission somewhat on the lines of that adopted in the Wolseley cars. The 1904 models of MESSES. A. DARRACQ AND CO. have already been fully dealt with in the *Journal*, so that it will suffice to mention that in addition to a 15-h.p. chassis specimens of the 8-h.p., 12-h.p., 15-h.p. and 24-h.p. types are on view. The frames can be lengthened to permit of the fitting of side-entrance bodies, an excellent example of this type being a 24-h.p. coupé. The frames of these vehicles, it will be remembered, are of pressed steel, having extensions formed on them, to act as a dust and mud-protecting shield to the engine and gear box (see Fig. 17).

One of the novelties of the show is, undoubtedly, the new chassis exhibited by MESSES. LEA AND FRANCIS, LIMITED, of Coventry, this being quite a radical departure from what may be termed standard practice. The frame, which is of I section steel, has arranged in the fore part a three-cylinder horizontal engine, developing 15-h.p., at a normal speed of 700 revolutions per minute. The cylinder heads are at the forward end, so as to render the valves readily accessible. The latter are vertical, both the inlets and exhausts being mechanically actuated by a cam shaft on the top driven off the crank shaft by a longitudinal shaft and skew gearing. The cam shaft is enclosed in a casing hinged to the side shaft, so that it may be lifted up to give access to the valves, which are interchangeable, and with their seatings readily removable. The cylinders are 4 in. bore by 6 in. stroke. One of the features of the motor are the long connecting rods to the crank shaft, which is parallel to the rear axle. The connecting rods, which are no less than 28 in. in length, are claimed to ensure sweetness

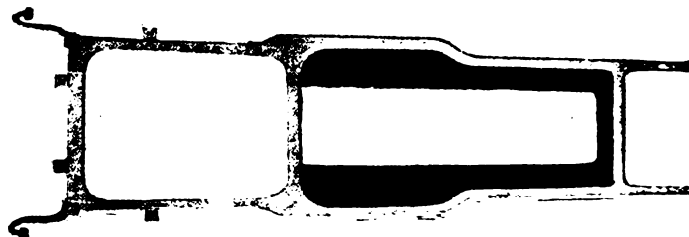


Fig. 17.—The Darracq Pressed Steel Frame.

of running, and to reduce the friction on the cylinder walls by reason of the small angle of obliquity. Further, they enable the usual intermediate chain or gear drive to be dispensed with. The governor is adapted to act both on a throttle valve on the inlet pipe and on a supplementary air valve in connection with the carburettor. The ignition is on the high-tension system, while the water circulation is maintained by a pump driven by an eccentric, and a honeycomb radiator and tank; the latter is, we noticed, mounted on rubber pads, to ensure freedom from vibration. Lubricating oil is pumped into the crank shaft, which is drilled to allow the oil to get to all the bearings, including the big ends of the connecting rods, and to the gudgeon pins of the pistons. In the transmission mechanism further radical departures are also noticeable. The crank shaft is provided at each end with a fly-wheel, containing a friction clutch. Each clutch is mounted on an extension shaft, upon the other end of which is a sprocket adapted to receive the chain from a corresponding sprocket on a live rear

axle. In order that the special method of transmission may be clearly understood it is necessary to describe in detail the construction of the live axle, a section of which is given on page 1,000. This consists primarily of a nickel steel shaft, which is continuous from one wheel to the other. Upon one end of this shaft the off-side road wheel is keyed, whilst the near road wheel (subject to the control of the balance gear) is free to rotate upon the other end of the shaft. Surrounding the shaft is a tubular sleeve, B, carrying at each end a chain sprocket. The pinions of the spur balance gear are mounted upon the face of the near-side sprocket and engage a pair of spur wheels, one of which is keyed to the internal shaft and the other to the nave of the adjacent road wheel. The main roller bearings, D, in which the axle as a whole runs, are fitted between the tubular sleeve, B, and an outer tubular casing, E, carrying the rear springs. The design of the transmission gear is such that a direct drive is obtained on the two higher speeds. The side chains are independent of each other, and the power may be transmitted through either of them at will by putting one or other of the two friction clutches into action, these giving respectively the third and second speeds. Both clutches are provided with springs which tend to put them into engagement, and a single clutch pedal withdraws them simultaneously when operated by the driver. When this clutch pedal is depressed the control or speed lever may be moved, and its position deter-

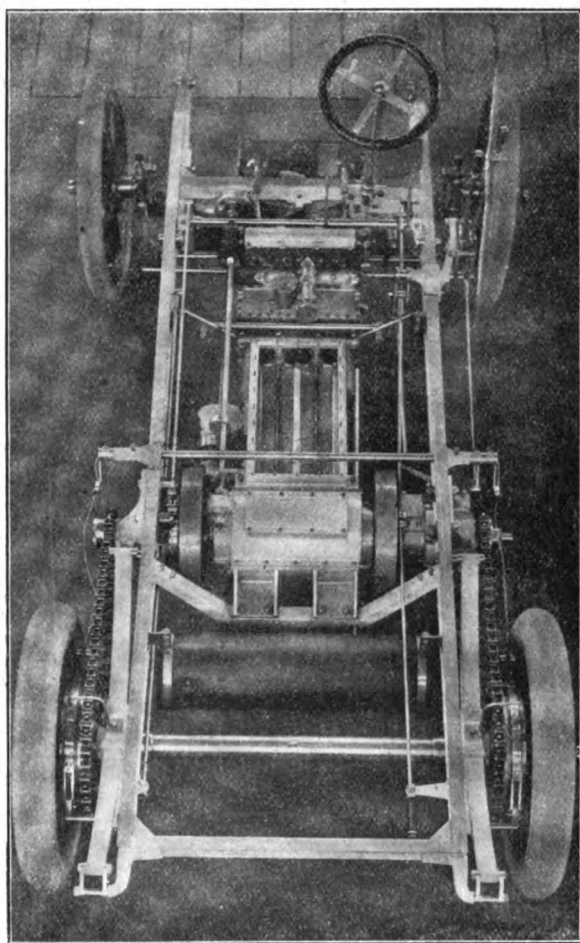


Fig. 18.—Chassis of the Lea and Francis 15-h.p. Car.

mines which of the clutches shall come into engagement when the pedal is released. The low speed and reverse motion are obtained by means of a planetary gear between the friction clutch and the chain sprocket on the high-speed side. The teeth of this gear are always in mesh, but are idle when the car is on the high gear. The foregoing description will serve to indicate the general lines of the new design, and among the advantages claimed for it one of the principal is the efficiency of transmission. By the use of the horizontal engine a low centre of gravity is secured, and the makers claim to have eliminated the objections which are sometimes raised against this type of engine on the score of inaccessibility. Owing to the position of the engine it is unnecessary to provide a bonnet of the ordinary form, its place being taken by the footboard in front of the driver's seat. The axles of the road wheels are provided with roller bearings and ball thrusts, as are also the main bearings in the transmission gear. The chassis complete weighs about 16 cwt. Altogether the vehicle is a complete departure from existing practice, and its behaviour on the road will be watched with considerable interest.

Heavy vehicles for commercial and public service work form the striking feature of the exhibit of MESSRS. MILNES-DAIMLER, LIMITED. Two of the 'buses bear the name Great Western Railway, and represent

further additions to the fleet of vehicles which the Great Western Company are now running in districts not served by railways. One is a double-decker, accommodating thirty-four persons, and the other has accommodation for twenty inside passengers. Both are fitted with 24-h.p. four-cylinder motors, the power being transmitted through a clutch and gear box on to a cross shaft at the rear. On the ends of the latter are pinions



Fig. 19.—The Milnes-Daimler 'Bus for 34 Passengers.

engaging with internally toothed rings bolted to the rear road wheels. As illustrating the favour with which these vehicles are being received we may mention that the Milnes-Daimler Company are supplying six to the Great Eastern Railway Company, twelve to the Birmingham Motor Express Company, and four for a service between Brighton and Hove. The Hastings and St. Leonards Omnibus Company, Limited, who have six in use, one of which is illustrated herewith, have ordered four more, while the Eastbourne Corporation have ordered an additional three. A feature of the vehicles is the provision of wood wheels, each having two solid rubber tyres, side by side. In the delivery vehicle section are shown a 9½-h.p. lorry to carry 2½ tons, and a similar vehicle, fitted with a box van, to carry a ton, the latter being intended for the Furness Railway Company. Messrs. Milnes-Daimler's latest production is a delivery vehicle, the engine of which is adapted to use ordinary petroleum as fuel in place of the more expensive petroleum spirit. Of this type two lorries are shown, a 12-h.p. two-cylinder one designed to carry 3 tons, and one of 20-h.p., four cylinders, for 5 tons. These vehicles, as regards transmission, are on the same lines as the 'buses but are fitted with ball bearings throughout. We hope to deal with them more fully in a subsequent issue.

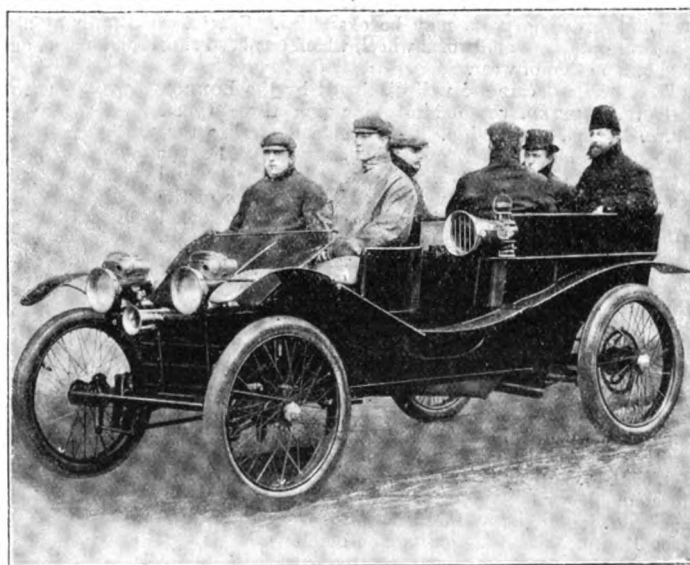


Fig. 20.—The Lanchester 18-h.p. Water-Cooled Car.

The LANCHESTER ENGINE COMPANY, LIMITED, have recently considerably increased the scope of their operations, as will be seen from the fact that in addition to 10 and 16-h.p. air-cooled types, two new models of cars, 12 and 18-h.p., with water cooled engines, are displayed. Two pumps are provided for the circulation of the cooling water; the radiator is fitted in front of the car, the steering rod having been placed forward of the axle

instead of behind, as in the 10-h.p. types. All the well-known Lanchester features, such as the worm-gear drive and special body suspension, are retained; while among new departures we notice that one of the cars is fitted with a special form of artillery wood wheel. A Lanchester car with artillery wheels has a somewhat strange look, so accustomed are we to the cycle-type wheels hitherto employed. Another point that we noticed is in connection with the mudguards; these are of what is known as the stream-line

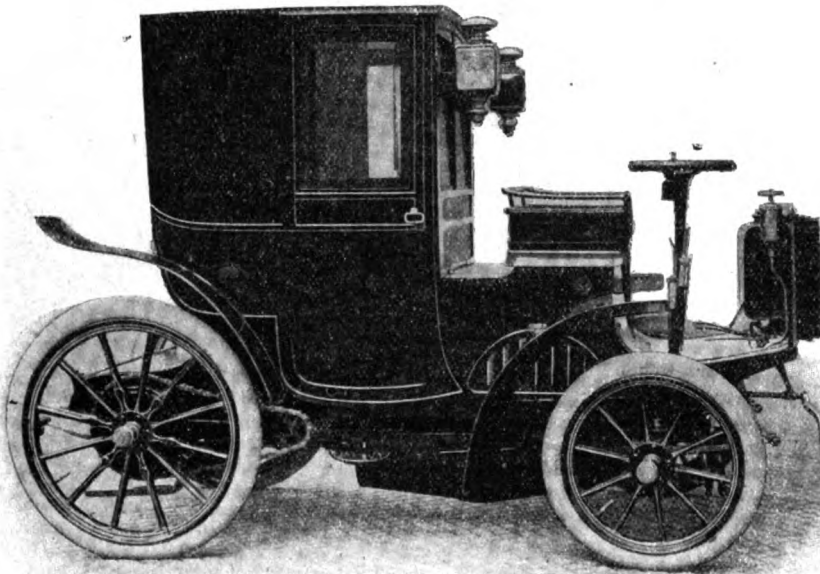


Fig. 21.—The "Pipe" 12-h.p. Coupe.

type, they being continuous when the car is running. To allow easy entrance to the driver's seat, a part of the guard is so connected to the pivoted dashboard that as the latter is drawn forward the guards are raised into position and *vice versa*. Those motorists not conversant with the Lanchester system should make a point of visiting this stand, as it is one of the most distinctive in the show. Apart from the complete cars a special technical exhibit is staged, in which working models, actual dissected portions, are shown in operation. It includes a motor dissected to show all the internal organs and their functional operation. A rear frame (complete) and a rear frame (sectional) are exhibited, which give a complete idea of the construction of the worm transmission, balance gear, etc. These exhibits are so arranged that they can be turned round by hand so that the working of the parts may be examined. Special attention may also be drawn to a worm and worm wheel, which has been run 17,000 miles, and yet shows no sign of wear.

The "Pipe" cars are well displayed by the LONDON MOTOR GARAGE COMPANY, LIMITED, the exhibit including three types, 12-h.p., 15-h.p., and 20-h.p. The engine comprises four cylinders with mechanically operated inlet valves. Except as regards the clutch the "Pipe" cars follow the general lines of chain transmission vehicles. The clutch is of the Jenatzy magneto type, in which the engine is connected with the gear box by means of discs, which become magnetised and attracted one to the other when a current of electricity is sent through them. The current is furnished by a small battery kept charged by a dynamo driven off the engine, or can be supplied directly from the dynamo. There is no possibility of slip with this clutch, which, with but a light pressure on the pedal, makes practically a solid connection between the motor and the gear shaft. Fig. 21 shows the "Pipe" 12-h.p. side-entrance coupé, in which the engine is located under the driver's seat, the latter being hinged to give access to the motor. The car is exceedingly quiet in operation, and is equally well adapted for town as for country work. The London Motor Garage Company also have on view two of the 18-h.p. Mercedes cars, to the details of which no reference is necessary on the present occasion. Some of the cars on this stand are fitted with a new anti-skidding band to the tyres, known as the "Desclée."

THE BEAUFORT MOTOR COMPANY have an excellent array of the popular Beaufort cars, which for the 1904 season are being made in five sizes, ranging from 9-h.p. to 24-30-h.p. The latter is an entirely new model; it is a chain-driven vehicle having a pressed steel frame and four-cylinder motor, the cylinders being 110 mm. diameter by 125 mm. stroke. The valves are all mechanically actuated; while two ignitions, the Bergmann magneto and the high-tension system by coil and accumulators, are provided, both being advanced and retarded by one lever. A small four-way switch

is mounted on the dashboard, by means of which the two systems may be used together, or each separately, and all interrupted. Four speeds forward and a reverse are provided, while the driving wheels are shod with 920 mm. tyres. The other cars are of the cardan-shaft driven type, with live axle running in a sleeve extending the whole of its length. The 9-h.p. has a single cylinder motor, the 10-h.p. and 12-h.p. two, and the 15-20-h.p. four cylinders; all have gear-driven magneto and three speeds, in addition to the reverse. An illustration of the 12-h.p. Beaufort Princess side-entrance car is given in Fig. 22. The larger cars are fitted with a governor, which, in addition to controlling a throttle valve on the admission pipe, allows, when the latter is closed, fresh air to be drawn into the cylinders. The quality of the mixture can also be regulated by means of an adjustable cap on an air inlet on the dashboard leading to the carburettor. The brakes are of the internal expanding type; while on the 15-20-h.p. car we noticed that the steering pivots are now mounted within the hubs on the front road wheels. Altogether, there are many points of interest in the latest Beaufort cars.

The SIDDELEY AUTOCAR COMPANY introduce two new models to the motoring world, one a two-cylinder car of 12-h.p., with cylinders of 4½ in. by 4½ in., and the other an 18-h.p. four-cylinder car, with 4 in. bore and 4 in. stroke, built to their specification by the Wolseley Tool and Motor Car Company. With the exception of the engines, the main features of each of these vehicles are identical, so that the following particulars may be taken as applying to both. The frame is of pressed steel, strongly braced at intervals and strengthened by plate webs at the angles. The motor is located in the front of this, under a bonnet in the usual way. The cylinder jackets are of aluminium, and are cast in one piece with the top half of the base chamber, the cast-iron liners for the cylinders being forced into the aluminium casing. The top of the cylinders and valve pockets are a separate casting bolted on. Ample spaces have been provided for the water circulation, and the jackets of the head and cylinders are connected by outside pipes, so that there are no water joints in the cylinders proper. The crank-shaft has hollow crank pins, a small hole being drilled through each pin at right angles, so as to ensure thorough lubrication of the big end bearing. Both valves are mechanically operated by a single shaft on the left-hand side of the engine. The inlet valves are located directly over the exhaust, and actuated by means of vertical rods and tappet levers. The inlet valves are provided with a variable lift device, controlled by means of a small lever on the steering wheel. The water circulation is maintained by a gear-driven pump and a cellular radiator, these being so arranged that but short lengths of piping are required. The carburettor is of the automatic air-regulating type, a disc held by a spring being raised as the speed of the engine rises, and thereby admitting a further supply of air in direct proportion to the requirements of the engine. The governor is of the usual form and acts on a throttle of the pierced disc pattern between the carburettor and the motor. It can be put out of action by the usual foot accelerator. The combination of the automatic carburettor and variable lift of the inlet valve results in a very elastic engine, the speed of which can be regulated between 80 to 1,800

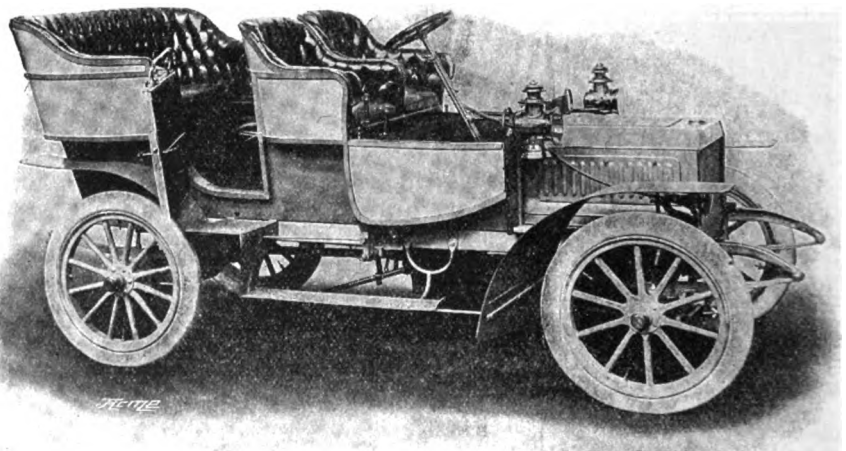


Fig. 22.—The Beaufort Princess 12 h.p. Car.

revolutions per minute, the normal speed being about 1,000. Ignition is on the high-tension system, the accumulator being located on the dashboard. Coming to the transmission, the power is conveyed through a large diameter leather-faced clutch. The connection with the primary shaft of the change-speed gear is by a universally-jointed shaft, so arranged that it can be detached without disturbing the gear. Four speeds and one reverse are controlled by a lever, which has a positive stop at each speed. The

change gear box and the differential, are all carried in what is practically one casing. The shafts run on ball bearings throughout, and are also provided with ball thrusts where required, this applying to the counter-shaft as well as to the two shafts in the gear box. The teeth of the pinions in the latter are one inch in width, the gear throughout being strong enough

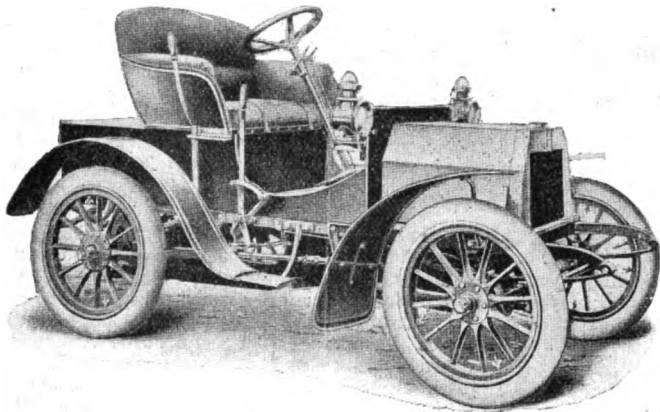


Fig. 23.—The Siddeley 6-h.p. Car.

to take a much higher power than it will ever be called upon to transmit. From the differential shaft to the rear road wheels the power is transmitted by side chains. Both the hand and foot brakes are concentrated on the rear wheels, the pedal brake expanding inside the brake drums, and the side brake being of the ordinary external band type, provision being made for keeping the bands away from the rings when the brakes are out of action. The chassis of the 18-h.p. car weighs 14½ cwt., and has a wheelbase of 7 ft. 10 in. That of the 12-h.p. weighs about 3 cwt. less, and has a

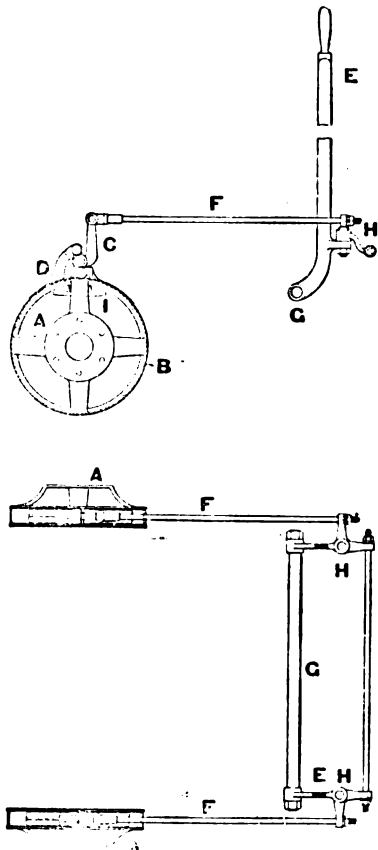


Fig. 24.—Elevation and Plan of Rear Brakes on Argyll Cars.

- | | |
|---------------------------|-----------------------------|
| A Brake Drum. | F Brake Rods. |
| B Brake Drum Steel Bands. | G Brake Shaft. |
| C Actuating Lever. | H Compensating Bell Cranks. |
| D Brake Band Clips. | I Brake Pivot Bracket. |
| E Brake Lever. | |

7 ft. 1 in. wheelbase. The Siddeley 6-h.p. two-seated car is shown in Fig. 23. The frame is of section steel; the motor is of the single-cylinder horizontal type, 4½ in. bore by 5 in. stroke, developing 6-h.p. at 800 revolutions per minute. The radiator is of the enclosed type, fitted with Clarkson detachable tubes, the case of the radiator forming the water tank,

and the whole fitted in the front of the bonnet. The water is circulated by a gear-driven slow-running pump. The transmission is arranged as follows:—A gear box is attached to the same brackets as the motor, to which it is connected by a chain and driven by a clutch on the first shaft of the gear box; from the secondary shaft of this gear box a chain runs direct to the rear live axle. The gear box is designed to provide three

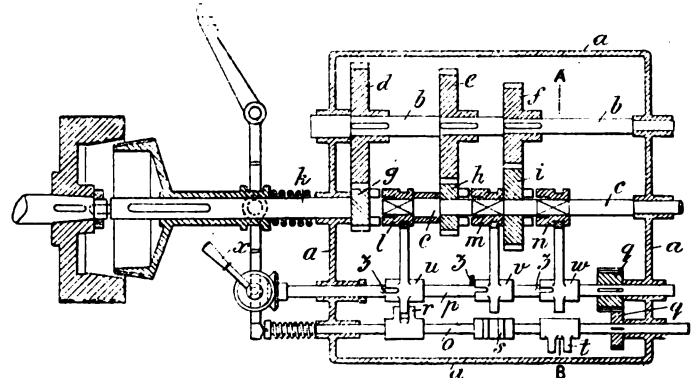


Fig. 25.—Sectional View of Langdon-Davies Change-Speed Gear.

forward speeds and one reverse speed by means of sliding gear wheels in the usual manner. Three brakes are provided, two on the hubs of the rear wheels actuated by side lever, and one on the differential box worked by a pedal. In addition to the standard two-seated car, one vehicle of this type is shown with a landaulette body adapted for doctors' use.

The 1904 models of Argyll cars have already been fully dealt with in the *Journal*, so that we need only mention that the HOZIER ENGINEERING COMPANY, LIMITED, make a big display of the same on a stand designed to indicate the country in which they are constructed. Of the 10-12-h.p. two-cylinder cars a tonneau and a van to carry 15 cwt. are displayed, the latter having 3 in. solid rubber tyres. These cars are fitted with thermo-siphon water circulation, no pump being used; a new departure in this system is the fitting of the water tank and radiator in front. The 9-h.p. single-cylinder car is also represented, while a chassis and a coupé of the 12-14-h.p. three-cylinder type may also be inspected. This car weighs 16 cwt., and the makers claim to have got over the difficulty of tyre troubles by using 105 mm. tyres—a very large size for this weight of car. The largest, and one of the finest cars on the stand, is a 16-20-h.p. four-cylinder tonneau, with a body of walnut trimmed in red leather. The band brakes on the rear wheels of the Argyll cars are illustrated diagrammatically in Fig. 24. They are of the metal-to-metal type, and act equally well whether the car is running in a forward or backward direction. The brake drums, A, are made so that the centre disc forms the wheel flange, thus preventing the weakening of the spokes by drilling holes in them for fixing the drum to the wheel. The double-acting movement is obtained by the lever C, which is operated by the hand lever E through the rods F. The compensation action is secured by obtaining the brake brands through the bell cranks H.

The LANGDON-DAVIES MOTOR COMPANY, LIMITED, have on view the "Soames" delivery van illustrated on page 949 of our issue of the 6th inst. This is fitted with a 12-14-h.p. Aster motor, and is able to carry its full load of a ton at speeds up to 12 miles per hour. The transmission is by means of a cardan shaft on to a live axle. The friction clutch between the engine and gear box is of novel design; it is of the metal to metal type, and, contrary to the usual practice, runs in oil. Another feature of the vehicle is the change-speed gear, of which a working model is shown, and of which we give a sectional view in Fig. 25. As will be seen, the gear-wheels are always in mesh, and are locked to the shaft

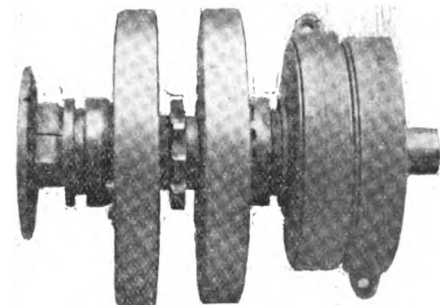


Fig. 26.—The Change-Speed Gear on the Jackson Tourist Car. (See page 998.)

as required by interlocking jaw-clutches. When the clutch pedal is pressed down, it first releases the sliding clutch, then unclutches the wheel which happens to be in gear, and allows the selection of another gear-wheel by means of the handle x, which, in the van, is fixed in front of the driver. When the pedal is released and rises, the spring pulls the cam-shaft o, and, through the medium of one of the forks u, v, w, operates one of the clutches l, m, n. The clutch l engages the shaft k, giving a direct drive on top

speed. The pins and slots *z* on the rod *p* prevent the handle *x* from being moved, except when the pedal is fully depressed, and also prevent any but the selected gear from being engaged, the handle being definitely locked except when the pedal is depressed. The car can thus be left even with the clutch in, and all the change gears in the neutral position, without any danger of the car being started by any unauthorised person. The system is, of course, applicable to more than the three speeds and reverse as shown in the diagram. The makers claim that the system is such that a motor-van fitted with it can be safely entrusted, after a few days'



Fig. 27.—The Electromobile Single Landulette.

tuition, to a carman of ordinary intelligence, accustomed only to horse-drawn vehicles.

The MOTOR-CAR INDUSTRIES COMPANY display several of the "Jackson Tourist" cars, which have been improved in several details for the 1904 season. The engine is of the horizontal single-cylinder type of 8-h.p. and fitted with a heavy flywheel. The motor is coupled direct by means of a flange to the transmission gear, which gives two speeds forward and one reverse. The gear, which has been made much larger than last year, is still very compact, measuring over all 14 in. by 9½ in. A view of it is given in Fig. 26; on the top speed the drive is direct on to the sprocket, which, by a single chain, conveys the power to the rear axle. Combined with the change gear are two powerful band brakes. It is operated by means of one hand lever, which, in connection with the foot control on the mixture passage of the carburettor, will allow the car to be run at any speed from two to twenty-six miles per hour. The live axle is fitted with a spur gear differential in the centre, and runs on ball bearings. Altogether the car, which is made for both two and four passengers, should fulfil the requirements of those looking for a popular-priced vehicle.

ELECTRICAL EXHIBITS.

A new exhibitor is the N. S. ELECTRIC STORAGE COMPANY, LIMITED, who show a battery claimed to withstand the jolting associated with motor-cars. Porous diaphragms separate the elements and prevent the disintegration of the active material. This latter is of a hard and yet highly porous nature so that the cells can be discharged at high rates. The porous nature of the active material and separators secures that sufficient electrolyte is retained within the pores to allow the batteries to continue in action for some considerable time should it happen that a cell becomes fractured.

As usual, MESSRS. PETO AND RADFORD have a display of electrical ignition accessories, accumulators, terminals, protectors, etc. The distinct novelty shown is the "Energy" battery, which consists of a combination of a secondary and primary battery, which is outwardly similar to the ordinary type of accumulator, in celluloid case. There is, however, this essential difference, that there is one negative plate between two positive ones, the former consisting of a lead envelope formed by a couple of lead sheets so joined as to form a pocket. The battery is charged as an accumulator, but the negative plate having no capacity renders the voltage of the battery nearly zero after an hour's discharge. The battery stands, therefore, at zero, and no loss in current takes place. When current is required, a pellet of cadmium is dropped into the negative pocket in each cell; four volts pressure is then obtained instantly, and the battery is ready for use. When the cadmium is removed the battery ceases work. An obvious advantage of this plan is the facility with which the batteries can be conveyed without damage to the negative plate, while the current can be obtained for stated distances as desired. Further, the terminals will not corrode by electrolytic action when not in use, and when there is no cadmium in the negative plate it is impossible for a short circuit to occur, as the voltage of the battery is zero.

The ELECTROMOBILE COMPANY, LIMITED, display examples of their electric landaulettes (see Fig. 27), and coupés, a most comfortable vehicle being a victoria mounted on C springs. As is well known, the feature of these vehicles is the employment of a straight frame, the same as in a petrol car, enabling a low-built carriage to be produced. The Contal-Gasnier 8-h.p. electric motor drives the rear axle through spur gearing. The battery comprises forty-four cells, the capacity of which is sufficient for runs up to forty miles on one charge. The controller, the handle of which is mounted on the inclined steering column, is adapted to give five forward speeds, reverse, two electric brakes and stop.

The LONDON ELECTRO-MOBILE SYNDICATE, LIMITED, have a number of different models of light electrical cars, these including a two-seated runabout, a stanhope, a brougham, and a light van to carry loads up to 4 cwt. The vehicles are propelled by an electric series-wound motor located at the rear, and driving on to the back axle through centrally-

located enclosed spur gearing. The power is furnished by a battery of forty-two accumulators of the Hart type carried in the rear portion of the body, one charge being sufficient for a run of from thirty-five to forty miles on good roads. The controller is of the series-parallel type, adapted to give five forward speeds, two reverse motions, and two electric brakes. A pedal actuates a band brake on the rear axle. Steering is by means of a tiller or inclined wheel. Solid or pneumatic tyres can be fitted to the road wheels, which are of the artillery type. The "Lems" cars, as they are termed, appear to be especially adapted for doctors' use, and have already been adopted by several members of the medical profession. The runabout, with detachable brougham top, is designed to be driven from the inside, while the brougham (Fig. 28) is arranged for those who desire a professional driver.

GENERAL EXHIBITS.

In the Industrial Court the Palmer cord motor tyres, which were exhaustively described and illustrated in a recent issue of the *Journal*, are shown, the peculiar method of manufacture being demonstrated, and a mechanical arrangement having been set up by which it is possible to prove the resiliency of the tyre. It is extremely difficult to introduce novelties into the exhibition of tyres, but the PALMER TYRE COMPANY have succeeded in this. The NORTH BRITISH RUBBER COMPANY, LIMITED, have a full assortment of Clincher and Clincher-Michelin motor tyres, and also solid motor tyres, the merits of which are well known to motorists. Motor rugs are also among their exhibits, interest in which is increased by an assortment of motor coats and motor leggings. In thus associating themselves with the growing business in clothing for automobilists the North British Company have a wide field for their activities. At the next stand is the display of the DUNLOP PNEUMATIC TYRE COMPANY, LIMITED, which comprises tyres of all sections, valves, repair outfits, etc. The company have introduced two new sizes in motor-car tyres, viz.—100 mm. and 105 mm. In waterproof motor clothing the company is increasing its selection, and the "Autosacque" coat is of good material and equally effective design. The MARTIN PNEUMATIC TYRE COMPANY, LIMITED, are now giving special attention to square treads, especially for the driving wheels, and specimens of these for motor-cars are shown. Another tyre likely to be of interest is that shown by the WILLIAMS TYRE COMPANY. This is of the solid variety, and is so attached as to avoid all risk of creeping. A steel band runs round the rim and passes through the rubber of the tyre, being firmly secured by a steel screw. The rubber has a certain amount of play, the hole passing through it being slightly larger than the band. When compressed the rubber comes into contact with a flat surface, thus obviating all risk of cutting the tyre. In view of the discussion lately taking place in the *Journal* on this subject much interest is being shown in the Williams tyre.

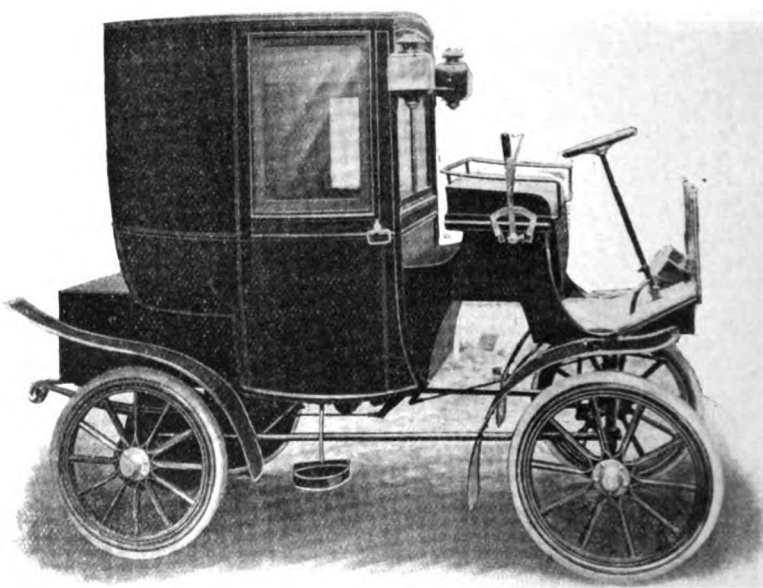


Fig. 28.—The "Lems" Electric Brougham.

Somewhat isolated from the rest of the Exhibition the WILKINSON TYRE AND TREAD COMPANY, LIMITED, have a good show of tyres, treads, rims, and covers. It is claimed for the Wilkinson tread that it prevents side slip and protects the tyres from cuts and punctures on the tread. The price list issued by the company is made useful to motorists by the instructions for fixing covers, etc., and by the excellence of the illustrations. A useful display of motor tyres is made by MESSRS. W. AND A. BATES, LIMITED, in which non-slipping bands for motor-bicycles and "Cutcure" patches for the repair of motor-tyres are conspicuous.

The SELF-SEALING AIR CHAMBER COMPANY, LIMITED, has a good type of gaiter, consisting of rubber and canvas with a layer of wire gauze at the

edge, into which the eyelets or hooks are inserted to prevent any loosening when fastened. Several good examples of motor tyre repairs are also on view, while the "Hermetic" special motor solution has many points of recommendation. The special feature to which the ANDERSON MOTOR TYRE COMPANY, LIMITED, draw attention is their plan of vulcanising repairs to motor tyres, and several examples of its application are shown. The tubes are repaired from the inside in a way that is claimed to reduce friction with the outer cover.

The tailors are located together in close proximity, and it is clearly apparent from a glance round that the tendency towards the ordinary attire in motoring garments continues—a fact upon which all concerned may be congratulated. MR. C. R. BASE, whose removal from Chancery Lane, to Regent Street, W., we announced last week, makes a very good display, and seems to have made a feature this year of soft leather goods, including leggings and gloves. The leggings are of brown leather and can be folded up into a size to go into the side pocket of coat or jacket, while the similar pliability of the gloves is a point of commendation. Mr. Base has some good pony coats with ladies' caps to match, thus securing the interest of lady visitors in his stand. A new leather cap with a rear piece to go over the ears, and give a better appearance than the ordinary flap, is another speciality; while the combined boot and trousers, to go as an over-all protection in cold weather, is a further special feature of a display of all-round excellence. MESSRS. SAMUEL BROTHERS, LIMITED, show their "Dreadnought" motor coat and "Omne Tempus" raincloth cloth, both of which give them a favourable introduction to automobilists. MESSRS. SALSBUARY AND SON, LIMITED, have a display of "Komilfo" clothing, comprising every requirement of the motorist in the way of raiment.

MESSRS. HOARE AND SONS have a wide assortment in motorists' clothing in "all wool," leather and fur, and they have been able to demonstrate a practical acquaintance with the needs of drivers and passengers, in place of the theoretical lines upon which so many tailors depended in the early days. In the width of the skirt they have given their coats, the number and amplitude of pockets, and in general design Messrs. Hoare and Sons have deserved the attention of those who motor. AQUASCUTUM, LIMITED, have an interesting assortment of high-class clothing, to which their distinctive title has been applied.

MESSRS. A. W. GAMAGE, LIMITED, are devoting attention to their motorists' tailoring department, with a view of making it as thoroughly representative as is their accessories' branch. Cloth raiment is a feature in which they have some good designs, and the method of securing the collars of the coats by a lappel, which is part of the garment, instead of being an addition buttoned on, should be observed. Leather clothing for motor cyclists, as well as drivers of cars, is another extensive section of the display, in which furs, pony skins, etc., find a place, as well as some good combination garments, notably a rug and coat forming a serviceable piece of attire when the weather is inhospitable.

Among the well-known provincial carriage builders now devoting study to the production of motor-car bodies is the firm of MESSRS. HOLMES AND CO., who make a first appearance at this show with several examples of carriage work, including tonneau, brougham, and coupé bodies, characterised by a good bold design. MESSRS. HAYES AND SON are also showing bodies for motor-cars, giving particular prominence to a covered van body for delivery purposes. This firm are evidently intending to take an important place in catering for the requirements of the automobile industry.

Motor-car wheels are shown by MESSRS. SAVAGE BROS., LIMITED, and from Liverpool come MESSRS. JOSEPH OWEN AND SONS, LIMITED, with a fine display of bent timber and panel boards for motor-cars. The collection includes tonneau sides, wings, bucket seats, and other bends in walnut, birch, and canary white wood; birch and ash for the bottom boards and sides, hard ash for frames, etc. An assortment of bent hickory rims for felloes and cleft hickory and oak spokes is also comprised in a exhibit of much interest to those responsible for the carriage work of motor-cars.

The CAR AND GENERAL ASSURANCE COMPANY are taking advantage of the Exhibition to give publicity to their appointment in connection with the Motor Union, and to draw attention to their terms for car and accident insurances. At another stand the LAW ACCIDENT INSURANCE SOCIETY, LIMITED, call attention to their special insurances for motor-car owners, which include indemnities against seven of the risks associated with motor-car ownership. This insurance question is also being presented by the GENERAL ACCIDENT ASSURANCE CORPORATION, LIMITED, whose policies cover all risks incurred by automobilists. The EMPIRE KEY ASSURANCE COMPANY are busily engaged in making known the merits of their particular line of business to visitors.

The importance of aluminium in connection with the automobile industry is revealed by the BIRMINGHAM ALUMINIUM CASTING COMPANY, LIMITED, and by MESSRS. MILLS AND CO. The latter have an assortment of every kind of aluminium castings for motor-car work, while the Birmingham company show a complete range of castings for motor-cars, motor-cycles, etc., including their patent brazeless aluminium-jointed frames. Brass and aluminium steel castings are a feature of the display worth more than a cursory glance. The castings shown vary in weight from an ounce to a hundredweight.

MESSRS. ARMSTRONG, STEVENS, AND SON have a collection of well-finished tubular and honeycomb radiators, bonnets, tanks, carburettors, etc., as well as forgings and stampings illustrative of the facilities they possess for doing good work. Their bonnets are well designed, and filled with patent catches to prevent the rattling often associated with such

motor-car "millinery." Petrol tanks with protected gauges at the side are also shown, while the construction of the honeycomb radiators is on the best lines.

MESSRS. RUBERY AND CO. and MESSRS. W. BEARDMORE AND CO. make bold displays of frames for motor-cars. The latter firm show pressed steel frames for 12-h.p., 16-h.p., and 24-h.p. cars, all with hydraulic-riveted joints. Pressed steel sections and sections of rivet joints complete a display of practical value to makers, who will doubtless look forward to Messrs. Beardmore and Co.'s appearance at the Agricultural Hall Exhibition next month.

Specimens of solid steel stampings for motor-cars, both the lighter types of vehicles and those for the transport of goods, are exhibited by MESSRS. T. SMITH AND SON, OF SALTLEY, LIMITED. This firm have had half a century's experience of this class of work, and claim high merit for drop forgings or stampings in both iron and steel.

Motor-car chains are shown by the COVENTRY CHAIN COMPANY, LIMITED, in all sizes, from $\frac{1}{2}$ in. to $2\frac{1}{2}$ in. pitch, the attention of the trade being particularly drawn to the fact that the brushes are integral with the side plates. MESSRS. BRAMPTON BROTHERS show no less than seventy sizes and patterns of motor-chains, several of which can be seen on various cars in the Exhibition.

MR. H. S. EYRE shows a new "anti-skidding" device. This consists of a series of loops or bands of twisted steel wire, so arranged that when the wheel is in motion they revolve with it and gently come in contact with the surface of the road, having, however, no effect on the course of the wheel until a lateral or side-slip takes place. When this occurs the wire loops or bands fall consecutively under the tread of the tyre, thus offering sufficient resistance to compel the wheel to again assume a direct course. It is pointed out that the appliance cannot injure the tyre; in fact, it does not come in contact with it unless a side-slip takes place. When not required the appliance can be folded back over the hub, and another of its advantages is that it need not be removed to put on a new tyre or inner tube. The device has been tested at high speeds for some hundreds of miles on a 10-h.p. Panhard over the most variable condition of slippery roads, and we are informed that in no instance has a side-slip occurred when it has been in use.

In oil cans MESSRS. J. KAYE AND SONS, LIMITED, have a serrated oil can with a slide feed hole. The slide is operated automatically by merely opening and closing a hinged lid linked to the original slide. The feed hole is thus kept perfectly clean. The Economiser for storing oil, etc., is well known, and has been adopted by many motorists.

MESSRS. W. H. WILLCOX AND CO.'s display includes special qualities of motor lubricating oil and motor gear oil and greases. A number of appliances are also shown, such as the Willcox semi-rotary motor pump for circulating the water in the water jackets of motors; the well-known Penberthy automatic injector for steam motor-cars, a device designed to accomplish the extra duty required for feeding the boiler on motor-cars. Hose, motor cloths, belting, lubricators of all kinds, tools, etc., are included in this display, as well as a storage cabinet, which, adopted in the garage, will help towards cleanliness in storing lubricating oil, etc.

The "Quick-Grip" spanner and nut-gripping pliers is shown by MESSRS. A. G. TAYLOR AND CO. This is a useful little device for getting at nuts in awkward angles and positions. GARLIO—a well-known cloth for cleaning the bright parts of automobiles—is on view at the north end of the Palace, and its merits have won ample commendation from users. Among a selection of tools and appliances for general engineering and motor work on the stand of MESSRS. R. MELHUIS, SONS AND CO. will be seen a good tool kit as well as several minor fittings and accessories for use on cars.

MESSRS. G. T. RICHES AND CO. make a special point of the "Eisemann" high-tension magneto, which has been previously described in these columns. Their exhibits also include a new wipe contact, the parts of which are interchangeable, auto-tremblers, carburettors, accumulators, tool kits, etc. As an instance of the thoroughness with which Messrs. Riches and Co. cater for the requirements of motorists down to the minutest detail, we may mention that they are putting up split pins and spring washers in small boxes of assorted sizes.

The display of chronographs, etc., made by MESSRS. S. SMITH AND SON, LD., is of special interest to motorists, and we would suggest that the police authorities might also visit their stand with advantage to the cause of accuracy and truth. In motor timepieces are some good types, various patterns for adjusting to any position on the car being a conspicuous feature. The chief interest of the display, however, centres in the firm's improved speed indicator, which is guaranteed to secure accuracy despite any excessive vibration that may be apparent on the car. The indicator is made so that the indicating hand is driven from the centre of the dial, thus governing the entire circle for the spacing of the miles intervening from five to fifty. In the distinctness with which these are shown is an advance that should be appreciated. Uniformity of spacing is also another merit of the device. Upon the stoppage of the vehicle the indicating hand, which in action has no shake or back lash, returns to zero. The indicator can be set for wheels from 28 in. to 40 in. A rim of gun metal is bolted on to the inside hub of the wheel and a small fibre wheel is held friction tight by the employment of a strong spring, a flexible shafting being the connection between the instrument and the driving wheel of the car. In their latest indicator Messrs. Smith and Son, Limited, have achieved a decided success.

(To be continued).

OUR DIRECTORY OF "NUMBERS."

[ALL RIGHTS RESERVED.]

Below is a further instalment of Automobile Numbers. Motorists who have not yet communicated with us are invited to forward their Names, Addresses and Numbers.

Osborn, B. O., Halifax	C.P.	17
Paley Bros., 68, Newgate Street, Morpeth	X.	202
Parkhouse and Sons, Bedford Street, Plymouth	C.O.	3
Parkyn, D. Adamson, The Gerrards, Gee Cross, near, Manchester	D.B.	3
Pascall, J., Ltd. 100-101, Blackfriars Road, S.E.	A.	2066
Parsons, E. Hazeldene, Elburton Cross, Plymouth	T.	28
Paul, W. and Company, 87 and 88, Barrack Street, Colchester	E.F.	11
Pears, E. G., Aberystwyth	E.J.	6
Pilley, H. T., 9, Bargate, Boston	D.O.	6
Plucknett, Allan, 22, Warmington Road, Herne Hill, S.E.	A.	1702
Powell, G., Adare Cycle Works, Bridgend, Glamorganshire	L.	121
Powell, W. J., St. Columb	A.F.	146
Prout, W., Launceston, Cornwall	A.F.	1
Prynn, C. H. A., Anlaby Road, Hull	A.T.	28
Quarry Laundry, Great Marlow, Bucks	B.H.	55
Richardson, S. R. Stanton Avenue, West Didsbury	N.	107
Riley and Son, J., Blackpool	B.	402
Ripon, Marquis, Studley Royal, Ripon	C.	327
Roberts, B. H. St. Clair, Church Street, Birmingham	C.	138
Roberts, Dr. C. Hubert, 21 Welbeck Street, W.	C.	139
Roberts, Fred, Aberystwyth	C.	140
Robertson, J., 31, Buccleuch Place, Edinburgh	C.	141
Robson, C. W., Motor Garage, Malton	C.	142
Russell, P. L., Livingstone Villa, Malton	C.	143
Scott, G. Shaw, Doveridge, Four Oaks, Sutton Coldfield	O.	142
Shaw, J. Stuart, "Fernroyd," Highgate, N.	A.	128
Skurry and Co., Swindon	E.J.	4
Smith, Albert, Lotley Chase, Linthorpe, Middlesbro'	S.	103
Smith, James, Grantham	A.J.	16
Smith, W. J., 44, Canwick Road, Lincoln	A.J.	78
Southey, James, 51, St. Ronan's Road, Southsea	A.C.	6
Stanton, O., 5, Cornwall Mansions, Clarence Gate, N.W.	A.	2708
Steele, A. E. J., Barnes	A.M.	132
Studs, Jacob, World's Fair, Southampton	D.C.	15
Taylor, A. H., 7, The Mount, Malton	C.T.	64
Tebbutt, S., "Bagenholt," Northlands Road, Southampton	F.E.	30
Underwood, Wm., Albert House, Dukinfield	B.K.	5
Watney, Coombe, Reid and Co., Stag Brewery, Pimlico	A.	54
West Kent Brewery, Camberwell	P.	319
White, E., "Imperial" Cycle and Motor Works, Boston	A.X.	66
White, F. J., King Edwards' Avenue, Chelmsford	A.J.	13
Wilkinson, B., Surbiton Place, Preston New Road, Blackburn	C.R.	2
Witting, W., Wenlock Street, Hull	C.R.	4
Wright and Co., Newland, Lincoln	M.	163
Yandle and Sons, West Street, Ilminster	H.	317
	A.	2843
	D.O.	24
	F.	205
	C.B.	11
	A.T.	75
	F.E.	13
	F.E.	14
	F.E.	15
	Y.	124

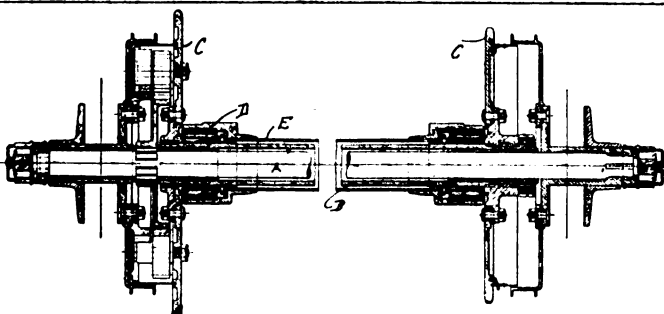
(To be continued.)

DEALERS' MARKS.

Dealers are requested to send their general identification marks for inclusion in our list.

Ace, George, Motor and Engineering Works, Tenby	D.E.	G.A.
Automobile Agency, Percy Place, Dublin	I.K.	A.
	I.K.	B.
	I.K.	C.
	I.K.	D.
	I.K.	E.
	T.	A.
Bale, S. J., and Company, Newport Road, Barnstaple	C.R.	B.
Birmingham and Coventry Cycle Company, 165, Above Bar, Southampton	O.	J.B.
Bourne, J., and Son, 7, St. Mary's Row Birmingham	A.E.	C.
Bristol Motor Company, 18, Victoria Street, Cooper	A.E.	B.
Bristol Wagon and Carriage Works Co., Ltd., Bristol	J.I.	*
Buchanan, J. W., Strabane Cycle Works, Strabane	A.	E.E.
Cadogan Garage and Motor Co., Ltd., Sydney Street, Chelsea	R.S.	A.
Caledonian Motor-Car and Cycle Company, Limited, 337, Union Street, Aberdeen	A.	E.R.
Clapton Motor Company, 91A, Upper Clapton Road, N.E.	A.D.	A.
Clark and Morgan, 22, Clarence Street, Cheltenham	B.C.	E.
Clyde Cycle and Motor-Car Company, Limited, Shenton Street, Leicester	B.	B.
Blackpool Motor Garage, Abingdon Street, Blackpool	A.U.	P.
Pearson and Son, Limited, 12, Angel Row, Nottingham		35-40
Wolstencroft, C. and Co., 1, Monk Street, Westminster	A.	C.W.
Cornet, Edward, Thornhill, N.B.	S.M.	C.
Dale Bros., 31, Wilmslow Road, Rusholme, Manchester	N.	M.R.
Davies and Netherwood, Central Garage, Harrogate	C.	C 1-5
Dennis, Bros., Limited, Onslow Bridge Street, Guildford	P.	A. 1
Enfield Cycle Company, Limited, Hunt End Works, Redditch	A.B.	A.
"Farrington" Cycle and Motor Works, 55, South Street, Chichester	B.P.	B.
Fillebrook Cycle Company, Leytonstone	F.	E. 15
Gibbs, J. E., and Company, Thomas Street, York	D.N.	A. 3
Hansford, A. W., 20, Jewry Street, Winchester	A.A.	E.
Hawnt, Montague, and Company, 140-146, Clerkenwell Road, E.C.	A.	F.M.
Hollier, W., Aberystwyth	E.J.	A.
Holloway, J. W., and Sons, Shoreham, Sussex	B.P.	D.
Hopper, F., and Company, Barton-on-Humber	B.E.	C.
Imperial Motor Company, 228, Brixton Hill, S.W.	A.	F.Z.
Kimber and Son, Albert Road, Morice Town, Devonport	D.R.	K.
Lea and Francis, Lower Ford Street, Coventry	D.U.	L.
Main, G., and Company, 36, High Parade, Leamington Spa	A.C.	A.
Maltby's Garage, High Street, Sandgate, Kent	D.	G.
Martin and Company, Albion Works, East Road, West Ham, E.	A.N.	D.
Midland Automobile and Engineering Co., Old Stratford, Stony Stratford	B.D.	A.
Motor Manufacturing Co., Ltd., 95, New Bond Street, W.	A.	M.
Neave, Bernard, 1, Lancaster Place, Richmond, S.W.	O.	A.B.
New Revolution Cycle Company, Limited, Birmingham	P.	R.L.
Old Hill Cycle and Motor Company, Old Hill, Staffs.	E.	S.T.E.
Osborne, S. J., 123, High Street, Tewkesbury	A.D.	D.
Ostler, F., Bridge Street, Guildford	P.	A.H.
Paddington Motor Co., Ltd., Banister Road, Kensal Rise	A.	A.T.
Pearce, W. F., Catherine Street, Waterford	W.I.	I.P.
Pearson Bros., 52, Elm Grove, Southsea	B.K.	P.
Pears, E. G., Aberystwyth	E.J.	B.
Ridgway, J., and Company, Broad Street, Hanley, Staffs.	E.H.	C.
Scard, Charles, Basingstoke	A.A.	D.
Shaw and Son, A., High Street, Crawley	B.P.	C.
Smith, F. Gouldthorpe, 138, Devonshire Street, Sheffield	W.A.	26-30.
Smith, James, Grantham	C.T.	A.
South Wales Motor Company, Westgate Street, Cardiff	B.O.	M.
Star Engineering Company, Wolverhampton	D.A.	G.
Strettons, Ltd., Cheltenham	A.D.	B.
Taunton Motor Company, 58, East Street, Taunton	C.	Y.
Turner Bros., Motor Works, New Southgate, N.	H.	P.
West Croydon Motor Works, London Road, West Croydon	B.Y.	M.
Wilkinson Sword Co., Ltd., Oakley Works, Acton Green, W.	A.	E.E.
Wolseley Tool and Motor-Car Company, Limited, Adderley Park, Birmingham	O.	W.Y.
	O.	2-9
	O.	W.Y.
	O.	22-43
Wood, S. W., 77, Oxford Street, Birmingham	O.	S.W.
Woodhead, Richard, 35, Nevill Street, Southport	B.	F. 1.
Woolley, J. E., Pontypool, Wales	A.X.	A.
Yorkshire Motor Car and Electric Engineering Co., Leeds	U.	M. 23

(To be continued.)



Section of Rear Axle of Lea-Francis Car (See page 995).

CORRESPONDENCE.

SOLID TYRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Pneumatic Sick," it is all very well giving his opinion, which no doubt your readers will appreciate, but it is evident he has not tried the right puncture-proof band, as he speaks of heat bringing off patches. I should like, for the benefit of your readers and "Pneumatic Sick," to point out the "Cassell non-puncturable band." I have tried almost every so-called non-puncturable band on my 20-h.p. Wolseley, but with disastrous effects. I was, with a great deal of persuasion, induced to try the "Cassell," and I really feel it my duty as a motorist to say that the results have been most satisfactory. This band does not in any way interfere with the tube, and is also a preventive of heat reaching the same, consequently I have had no trouble with punctures since using it.—Yours truly,

A BELIEVER IN PNEUMATICS.

A SOCIETY OF AUTOMOBILE ENGINEERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice from your last issue that a Society of Automobile Engineers has just been formed in New York. Some time ago there was talk of organising a similar association in this country, but, so far as I can gather, nothing has been done, and hence the honour of forming the first exclusively motor-engineering society belongs to the United States. There can be no question that there is ample need for such an organisation, and that there is plenty of good work it could do. For

So far as my experience goes, with over a year's use of the "auto-trembler," adjustment is very quickly and satisfactorily made by putting on the switch (the trembler blade resting at some point of the cam surface and not in the notch), screwing up the platinum screw until the "auto-trembler" is heard to buzz, and then screwing back very slightly. This position must be confirmed with the trembler blade resting at various points of the cam. Otherwise, owing to tilting of the commutator (from some loosening), or to some slight irregularity of the surface of the cam, contact may be made at some other phase of the revolution of the cam, in addition to the contact made when the trembler wedges drops into the notch. This done, the binding screw is tightened up, care being taken to observe that this has not raised the platinum screw. "Pluvius" must be hard to please if he is not then satisfied with his ignition in all weathers, and with all positions of the sparking lever.—Yours truly,

A. O. 40.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to "Pluvius" letter on misfiring troubles, it may be of interest to him to know of a similar occurrence which happened to myself. As in his case, my engine would always misfire when the timing gear was in an intermediate position. After much trouble I eventually found that the cause was due to one of the wires short-circuiting by coming in contact with the frame, but when advanced or retarded the wire became removed, thereby giving good results. To all outward appearance the insulation was good, but, owing to the fact that the high tension return and low tension current passed over the one wire, the trouble occurred. This was always worse in damp weather than in dry, as in the case of



The Temporary Triumph of the Horse.

[Motor, New York.]

example, the subject of standardization of the various parts of motor-cars will during the next few years undoubtedly be one of the problems the motor industry will have to tackle. The question as to the advisability of adopting standards in any particular line, and what these standards should be, can only be discussed properly by the engineers responsible for the design of modern motor-cars.—Yours truly,

CORINTHIAN.

MISFIRING TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have had precisely the same troubles as those complained of by "Pluvius" with my Napoleon car fitted with a 6-h.p. De Dion engine. I attributed the misfiring to short circuiting caused by the road surface water being splashed up by the wheels on to the engine. I have twice been delayed on the road from this cause, once for two hours.

I have now had a shield fitted to the car running from the back of the change speed gear box right up to the under front of the bonnet board, and I have not been troubled since with misfiring although I have been out with the roads deluged with water. The screen is made of patent leather backed with canvas stretched over metal ribs attached to the inner frame, and is not expensive. I hope this information may be of use to "Pluvius."—Yours truly,

P. 74.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—"Pluvius" will save himself much time and worry if he connects an "auto-trembler" in the primary circuit of his De Dion car.

"Pluvius," and will undoubtedly aid him to discover the cause of his trouble.—Yours truly,

H. J. T.

MOTOR 'BUS SERVICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We are situated eight miles from railway station; between us and the station (Llanstephan, Carmarthen), lies a comparatively fine country road with one rather steep gradient. Hundreds of visitors come here during summer months; our village, being on the Carmarthen B.y., is considered a fine health resort. There is some talk of forming a company to run a motor 'bus service between the place and the railway station. Will any of your readers kindly give their opinion as to prospects of such a service?—Yours truly,

J. T. DAVIES.

LOSS OF POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be most grateful if any of your readers could help me with my Oldsmobile car. What I chiefly complain of is loss of power. It will scarcely take even the slightest incline on top speed, even with the acceleration full on; indeed, hills which a year ago it ascended easily with three passengers, on top speed, now, with only myself in, I have to take second speed, and some hills I cannot get up at all. I have done everything I can think of—ground in valves, new piston rings, new plug, new electric wiring, new gauge in carburetor.

rettor, also diaphragm in pump, changed my petrol, new air screen—in fact, done everything I know. Still there is no life in the engine; it seems as if, when the acceleration is put on, it actually slows the engine. It is well oiled, and each part runs easily. The sparking and valves are timed right according to the little book of instructions. If the roads are wet, as they mostly are now, it is with difficulty that I can get along the level at top speed. As I use the car in my practice daily, any help will be most gratefully received.—Yours truly,

M.R.C.S.

BENZ v. LIGHT CARS.

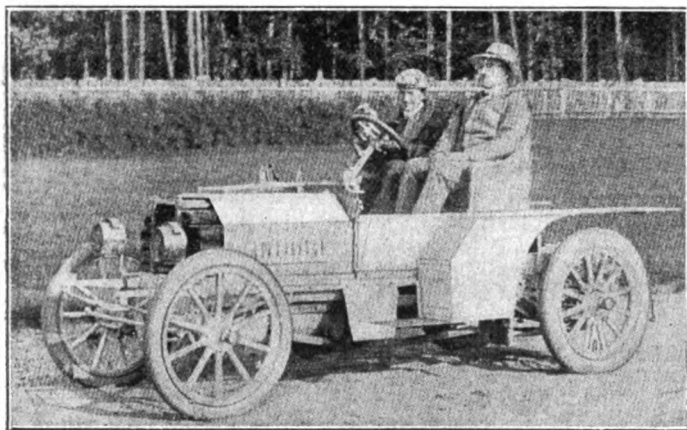
TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Being much interested in the letters now appearing in the *Journal* on Benz v. Light cars, and also solid tyres, I am wondering if any of your readers could give their experience with the more powerful Benz type of car, say from 5 to 9-h.p. I do not remember hearing of any trouble with broken back axles, etc., on these cars, and I know the 7-h.p. geared Benz is capable of a fair average. Such a car as this I should imagine to be what many prospective car owners are looking for, especially those living in the country, and who have to use their cars all through our English winter and over our country roads, which in my experience spell ruination to the best pneumatic tyre at present made, and in so short a time, if the car is heavy, that solid tyres on the drivers will, it seems, be cheaper even if they do slow the car somewhat.—Yours truly,

G. L. B.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been reading the correspondence on this subject with much interest, and agree with "W. H. W." that the result so far is not very



Herr Ettore Bugatti on a German De Dietrich Car. He will probably drive a vehicle of this type in the German Gordon Bennett Eliminating tests.
[Automobil Welt.]

good. I have only had my Benz, a second-hand one, a month, but it has been quite long enough for me to find out that the power is insufficient for the car. On the first day that I had the car I saw, as "W. H. W." says, some great possibilities in the engine, so that when "W. H. W.'s" letter appeared it went to strengthen my humble opinion that the 34-h.p. Benz engine might be made somewhere about double that horse-power.

"W. H. W.'s" letter, however, is most tantalising to me, and, I venture to think, to many other owners of Benz cars. Could he not persuade the gentleman with the improved Benz to give a few hints for the benefit of brother Benzites? I am sure it would come as "a boon and a blessing" if he could.—Yours truly,

B. L. 309.

THE MATERIAL FOR PETROL PIPES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Regarding the query in the last issue of the *Journal* and a paper read before the Institute of Marine Engineers as to a "lead pipe being imperative for the conveyance of petrol in launches," I trust you will pardon me for pointing out that the task of condensing a lecture of some 11,000 words into a column of press matter had the inevitable result that a wrong inference may naturally be drawn from any incomplete and unexplained points. The report would have obviated misconception had it read that "the author would like to make clear that a lead or a copper pipe should always be used, as the chemical components of petrol occasion rapid disintegration in an iron pipe, which ferrous matter, when set free and intermingled with the petrol, seriously reduces the efficiency of carburation, especially in the marine type of vaporiser."

It is no use heavily galvanising the bore of an iron pipe without galvanising the threads of the nipples which connect it, which is scarcely feasible, and if brass nipples be used galvanic action results. Neither iron, block tin, nor brass (even though the latter be solid drawn) should be used, copper and lead being the only metals which, while resisting chemical action, will also "give" under the tensile, compressive, and lateral stresses which are factors to be contended with in any type of craft afloat. The lecture referred to is being issued conjointly with the catalogue of my company, and should your correspondent or any gentleman taking up marine motoring desire it, I will send him a copy immediately the same are out of the hands of the printers.—Yours faithfully,

O. SUMNER.

WHAT IT COSTS TO KEEP A CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to Mr. T. W. Moorhouse's letter in your issue of the 13th inst., below I give you what it has cost me to drive a 5-h.p. small car for 8½ months:—

	£	s.	d.
Petrol	4	10	7
Lubricating oils	11	0	
Paraffin	2	6	
Spare parts	1	12	8
Charging accumulators	4	0	
New rubber piping for water	3	0	
Repairs (overhauling) by makers	1	18	3
Cleaning	1	6	
Solution	9		
Lamp wicks	4		
Grease	10		
Re-rubbing 2 tyres (bands fitted)	2	10	0
Repairs to accumulator	10	6	
Brushes, sponge, wash leathers, etc.	7	6	
Metal polish	6		
Having outer cover fitted	1	6	
Repairs to inner tube	6		
Two punctures mended	2	6	
Garage (storage of car in daytime)	3	15	6
	£16	13	11

I have driven 2,700 miles and use the car every day to take me to my business and back. Out of the above mileage about 500 miles have been done with only one up, about 300 with three up, and the remainder with two up.

As I do all the cleaning myself and the bulk of any small repairs that have been needed, this accounts for the smallness of these two items, especially the former. The car is an English-made one throughout, but, although I have no interest in the firm who made this, I am connected with the trade, and so have been able to get any repairs to tyres and spare parts at trade price. Petrol has cost me on an average 1s. 5d. per gallon. The above cost and mileage are arrived at from a careful account I have kept from the day I purchased the car.—Yours truly,

AN EVERYDAY USER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Perhaps my experience may be of interest to T. W. Moorhouse, who asks for information on the above in the *Journal* of the 13th inst. In May last I purchased a new two-seated car with detachable back seat, single-cylinder, 6-h.p., two speeds, magneto ignition and pneumatic tyres. I then knew absolutely nothing about running a car, had a practical man to drive me, and spend a few hours with me, then took the car home myself, and have driven it nearly 1,400 miles since without a hitch or spending a penny for repairs—except a trifle for "patches." I had a little trouble at first with valve sticking owing to over lubrication, and with nipped inner tubes, all of which I was able to put right. I look after the car entirely myself, and am careful to see that everything is "all there" before starting out. A gallon of petrol runs well on to forty miles, and lubricating oil and grease cost about sixpence per hundred miles. The car practically takes the place of a pony and trap, and I find it infinitely preferable in every way.—Yours truly,

T. 74.

PARAFFIN v. PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent "Cycle Mechanic," whose letter appears in the *Journal* for the 6th inst., may be interested to know that the calorific value of ordinary petroleum is stated by a well-known authority, whose name I cannot for the moment call to mind, to be 18.5 per cent. greater than that of gasoline of .650 specific gravity. The calorific value of hydrocarbons used in heat engines does not necessarily vary as their specific gravity, and, to answer your correspondent's question correctly, it would be necessary to experiment with the two fuels named.

When testing, some time ago, a vaporizer designed by myself for heavy

spirit, I found that an engine making 800 revolutions per minute with petrol increased its speed to over 900 with paraffin, the same quantity of carburetted air or mixture being admitted to the cylinder; the throttle, placed between the vaporizer and inlet valve, not having been touched. This increase of speed was accompanied by a change in the sound of the explosion. The spirit used was Pratt's 880, which I think always gave good results. I am unable to state the quantities used in a given period. I may say that on this occasion no heat whatever was used with the heavy oil, and the carburation was of course imperfect.—Yours truly,

J. GILBERT GITTO.

THE REPAIR OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have just been looking over the letter of "Chirurgeon" on p. 932, and really I cannot see that the charges are glaringly exorbitant. The items £3, £1 2s., and £3 7s. 6d. seem if anything to err slightly on the wrong side, but this might be easily accounted for if the exact nature of the particular jobs were known. I notice that no less than four of the items quoted by "Chirurgeon" are for "time." We may, therefore, safely conclude that "Chirurgeon" considers 1s. per hour an exorbitant charge for time. Let us consider this for a moment. Suppose "Chirurgeon" gets the local joiner to send a man along to his surgery to put up a few shelves, or suppose his gas leaks, and he sends for a plumber, who comes and moons round for half a day, he will find that he is charged 1s. per hour for the services of these men. Now I do not think anyone will contend that the same amount of skill, intelligence, and careful workmanship is demanded in the above two jobs as is required in the repair of a motor-car.

It would seem, therefore, that 1s. per hour is a very reasonable charge indeed—particularly when it is remembered that a competent mechanic will get 10½d. to 11d. per hour, thus leaving the repairer only 1d. or 1½d. per hour for himself. With regard to the question of charging for the use of engine and lathe, of course it is customary to charge for these, though it is not generally entered as a separate item. The time is usually charged at such a rate as to include it. Engines and lathes have to be bought, there is expense connected with their running, repairs are needed to them, and perchance there comes a day when they are beyond repair and have to be replaced by new ones. In addition to this, they have to be housed, and this means rent, rates and taxes. It is very evident, therefore, that the repairer who only charges 1d. or 1½d. per hour profit on his men's time, and throws in the use of machinery, etc., free, is working his business at a loss. If a repairer charges his customers 1s. 6d. per hour, there will be very little left for himself after paying his mechanic 11d. per hour, paying 1d. per horse power per hour for gas engine, and writing off an allowance for interest on capital, depreciation, rent, rates and taxes.

As I have spoken from the repairer's point of view, I think it is only fair to state that I am not trading as a repairer. I, however, do all my own repair work, and can testify to the careful and painstaking work involved and the apparently great expenditure of time over what may seem only a small job, if only the work be honestly done.—Yours truly,

B. T. O.

STEAM v. PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I would be very much obliged if you or some of your readers would be kind enough to inform me with regard to steam versus petrol cars, as a friend of mine intends going in for one, and would like to have some idea as to which would please him most. I am inclined to favour a steam car, which burns paraffin as fuel. The steam-car may be more complicated and a little more expensive to buy, but not in fuel, as petrol costs about three times paraffin, and it is not in every village that petrol is to be obtained. Other advantages are the absence of ignition troubles, vibration, noise, or smell, but surely the petrol cars must have some great advantage, as they are seemingly so numerous compared with steam-cars. I don't claim to know very much about either of these cars, but in the case of long-distance running this extra price of petrol soon adds up, and I should think that the continual vibration in the petrol car is bound to affect the mechanism in some way. How often do we hear of ignition and accumulation troubles? I therefore think that the petrol car is far more expensive to keep up, not so reliable, and consequently not so much pleasure to be derived from them as the steam car. It seems that the purchaser of a car does not mind its first cost so much as the expensive upkeep and want of reliability.—Yours truly,

SEARCHLIGHT.

HOTEL CHARGES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was very much amused by the letter appearing in last week's *Motor-Car Journal* headed "Hotel Charges." The last item mentioned by your correspondent ought not to appear, as it is quite optional, as he states; some people might give half-a-crown and some nothing, according to the attention received. The only item I think too much is the charge for garage, and this is presuming car was not cleaned.

I have been all round the south and east coasts, and through the Midlands, and if I had been supplied with the articles quoted by your correspondent, I should certainly expect to be charged, at any first-class hotel, as much as he paid, and should not consider I had been unfairly treated. If I desired anything less expensive I should avoid first-class hotels, and patronise a temperance hotel or coffee tavern.—Yours truly,

ONE WHO PAYS A FAIR PRICE.

EXPERIENCES WITH THE PARAFFIN CARBURETTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in your issue of January 30th some correspondence re the Trusty carburettors. As sole agent for these, I hope that you will in fairness allow me to reply to same. I would first remark that these carburettors are fully guaranteed, and are taken back unconditionally on receipt of proof that they will not work. A carburettor can be generally seen at my address at work, and, before purchasing, Lieut. Windham saw one of these carburettors in operation, and examined many others. Whether Lieut. Windham was satisfied may be best judged by the fact that he applied to the maker for some form of agency, and the application was in due course forwarded to me. In order that you may judge if Lieut. Windham's censures on the workmanship are correct or not, I am sending you an ordinary 4-10-h.p. carburettor, which is exactly similar to that bought by Lieut. Windham. I shall be pleased if you will examine and test the same.

These carburettors, if fitted and used according to the simple directions given, cannot fail to work with paraffin or petrol perfectly. A very large number has been sold, and plant is being laid down to manufacture in large quantities, as the present demand exceeds the supply. The only complaints ever received were traced to imperfect fitting by unskilled persons. This would, no doubt, explain Lieut. Windham's trouble, but as he has not yet returned his carburettor it is evident that it cannot be so bad as he states. Had his carburettor been fitted to directions, and he had taken a few hints as to its management, he would have had no trouble. I notice also, in the same issue, a letter from a Mr. Clifton, who has one of these carburettors running satisfactorily on a stationary engine.—Yours truly,

DAVID G. SMITH.

DRIVERS.

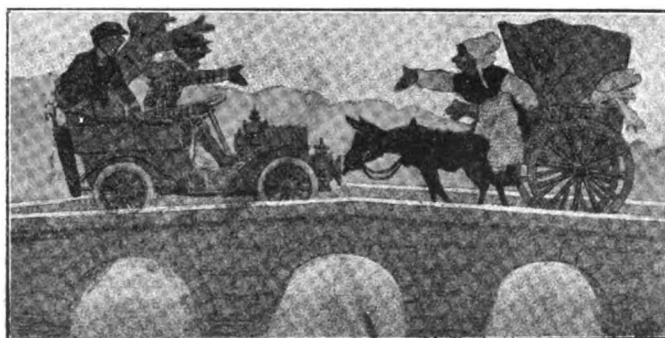
TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Seeing in your *Journal* the letters about drivers, allow me to say I think it is the fault of the owners if they do not get good English drivers. Owners of cars take notice of the following kind of advertisements, viz., "Chauffeur, mechanic, wants situation; can speak French, Dutch and German; wait at table, and can do gardening; wages £1 per week." Is it possible that this genius can do these things properly? If he is a good mechanic, as he is supposed to be, he could earn twice as much money in a mechanic's shop. There are other cases where a gentleman gets a good driver, but if anything goes wrong with the car the driver is always blamed. The owners should understand their cars, and let the driver be a driver and not an odd man.—Yours truly,

H. W. T.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with interest the letters which have appeared in your *Journal* lately regarding the scarcity of good drivers. But, from my experience, there seems to be a scarcity of good berths. I am well up in most makes of cars and have had a large practical experience in driving and repairs of all kinds, from adjusting a trembler to taking down engines and gears and fitting new brasses; can also do brazing and use a lathe. Yet I have advertised for a private job in several papers and answered advertisements by the score, but am still out of a berth. Some of the replies I received were to look after a car and act as valet, and wait at table. One was to help in garden, and the wages offered were from £1 to 30s., yet the advertisements were for a good driver able to do own repairs. I have



PONS ASINORUM.

(Reproduced from the novel poster issued by the makers of the Ascar Cars.)

heard of owners grumbling at the charges made for repairs at garages, but I think it is a wonder there is any part to repair, if this is the class of mechanic they employ. In my opinion, if an owner is willing to pay a decent wage he will have no trouble in getting a good all-round man who will take a pride in the appearance and sweet running of his car.—Yours truly,
PLUG.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a driver, my experience is:—Mostly the paid driver is not a mechanic, therefore, is not keenly interested in tackling breakdowns, etc.; does not take his calling seriously; is too young for the responsibility and temptations many chauffeurs have to face. Many drive to the annoyance of other road users, put undue strains upon engine and carriage and have a keen scent for coin. All this bears upon the discussion, as it puts owners to greater expense in upkeep of car and naturally makes them more exacting. To owners I would respectfully point out that if a youth of eighteen or so is not considered old enough to manage a first-class brougham and pair, he cannot be old enough to drive a valuable car. To drivers I would simply say—Study your master and he will study you; in his own interest he will treat you well if he has a grain of wisdom, and your work will be the more pleasant for the confidence and friendliness of your employer.—Yours truly
G.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I note your remarks, and also those of Mr. Edge, and I agree with both. The question is rather a serious one, and one that should have greater attention both from car makers and car owners. To be a car driver a man must not only be able to hold the wheel and drive the car when in good order, but he should know how to keep it so. I maintain that a



A Cadillac Car carrying 16 passengers up a gradient of 1 in 7.

modern made car, in the hands of a driver who has learnt how to drive in the true sense of the word—with the exception of unavoidable accidents—would rarely fail when it was wanted, and the cost of upkeep would be much less than now, and the motor-car would, I think, be much more popular.—Yours truly,

H. BURNELL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I, as a driver-mechanic of over twelve years' experience, give my opinion on this subject? Will the gentlemen who state that there is a scarcity of good drivers ask themselves this question, "Can I get a good man for a bad wage"? The question is what constitutes a good man? My opinion is a man who can replace any part of the machinery that has been broken or become defective, adjust bearings, find a short circuit, or anything else that may be required. This class of men do not make the excuse, "Please, sir, the car can't go out, the engine won't start." These men do not take a car to the repair shop for every trifling job. These men save owners a good deal of money in the long run, in spite of their so-called high wages, which I fail to see; surely if employers in shops pay the wage, the private gentleman ought to, in fact, pay more considering the man's lost comforts. May I ask gentlemen, when next visiting a works or repair shop, to ask the foreman how long it takes a man to become a good mechanic. His answer will be at the least six to seven years. I appeal to owners not to blame the car because it is always at the repair shop. Get a man who can do his work. Above all, beware of the certified driver who has had two or three lessons round the park at so much a time and is turned out as a certified motor mechanic and driver. Employ men

who can show a reference as fitters as well as character. Then you will find a difference in both breakdowns and repair bill.—Yours truly,
E. E. M.

DRIVERS.—Communications addressed to several of the writers of letters re drivers have been forwarded.

LINON CARS.—Replying to Mr. James Robertson, the maker of the Linon cars is M. Linon, Ensival, near Verviers, Belgium.

PICRIC ACID AND PETROL MOTORS.—We have a letter from "O. J. C." on this subject. Our correspondent has, however, omitted to send his name and address.

LAMP FOUND.—The motorist who dropped a tail lamp in Avenue Road, Regent's Park, on Sunday, January 31st, can have the same on application to Mr. E. J. Morris, 137a, Finchley Road, N.W.

CONTINENTAL TYRES.—Replying to "Phono," an 820 by 90 inner tube cannot be used with a 760 by 90 tyre. The circumference of an 820 mm. tube is too large, and would not fit properly into a 760 mm. cover. He would only experience trouble in doing so.

STEAM WAGON v. HORSES.

AN interesting comparison of the cost of carriage by a steam wagon as compared with horse-drawn vehicles is furnished by Messrs. Witherington and Sons, of the Sonning Flour Mills, Reading. This firm have in use a five-ton Foden wagon, and have kept a record of the working expenses for the past year, which is given below. During 1903 the vehicle ran 5,275 miles, carried 3,870 tons, burnt 4½ tons coal, at a total cost of £380, including interest on the prime cost of the wagon, and also depreciation. The separate items are as follows:—

ONE STEAM LORRY IN 1903.

	£	s.	d.	£	s.	d.
Wages:—						
Driver at 35s.	91	0	0			
One man at 26s.	67	12	0			
				158	12	0
Repairs				44	7	0
Oil				16	12	10
Coal, 4½ tons				49	0	0
Insurance				11	18	0
Interest on cost				25	0	0
Depreciation				70	0	0
Incidentals				4	10	2
				£380	0	0

SEVEN HORSES IN 1902.

	£	s.	d.
Horse Food	271	0	0
Wages:—2 Carters at 24s. a week	124	16	0
Shoeing Account	30	14	8
Veterinary Bill	8	10	6
Repairs:—Vans and Harness	11	2	9
Interest on Capital:—			
7 Horses at £50, £350; 2 Vans, { £400 at	20	10	0
Carts, etc. £60 { 5 per cent.			
Depreciation on Horses, Vans, etc.	50	0	0
Incidentals	3	6	1
	£520	0	0

Messrs. Witherington worked the motor-wagon 301 days in the year, and state that it has done the work of seven horses, which they sold when they received the automobile.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editor's hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

THE Motor-Car Journal.


VOL. V.]

LONDON, SATURDAY, FEBRUARY 27, 1904.

[No. 260.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

COMMENTS.



THE Agricultural Hall at "merrie Islington" is now given up to the display of the equine, and the snorting of horses heralds the coming of the motor-car to the same Hall in three weeks' time. Some enthusiastic lover of the quadruped has declared with glee that the popularity of the horse is on the up grade, supporting this assertion by the fact that this year's entries at the Horse Show total 862 as compared with 680 last year. That is true, but he ignores the fact that the entries in 1902 were 860, this year's figures showing an increase of only two. At the same time we would point out that the Horse Show entries afford no means of comparison as to the respective popularity of the horse and motor-car.

Improvement in the Equine.

As a matter of fact the coming of the motor should make the Horse Shows more popular than ever. The automobile will displace the horse to a large extent as a beast of burden, and the result will be to cause owners to prize more than of yore the horse as a means of pleasure in riding and hunting. The tendency is to improve the race in thoroughbred classes—a fact which is proved by the increased membership of the societies devoted to the horse, and the considerably enhanced prices that have lately been asked for first-class animals.

Parliamentary Motorists.

EVERY week adds to the list of Parliamentarians who motor, and the death of Lord Alington raises to the Upper Chamber the Hon. Humphrey Sturt, M.P., whose car was on show at the Crystal Palace exhibition last week. The Hon. James Hozier, M.P., too, is a motorist, and our Directory is bringing out the names of several others. Away at Brighton, the Premier has been recuperating as the guest of Mr. Arthur Sassoon, and has been enjoying some delightful motor-car trips along the coast and among the famous Downs.

Airships.

In his paper on aeronautics and ballooning at the Automobile Club last week, Mr. Pollock gave an interesting resume of the history of ballooning since the days of the brothers Montgolfier, who first ascended in a fire balloon in France in 1783. Dealing with the question of airships, Mr. Pollock expressed the view that the airship of Mr. Beadle, which will be seen at the Aero Club's Exhibition at the Agricultural Hall in March, has many good points which should commend themselves to those who intend in future to take their pleasures among the clouds.

A Huddersfield Centre.

THE process of decentralisation has begun in the Yorkshire Automobile Club, and the Huddersfield centre has been inaugurated under the chairmanship of Mr. J. Crowther, who has also been elected a vice-president of the Yorkshire Club. The hon. secretary is Mr. Gordon Learoyd. The

centre is entirely self-governing, and is affiliated to the A.C.G.B.I. and Motor Union through the Yorkshire Club. The members of the new centre have all the benefits of the county club, and by this means it is intended to make the nucleus of a powerful and live organisation in the "broad county." Already about fifty new members have been enrolled.

County Arguments.

HITHERTO it has been freely surmised that the title "Yorkshire" club was rather a comprehensive one: seeing that the membership was confined to Leeds, and that Halifax, Sheffield, and York have each their local clubs. Yorkshire is so peculiarly situated that there seems no reason why the idea of local centres, each self-governing and wholly self-contained, should not be formed as branches of a powerful organisation for the whole of the county. Each district would probably seek representation on the central committee; but that is a detail. The idea of a Yorkshire County Club thoroughly identified with every district of the White Rose is worth discussion.

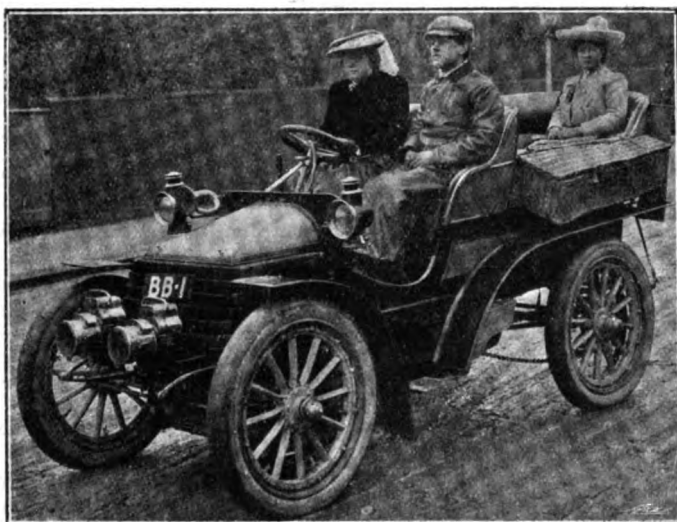
Stubborn Attitude in Wales.

THE Newport Watch Committee has proved itself intractable, and has declined to accede to the wishes of motorists in Wales, as expressed through the South Wales and Monmouthshire Club. It has decided to propose that the speed of motor-cars be restricted to ten miles an hour within the borough, and, despite the protest of the local automobile organisation, has now agreed to persist in that recommendation to the Local Government Board. In view of the conciliatory attitude adopted by the authorities at Deal, Dover, and elsewhere, who, having contemplated making this restriction, subsequently withdrew it on representation being made by local motorists, this attitude of the Newport people seems strangely prejudiced against the advance of automobilism. Fortunately, however, the Newport folk are in an insignificant minority so far as this restrictive regulation is concerned, and we yet hope that the Local Government Board, bearing this circumstance in mind, will be disinclined to accede to any suggestion which will give the town an unpleasant name among motorists.

No. B.B. 1.

THE illustration on the next page of a 10-h.p. "Wolseley" car, belonging to Mr. W. Dunn, of Newcastle-on-Tyne, was taken on the completion of a journey from Newcastle to London which was made by Mrs. Dunn, accompanied by her daughter and chauffeur. Starting at nine o'clock on a Thursday morning, they made excellent running, the car averaging over 20 miles an hour. On that night the party stayed at Newark, and continued their journey on Friday, reaching London about five o'clock in the afternoon. There was no attempt at high speed throughout this run, which was undertaken by Mrs. Dunn, who wished to join her husband in London, and it is significant that no thought of travelling by rail was entertained, the car being taken as a matter of course for the long journey. Mr. Dunn is himself one of the pioneer motorists in England, having been the possessor

of one of the first Benz cars introduced into this country by Mr. Hewetson. He has since driven various makes of cars, and has a rich store of experiences to tell of his adventures during the early days of motoring. It is only fitting that he should have been given the coveted No. 1 license for the Newcastle district.



Mrs. W. Dunn on her Wolsley Car.

In New Zealand.

FROM correspondents in the colony we learn that the prospects of automobilism in New Zealand are very bright, both roads and climate accommodating themselves to the conditions of automobile traffic. There are motor-car clubs in Auckland and Christchurch, and cars are fetching fairly substantial figures. During the past two seasons a large number of American motor-cycles were imported, but do not seem to have given general satisfaction, with the result that a prejudice against such automobiles has been created. The advent of more reliable machines will, however, remove that.

[Motorists in the Colony.

SEVERAL motorists at Auckland own motor-cars, and have lately been taking trips into various parts of the colony. Dr. A. C. Purchas, on his 12-h.p. Darracq, has had a run to Rotorna through the Waikato—a difficult road, seeing that it has not been metalled, and that it is badly graded. On a Locomobile Mr. W. T. Gilmour toured the Waikato and Hot Lakes. Mr. H. Butcher, of Napier, has been touring at Rotorna, and amongst others who motored at Christmas were Mr. Humphrey Haines, who achieved the feat of making an ascent of Ngongotaha Mountain on his car. Mr. H. P. Barry visited Tauranga, breaking the record between there and Waihi. Arrangements were being made when the mail left for a camping-out party to be inaugurated by a meet of the Auckland Automobile Association on the 25th inst.

The Caravan Restaurant.

To the popular fancy there was much that was gratifying in the "Caravan" restaurant shown at the recent Motor-Car Exhibition by a company which intends to put the idea to a practical test at the next race meeting at Kempton Park. The "restaurant" is a glorified coffee stall, but, instead of the solitary ass or dejected equine usually engaged to draw the peripatetic commissariat from place to place, there is a modern automobile, the body of which forms a large restaurant, from two sides of which people can be served with steaks fresh from the grill or water aerated on the premises. The employment of the superheated steam from the engine will ensure a

constant supply of hot water, and will also constitute an economic form of obtaining heat.

Breakfast while you Travel.

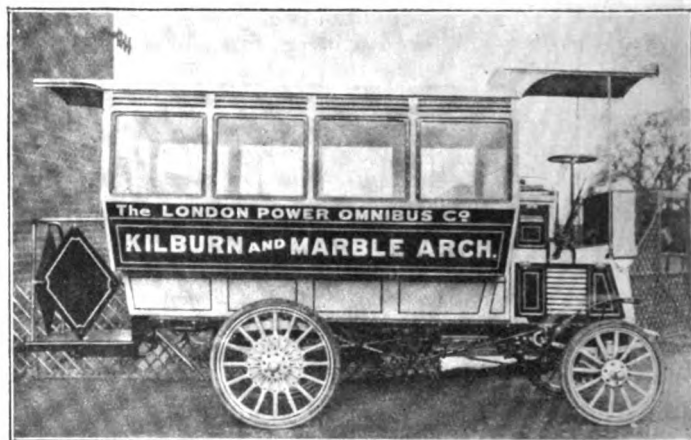
THIS combination of the automobile with the kitchen and the restaurant should prove a capital innovation wherever large numbers of people are drawn together, and at race meetings, popular demonstrations, and the like, the motor-caravan ought to become a regular feature. Half a dozen of the huge machines are already on order, and, should the notion prove acceptable to the public taste, the adaptations of the idea are endless. Just as the traveller by rail now takes his luncheon or dinner "on board," so the business man of the future may be expected to have his breakfast while running up to town by the public motor-car service.

Cases Dismissed.

ALTHOUGH the long list of cases of supposed and actual furious driving no longer appears in our columns, due notice will be taken of instances where harshness appears to have been indulged in by the Bench. Where magistrates recognise the evidence on both sides to such an extent that acquittal is the only result, we propose to make a record for the benefit of other motorists similarly circumstanced. Hence the heading of "Cases Dismissed," begun on another column of the present issue, should be of tangible service.

London's Motor 'Buses.

LONDONERS have lately been interested in the peregrinations of a motor 'bus with "Kilburn and Marble Arch" conspicuously painted on the side. This is one of a fleet of eight which the London Power Omnibus Company is putting upon the road between Brondesbury station and the Marble Arch. It is the intention of the company to give a frequent service of half-a-dozen motor-omnibuses between these points. The vehicles are made by Messrs. Stirlings, Limited, upon their well-known lines, and will carry fourteen passengers. It is thought that being without seats on the top will facilitate the rapidity of the service by obviating the comparatively long waits which are caused by passengers descending or ascending the steps of the ordinary 'bus.



An advance has been made in having the windows removable, thus giving a much-needed circulation of air through the vehicle.

Good Wishes for Success.

COMFORT and absence of the jolting usually associated with London 'buses has been secured, and the general appearance of the vehicles is decidedly favourable. Evidently this experiment may be regarded as the first really important tackling of the problem, and all interested in the development of automobilism as well as the transit questions

that occur in every modern city will wish well to the undertaking, which has established its garage at Salisbury Road, Kilburn:

The Car and the Cow.

WHEN asked as to what would happen if a railway train ran into a cow, George Stephenson remarked it would be "bad for the cow." It is similarly unfortunate for the animal when collision occurs with a motor-car, as has just been demonstrated by an animal belonging to a Patcham farmer which assaulted, or was assaulted by, a car which was being driven by Joseph Maris Leon Olivier. The latter was charged at the Hove Police Court with driving a motor-car "in a manner which was dangerous to the public"—the public in this case, apparently, consisting of a cow. Despite the fact that the defendant was represented by Mr. Staplee Firth, the magistrates convicted Olivier, who was fined £5 and £1 costs.

On the Land.

A GROWING feature of automobile exhibitions is the way in which the motor-car is being adapted to the purposes of the land. The "Ivel" agricultural motor attracted visitors into the corridor at the Palace, where heavy vehicles were stationed, who would not otherwise have found their way to a place so difficult to discover. Then, in addition to the eastern counties firm, whose lawn motors have been conspicuous at exhibitions, came a Leeds engineering company, also with a petrol lawn mower of good design. This will be found at the forthcoming Agricultural Hall Show, along with several kindred ideas, all tending to prove the universality of the automobile when it has surmounted prejudice and broken down the barriers of vested interests that now fear loss should it gain general favour.

Alas, poor Jarrett!

SERGEANT JARRETT has lost a case and is to be commiserated with. Under the old regime his word was a law unto itself, and no Surrey magistrate would fail to convict when Sergeant Jarrett gave evidence against a motorist. "What I have said I have said" might be his motto, and the confidence which the magistrates reposed in his judgment was simply colossal. But times have changed, and on Saturday his declaration that a motorist was going at twenty-five miles an hour fell upon doubting ears—or rather the magistrates recognised that there was a possibility of even the redoubtable Jarrett making a mistake. They were not satisfied that there might not have been an error in the case on account of the small margin between twenty and twenty-five miles. What comfort for motorists in that view. We thank Sir W. Chance for his sensible attitude, which will come as a healing balm to many an old victim of Jarrett's watchfulness.

Our Artist's View.

BUT should the magistrates fall into a disbelieving mood with regard to the police, and should they begin to give credence to the evidence of motorists, the system of promotion will have to be revised. Somehow or other our artist has got hold of the idea that this has previously been associated with motor-car cases, hence his sketch on page 1028; on what basis will it be arranged if this is no longer possible?

The Irish Service.

ALTHOUGH it is about a year since the Pirrie-Iveagh transit scheme was given newspaper publicity, little has lately been heard of the plan, and nothing has been seen of the vehicles. The promoters of the project have, however, been working quietly in their own way, and Mr. W. J. Pirrie has just informed Captain Donelan, M.P., that they hope shortly to commence in a few isolated districts and then extend their ramifications as rapidly as the utility of the services is demonstrated. In view of the

condition of the country, the sooner the motor service is in actual operation the better will it be for the general prosperity. The subject was mentioned in the House of Commons on Tuesday, when Mr. J. F. X. O'Brien moved a resolution asking Parliament to say that "excessive railway rates and defective transit facilities generally constitute a serious bar to the material advancement of Ireland, and should receive immediate attention from the Government." The Chief Secretary for Ireland, in his reply, said that two cardinal difficulties obstructed the application of motor traction in Ireland, the first being the speed limit and the weight of the "trailer," whilst the second lay in the condition of the roads. The Local Government Board, announced the right hon. gentleman, were prepared to increase the speed limit to ten miles, the weight of the motor vehicle to four tons, and the weight of the trailer to a ton and a half. This, however, he added, with the ready assent of the Irish Nationalist members, must be subject to arrangements with the county councils of Ireland. Transit developments would not be confined to the railways, although the object should be to induce the Irish railway companies to pluck up courage and co-operate in the common task. Altogether about a score of routes will be suggested for the collection of agricultural produce by motor vehicles.



Mr. T. A. Edison and his Electrical Car.

Confusion Inevitable.

RECENTLY we mentioned a case in the North of London where confusion arose as to the number on a particular car, and expressed the opinion that such instances would be frequent under the new regulations to which motorists are now subject. Our attention has just been called to a similar mischance which has happened to the Baron de Barreto, who was visited the other day by the inspector of the police at Fakenham. This gentleman threatened to charge him with driving his motor-car, number A.H. 9, without a light at 9.30 p.m. on February 11th, within the Metropolitan police area. Now, it so happens that the Baron was not in London on that day, neither is he possessed of a car located in the capital, nor have any of his automobiles, numbers A.H. 8, A.H. 9, and A.H. 10, ever been in the metro-

polis. It is therefore apparent that a serious mistake was made by the police authorities, and we record it in order to emphasize the view we have always expressed, viz., that numbering, while useful for a purpose, must inevitably lead to mistakes such as this. It will also, we fear, in many instances be productive of a great deal of trouble and expense, not to say of possible injustice.

Berner's Hall.

ONE of the interesting sections of the forthcoming Exhibition will be that of accessories, tyres, fittings, etc., in the Berner's Hall—a commodious building opening out from the gallery at the Agricultural Hall and providing a good opportunity for the display of exhibits for which no room can be found elsewhere. The fact that it has three entrances will ensure the circulation of visitors through the Hall; and although its devotion to the purposes of a motor-car exhibition is something of an innovation it should prove popular with exhibitors as well as with spectators. Well lighted, well ventilated, and well visited, it should quickly become a popular feature of the Exhibition.

Motor Fees in London.

IN the report of the Highways Committee of the London County Council, submitted on Tuesday, was a statement of the number of motor-cars and motor-cycles registered under the new Act and of licences issued. Up to February 17th 2,356 cars were registered at a fee of £1 each, while the motor-cycles numbered 1,385, which, at a fee of 5s. each, yields £346 5s. The licences to drive motor-cars or cycles totalled 5,187, giving, at 5s. each, £1,296 15s. Makers' or dealers' licences number 209—a return, at £3 each, of £627. Altogether the London County Council has received £4,626. The question is, what will be done with the money? As there are apparently no danger-boards or notices of speed-limited areas to be erected in the Council's district, motorists will be curious to see if the sum will be applied in ways in which they are interested.

Motor-Car Services.

SEVERAL proposals for motor-car services are already appearing in view of the summer season in England, and among the definite arrangements made are several for which railway companies are responsible. The enterprise of the Great Western Railway has already been fully recorded in our columns, and we hope shortly to congratulate the Great Eastern Railway Company on its successful inauguration of a motor-car service at Southwold, Yarmouth, and two or three other of its popular resorts on the east coast. These seaside services have been uniformly successful, so far as the South of England is concerned. The North, however, has proved somewhat laggard in this respect. Now comes news that a motor-car service is to be established by the G.W.R. in South Buckinghamshire, between some places of historic and literary interest, as well as of picturesque association. This will be inaugurated on March 1st between Slough, Stoke Pogis, Farnham Royal, Burnham Beeches, and Beaconsfield, the vehicles to be used being Milnes-Daimlers.

The Acceleration of Omnibus Pace.

MOTORISTS will perhaps find some satisfaction in the report that the London omnibus companies have ordered that wherever traffic permits the omnibuses are to travel more quickly, in order to make an extra journey a day. Whether the horses are to have relief, or whether they, too, are to perform the extra journey, we know not. But the quickening of the pace is all to the public convenience, and shows a recognition of the needs of the time of which the omnibus companies have never yet had occasion to be charged. At the meeting of the London Road Car Company, Limited, last week, it was stated that the total number of passengers carried has declined slightly,

although certain routes showed an advance. Mr. J. H. Moore, J.P., announced that in a very short time the company would have two motor 'buses on the road, and, we understand, from an authoritative source, that contracts for the purchase of two steam 'buses have been entered into by the London Road Car Company.

Lending Marks.

MOTORISTS must not lend their marks, for even the most innocent action of this kind may result in their appearance in a police-court, as one firm has just discovered. At the Mortlake Petty Sessions, on Wednesday, Mr. H. Maskew, of High Road, Chiswick, was summoned for allowing an identification mark on a motor-car to be used by another person. Evidence was given that a person named James was stopped at Barnes for driving a car without a light to illuminate the identification plate, and that he said he owned the car. Inquiries showed that the mark on the car had been assigned to the Keene Automobile Company, Limited, and subsequently defendant, who had charge of the repairing branch, was interviewed, when the witness alleged he said he lent the mark to James, whose car he had repaired, to go to Barnes. Defendant, sworn, stated that he had repaired the car and gave James permission to try it, saying he might go as far as Hammersmith. Nothing was said about Barnes. James did not return with the car, and he went to his house and complained to his wife. He waited there from four o'clock till eleven for James to return. The Bench considered that defendant had not acted fraudulently within the meaning of the section and dismissed the summons.

Directory and Dealers' Marks.

PRESSURE on our space, consequent on the full reports we have given of the Exhibition at the Crystal Palace, has compelled us to hold over the list of Dealers' Marks and also the Directory of Numbers, both of which have assumed large dimensions. Next week, however, we hope to resume both lists, to which additions are being made daily. In order to remove any misapprehensions that may exist we may mention that we include motor-cyclists as well as owners of cars in the list.

THE Earl of Shrewsbury and Talbot has consented to open the Motor-car Exhibition at Manchester.

THE officers of the Motor Volunteer Corps will be presented at the Levee on Monday by Lord Roberts.

APPLICATIONS for the ten miles limit have been made by the authorities at Longton, St. Albans, and Stoke-upon-Trent.

THE expenses of the police in connection with the Gordon Bennett race in Ireland were £3,752, of which the Treasury is paying £2,752.

THE kilometre race for the Sneden Cup, organised by the Automobile Club of Algeria, was run off on Sunday last. The winner was Baron de Crawhez, who, on a 70-h.p. Panhard, covered the distance in 32 sec. M. de Malglaive on a 45-h.p. De Dietrich was second in 57½ sec.

THE special committee of the Norfolk County Council to consider the Motor Car Act has recommended the Council to restrict the speed of motor-cars to ten miles an hour within limits indicated by notice-boards in the following areas which are lighted at the public expense:—Attleborough, number of signals required, 4; Aylsham, 7; Cromer, 4; East Dereham, 7; Diss, 5; Downham, 4; Fakenham, 4; Feltwell, 4; Gaywood, 4; Harleston, 3; Hingham, 4; Holt, 4; King's Lynn, 4; Loddon, 3; Mundesley, 4; Sheringham, 4; Swaffham, 6; Thetford, 7; Thorpe St. Andrew, 2; Trowse, 3; North Walsham, 6; Walsingham, 3; Walsoken, 4; Watton, 4; Wymondham, 6. Altogether, it is considered that for the indication of the places mentioned in the schedule at least 110 signs will be required, at a total cost of £192 10s.

WHEELS FOR MOTOR-CARS.

IN the course of a paper presented by Commandant Ferrus at the last International Automobile Congress in Paris, the author discussed the question of the most advantageous diameter for the wheels of motor-cars. Theorists have often attempted to determine by calculation this question of the size of wheels for motor-cars. Unfortunately, they are not even agreed upon the data upon which their calculations are based. Some consider the draft inversely proportional to the square root of the wheel diameter; others claim it to be inversely proportional to the wheel diameter itself. It appears, in the author's opinion, that the latter are correct.

The results obtained by Morin are in accordance with those of Coulomb, who was the first to establish the laws of friction, and these results are based upon a large number of experiments conducted during several years with various types of vehicles and wheels. In the work of Morin on the draft of vehicles may be found tables containing the results of 170 experiments on the influence of the diameter of the wheels, 267 on the influence of the speed, and 175 on the influence of the width of the rims.

All authors agree that the friction of rolling motion diminishes as the diameter of the wheel increases, and in ascribing this phenomenon to the variations in the extent of contact surface between wheel and ground, it has too frequently been overlooked that with pneumatic tyres of similar construction, and with a given weight and a given pressure, the contact surface between the tyre and ground is constant. It is therefore to be concluded that for roads which are not too much cut up the draft is independent of the wheel diameter within reasonable limits. Another fact to be considered is that in motor-cars the use of wheels of large diameter necessitates a greater ratio of speed reduction from motor to road wheel, entailing greater friction losses. In increasing the wheel diameter the loss may therefore be greater than the gain, and the excellent results obtained with small directly driven wheels substantiate this possibility.

It would appear that the wheels at present employed, mostly 32 or 36 inches diameter, leave little to be desired from this point of view. The range of possible diameters is, moreover, limited by all sorts of considerations, among which only the desirability of having all four wheels on an automobile equal



A service of Motor-Buses has just been inaugurated between Bolshelm, Dulken, and Viersen, in the Rhine Valley. The illustration shows the Parish Priest of Bolshelm blessing the new service, which is at present maintained by two De Dion Vehicles. [Allgemeine Automobil Zeitung.]

Dupuit, on the other hand, made only a small number of observations deserving any confidence, a total of twenty-six, and these observations were made on wheels of only five different types. It is therefore generally admitted, with Morin, that the traction effort is inversely proportional to the wheel diameter, proportional to the vehicle weight, and independent of the width of tyres within certain limits.

Starting with these facts as a basis, it is possible to calculate the most advantageous wheel diameter for ordinary vehicles carrying a given load, the nature of the surfaces in contact being determined in advance. While this may be an excellent exercise in algebraical calculations, it has no relation to the actual problem, on account of the multiple hypotheses which it is necessary to make, and, as might be expected, the calculation gives the most varied results. The problem is still far more difficult to solve for automobiles. It should be remarked that the experiments of Morin, however much confidence they may deserve, were made exclusively with steel-tyred carrier wheels. To apply their results without reserve to driving wheels fitted with pneumatic rubber tyres would be somewhat risky.

in diameter may be mentioned. This consideration fixes the upper limit of the diameter, as with very large front wheels the car could not be turned in a sufficiently small radius. On the other hand, the weight and frailty of wheels increase very rapidly with the diameter. It is needless to insist upon the increase in the price of tyres.

There is, therefore, little probability that anything could be gained by increasing the wheel diameters actually used, and there is no more probability of anything being gained by reducing them. Wheels of 28 inches diameter, commonly used on bicycles, surmount even small obstacles, such as a street kerb, with great difficulty. Such wheels, of course, possess greater structural strength than those of larger diameter, but the tyres on them wear out more rapidly. The argument that an increase in diameter might have an influence on the speed of racing vehicles merits little consideration, as at racing speeds the air resistance is so much greater than resistance to rolling motion.

A SERVICE of motor-cars has been started between Lemba and Songolabo, in the Belgian Congo, a distance of 220 miles.

CONTINENTAL NOTES.

NOTHING has yet been definitely decided with regard to the course for the German eliminating trials preliminary to the Gordon Bennett race. It is reported that a new road has been unearthed in connection with the course for the great event itself which would render it unnecessary for the cars to pass through Oberursel and Königstein. The Benz Gordon Bennett cars will be of about 80-h.p., and of the gear-driven type.

THE French Automobile Club has issued the programme of the tour to Homburg on the occasion of the Cup race it is organising for its members. It is proposed to leave Paris on June 13th, the night being spent at Rheims; on June 14th Treves will be reached, and Homburg on June 15th. M. Hautvast, who will drive one of the Pipe cars in the Belgian team, went over the course last week. The Pipe racers will, it is said, be of 110-h.p.

SPEED trials on the road not being authorised at the moment, the Nice Automobile Club has decided to organise a two-days' trial for tourist cars to take place on March 22nd and 23rd. The total length of the course will be 400 kilometres. On the first day the cars will run from Nice to Sospel, Fontan,



Motoring in Algeria. Mr S. E. Guy and his 12-h.p. Darracq.

San Dalmazzo di Tenda, Tende, Breil, Vintimille, Mentone, La Turbie, and back to Nice. The route has been selected with a special view to testing the powers of the engines and the efficiency of the brakes. There will be three classes of vehicles, viz., below 12-h.p., 12 to 24-h.p., and cars of more than 24-h.p. The vehicles will have to be complete touring cars carrying passengers. On the second day, an entirely new form of competition will be what is known as the "corso-loto." The course selected is from Nice to Cannes, Agay, Sainte-Maxime, Cogolin, Pioule, l'Argens, Le Muy, the Esterel, and back to Nice. It is somewhat difficult to see the idea or object of the rules regarding the second day's competition, which are as follows:—The cars leaving between 7 and 7.30 will receive three numbered tickets; between 7.30 and 8.30 two tickets, and between 8.30 and 10 o'clock one ticket. The lunch will be fixed at noon at a certain point, and each car arriving before time will receive a ticket, while any competitor arriving afterwards will give up a ticket. At lunch tickets will

be awarded by vote to the competitors who have shown most wit and good humour during the repast, for the most comfortable touring vehicles, for the cars whose passengers are dressed in the most comfortable costumes, and for the vehicles which raise the least dust, all these awards being adjudged by a vote of those taking part in the lunch. The tickets will be doubled in the case of a car driven by a lady the whole day. On the return to Nice each competitor arriving before six o'clock will receive a ticket.

A HILL-CLIMBING competition is to be held on March 6th under the auspices of the Automobile Club of Marseilles. So far five cars and seventeen motor-cycles have been entered for the event.

CONSIDERABLE interest is being shown in the anti-skidding competition which commenced on Wednesday at Versailles, under the auspices of the Automobile Club de Seine et Oise. No less than thirty-four entries have been received, these including the Samson non-skidding band and the Parsons and Sainbury anti-skid devices. The municipal authorities of Versailles have kindly offered to put certain roads into a dangerous condition "for this occasion only," so as to thoroughly test the various arrangements, which on Sunday will be subjected to trial on a prepared track.

THE "Criterium de Consommation" organised by "L'Auto" is to be held on March 3rd, 4th and 5th. The competition promises to be of an interesting character, as about thirty cars have been entered. The types represented are the Chénard-Walcker, Creanche, Gillet-Forest, Peugeot, Mainant, Automotrice, Bardou, Motobloc, Roy, Herald, and Aries.

A SUMMARY of the rules governing the contest for the trophy presented by Professor Hubert von Herkomer to the Automobile Club of Bavaria for international competition amongst tourist cars was given in the *Journal* a month or so ago. It is now announced that the first contest will take place in the first half of August next, the starting and finishing points being at Munich, and entries, accompanied by a fee of £25, should be forwarded to the Bavarian Club by May 1st. The contest for the trophy will include a *concours d'élégance* lasting three days, a three days' road trial, and consumption, brake, hill-climbing, and speed trials. Each vehicle taking part in the contest must be constructed in the country from which it is entered, the only exception to this rule being made in respect of tyres, and no maker will be allowed to enter more than two vehicles. The kilometre speed trial will be run in three classes, for cars up to 15-h.p., cars of 15 to 30-h.p., and for cars of more than 30-h.p.

THE Municipal Council of Brussels has been petitioned to establish a school for professional motor-car drivers, with the object of instructing young men in the theory and practice of the mechanism and driving of automobiles.

IT is reported that six large cars are to be added to the list of automobiles owned by the Kaiser. They will be used to convey heavy luggage between the new palace at Potsdam and that at Berlin.

THE Gillet-Forest Company, which has hitherto only made cars with horizontal engines, is reported to have decided to build vertical engines. A 12-h.p. two-cylinder and a 24-h.p. four-cylinder will, it is said, shortly be on the market.

THE Dutch Government is reported to have placed an order with a Nuremberg firm for an automobile road train of quite a unique type. The driving power is supplied by a 40-h.p. alcohol motor, which drives a dynamo; each wheel has an electric motor fed directly from the dynamo, and the wheels are thus driven without any mechanical complication. The road train will weigh, empty, $7\frac{1}{2}$ tons, and when fully loaded 10 tons; under normal circumstances it is expected to be able to haul a load of 20 tons.

THE OUTLOOK FOR THE CLUB.

SOMETHING like a heat wave seems to be passing over automobile circles in the Metropolis, and wherever two or three motorists are gathered together the prospects and position of the Automobile Club of Great Britain and Ireland become the main topic of conversation. This rapid revival of interest in an organisation whose activity has been almost hydra-headed shows that automobilism is becoming a real force in the land. Whether the Automobile Club will remain as the fount of inspiration for the widening movement largely depends on the results of the agitation that is dividing the trade into factions, and those who motor for pleasure into sections.

It is said that the fact that the Automobile Club has given its patronage to the Ninth International Automobile Exhibition, which opens at the Agricultural Hall on the 19th prox., is the cause of the hubbub. That is certainly assigned as the "head and front of the offending," although there are other matters which have been simmering for months. Something was perhaps needed to precipitate events. Nothing occurred until the Society of Manufacturers sought to disturb the equanimity of things by a suggestion that the Club should undo the resolution adopted in the old rooms in Whitehall Court, and give its name to an exhibition of sectional interest. Naturally the Club could not legislate in such a direction without consulting other organised trade interests, and just as there was one society holding an exhibition, so there was another association sheltering a second display—a second display which, we venture to think, will prove of the first importance. But that is by the way.

The question thus revived all being agreed that an official recognition of an exhibition would be of possible benefit to the industry, the Club naturally considered terms, and had some regard to the raising of funds wherewith to further benefit the industry. Those terms having been offered, they were rejected by one exhibition and accepted by the other. Then the way of the Club was clear. It gave its patronage to Mr. Cordingley's show. One of the results has been the printing of circulars, the writing of letters, and the other effective means of making known the great event of the year. Now comes a demand for a re-constitution of the Automobile Club committee, with the introduction of new men, new manners, and new methods. Only a few weeks ago the trouble with the provincial clubs was negotiated safely without a hitch; now comes an agitation far more serious, and one likely to have even greater results. Even the "Reformers"—agreed though they are upon reform—are divided as to the means, and one caucus seems to be running a list of candidates in which the trade element is prominent. A plea is also being put forward elsewhere for the total elimination of all such interests.

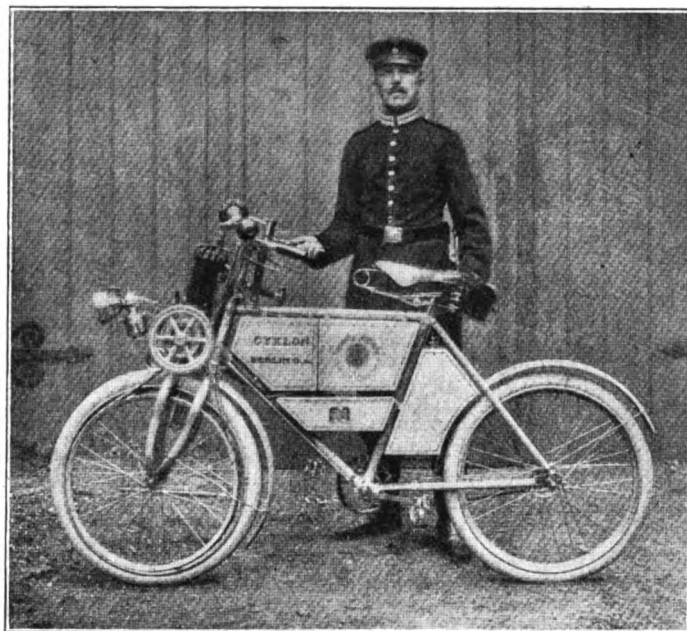
All this will add zest to the annual meeting to be held on the 10th prox., and give rise to many sad reflections on the part of old members. We remember the time when all met together on a friendly footing, when the tours and trips promoted a good social feeling, and the Trials were the joint pleasure of trade and amateur. Times have changed. The new-comers into the Club have proved its disturbing forces; "Society" influence seems to be stepping forward, and it would appear that the A.C.G.B.I. will have soon to consider whether it shall become a purely social club for West End gentlemen, or whether it will continue to recognise its original purpose, viz., the advance of automobilism.

MESSRS. E. AND B. APTE, of Battersea, have sent us a sample of a new terminal for ignition wires they have lately introduced. It consists of a special rubber cap, with hook-shaped terminal, the latter having a screw threaded stem. In fitting the device to ignition wires, about one-eighth of an inch of the insulation should be trimmed off, and the short strand of wires spread out over the end of the cable; the rubber cap is then put on, and the terminal properly screwed in. The terminal, which is known as the "Be Tall," is easy to fix, and has the advantage that there are no bare wires.

MOTOR-CYCLING NEWS.

AN international reliability trial for touring motor-bicycles from Paris to Bordeaux and back is to be held at the end of April by the Autocycle Club de France. The first day's run is to Tours, the second from Tours to Bordeaux; the third day will be devoted to an exhibition of competing machines; on the fourth day the return journey will be made as far as Tours, Paris being reached on the fifth day.

At the Spelthorne (Surrey) Petty Sessions, Mr. Cecil Hewitt was summoned for using a motor-cycle without number or license. Mr. Wilson, of Ashford, the owner of the machine, stated in court that he asked defendant, who was his nephew, and understood motor-bicycles, to try it for him, as he (witness) was about to purchase the machine. The local postmaster said that he did not think a licence would be required for such a trial. The bench, under these circumstances, thought it would be sufficient if the defendant paid the costs of the summons, a concession which will not be repeated elsewhere, seeing that it



A German Military Motor-Bicycle.

is wholly contrary to the clearly-expressed intentions of the Legislature.

AFTER the Auto-Cycle Club's dinner, on the 26th, a discussion on "Ignition" was to be inaugurated by Mr. D. Elyard Brown.

THE annual meeting of the Glasgow Motor-Cycle Club was held last week, when Mr. H. White Stevens, the hon. secretary and treasurer, submitted his report and financial statement, the latter showing the club to have a substantial balance in hand on the year's working. Office-bearers for the ensuing season were appointed as under:—President, Lord Provost Primrose; vice-president, Mr. J. F. Bradford; captain, Mr. C. M. Farrow; hon. secretary and treasurer, Mr. J. S. Fulton, 131, West Regent Street, Glasgow.

CONSIDERABLE activity is being displayed by the Auto-Cycle Club with regard to the organisation of runs and trials. Their latest idea is to sound the trade with regard to holding "all day trials" supplementary to the ordinary 1,000 miles, and arranged with a view of giving the public an opportunity of judging of the merits of particular machines.

The Crystal Palace Automobile Show.

[SECOND NOTICE.]

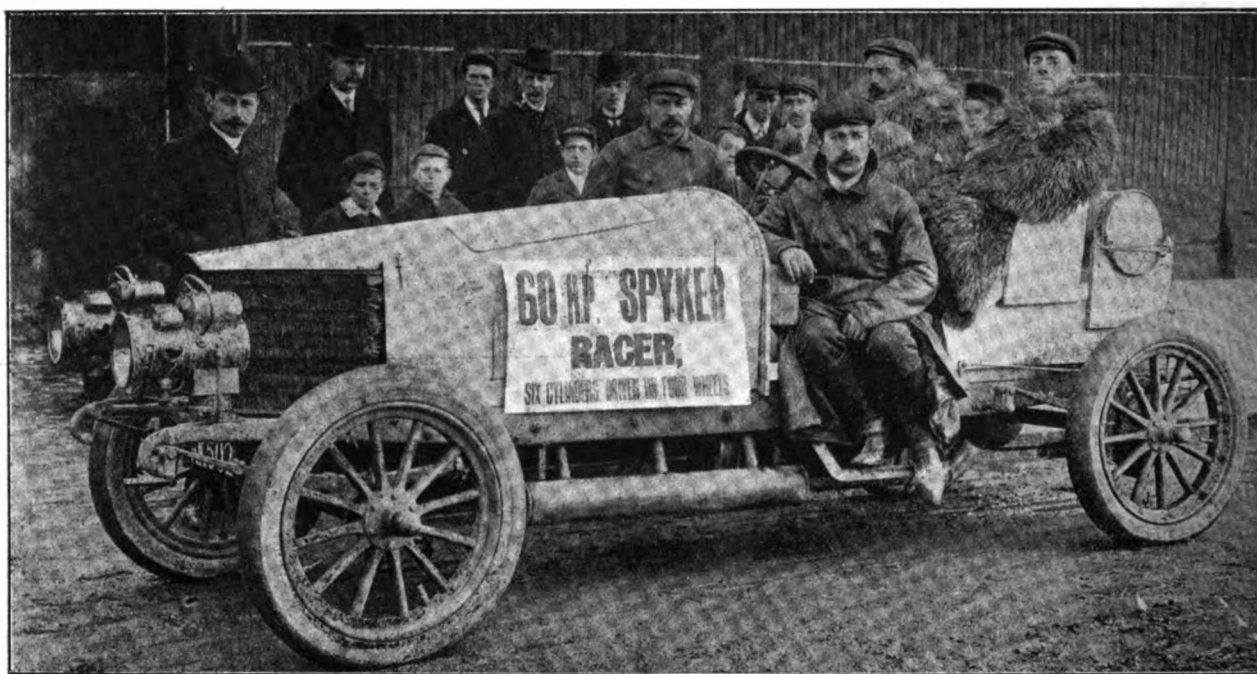


Photo by]

Fig. 29.—The Spyker Six-Cylinder Racer, with all Four Wheels Driven.

[Russell and Sons.

BELOW we continue our review of the recent Exhibition. Several of the notable stands have yet to be reported upon, and this we hope to do in the concluding report to be published next week.

PETROL CARS.

The striking feature of the stand of the **ELSWORTH AUTOMOBILE COMPANY** was the 60-h.p. Spyker racing car, of which an illustration is given in the photograph reproduced above. The vehicle, which was driven down from Bradford by Mr. A. House, is interesting not only on account of having a six-cylinder engine, but by having all four wheels driven. The power is transmitted through a leather-faced clutch to a gear-box, from which extend two cardan shafts, one driving on to the rear axle and the other on to the front one, so that all four wheels are driven. No less than three differential gears are employed, one on each of the axles and one in the gear-box. It is claimed that the car is proof against side-slip, and is more easy to control than the usual type; the vehicle is to be entered in all the leading events of the year, and its behaviour will be watched with interest. As regards the standard Spyker cars, these are being made in three sizes—12-16-h.p., 20-24-h.p., and 30-36-h.p.—all having four-cylinder engines. The car follows the usual lines of cardan-shaft transmission vehicles, among the features being the ready means of access to the pinions in the gear-box, and the pivots of the front wheels, which are entirely enclosed and work in an oil bath. The engine in the Spyker cars is of the vertical type, but a chassis was shown with a special four-cylinder engine known as the 1905 model. At first sight it resembles more than anything else a dynamo. Two cylinders and their valve chambers are cast in one with a large circular water jacket which surrounds the whole. The two castings to form the four-cylinder engine have faces which fit closely together, and are kept in position by bolts. A large body of water—about 1½ gallons—is always maintained around the cylinders, this being circulated in the usual way by pump and fan-cooled radiator. The frame of the Spyker cars is of a special pressed steel shape, filled with ash. The chassis are adapted to take all types of carriage bodies, including those with side entrance. Special provision is made in the way of lockers and drawers for tools and spare parts. We understand that the Spyker Company, for which the Elsworth Company are British agents, have just patented a new automatic carburettor, in which provision is made whereby the petrol supply can be magnetically cut off from the steering wheel. We are not at liberty to give details at the moment, but hope to do so in a subsequent issue.

A new car to England is the "Aries," which is being introduced by the **ANGLIAN MOTOR COMPANY, LIMITED**. It is being made in four sizes—

12-h.p., 16-h.p., 20-h.p., and 30-h.p., all except the first having four cylinders. While following standard practice, they appear to be of high-grade construction, and have certain features of their own. The frames are of pressed steel, with a separate underframe to carry the engines and gear box. The chassis we examined was of the 20-h.p. type. This has an Aster motor, with mechanically-operated inlet valves, and one of the latest Longuemare automatic carburettors. The flywheel has arms made to act as a fan to induce a current of air through the framed ribbed-pipe radiator. Joints are introduced between the clutch and gear box and between the latter and the differential shaft. In the larger cars the transmission is by side chains, but in the 12-h.p. it is by bevel gear on to a live axle. The latter is in one piece, carrying on its centre the differential case. A fixed axle is also provided to carry the weight, and also to avoid the disadvantages of having the back bridge in two pieces. The Anglian Company also had on view a standard 6-h.p. light gear-driven car, fitted with De Dion engine. It is provided with a large two-seated body, with a large luggage and tool box at the rear, this being also fitted with a useful collapsible seat for a third passenger.

The **NORMAL POWDER AND AMMUNITION COMPANY, LIMITED**, who have acquired the agency for the "Prunel" cars in this country, showed a couple of these vehicles—one of 12-h.p. and one of 24-h.p. Both follow, so far as the chassis is concerned, the standard lines of chain-driven cars. The 12-h.p. vehicle has a two-cylinder motor, three speeds and reverse, and a well-finished tonneau body. The 24-h.p. car on view was a more elaborate vehicle, having a side-entrance body of special construction; it is known as a "My Lord," and is capable of accommodating six persons. The motive power is supplied by a four-cylinder Mutel engine having mechanically-operated inlet valves. Four speeds forward and a reverse are provided. A useful feature is the provision of a sliding shelf at the rear, which can be drawn out from under the body when required to carry luggage.

The **GOBRON MOTOR COMPANY** made an excellent display of 12, 20, and 25-h.p. cars, the body-work of which was of the highest class. The well-known Gobron motor, with its two pistons to each cylinder, supplies the motive power. For the majority of the cars the tubular frame construction is retained, but the 25-h.p. car has a frame of pressed steel. The four-cylinder engine, which has eight pistons, is now fitted with a jet carburettor, provided with automatic air-regulating device. The clutch is of new design, being practically in duplicate. The smaller one, which is metal-to-metal, engages first, followed by the engagement of the larger one, the cone of which is leather-faced. Both clutches are controlled by the same pedal; the advantage of the arrangement is that the engine is put into gear without shock, while, to further reduce any strain on the

gear-box, a universal joint is introduced between the latter and the clutch. Four speeds forward and a reverse are available, the transmission being by means of side chains. The Gobron Company, which has taken up the West End agency for the "Vauxhall" 5 and 6-h.p. two-seated vehicles, also included a couple of these cars in their exhibit.

In addition to their well-known "Traveller" voiturette, the ALLDAYS AND ONIONS COMPANY, LIMITED, exhibited for the first time a new 6½-h.p. light car, which appears to be constructed on sound lines. The motive power is supplied by a 6½-h.p. single-cylinder engine with external fly-wheel and mechanically-operated valves. Two forward speeds and reverse, with the direct drive on top gear, are provided, the power being transmitted by bevel gear on to a live axle. Cardan shafts are introduced between engine and gear box and between the gear box and live axle. The standard car has seats for two persons, but one vehicle exhibited had accommodation for three, a separate seat being provided for the driver. We hope to illustrate the Alldays car in a subsequent issue, as it is one which should quickly become very popular.

An interesting vehicle, which hails from Scotland, is the 12-h.p. car of the ALBION MOTOR CAR COMPANY, LIMITED. While following the usual lines of chain-driven vehicles, there are many special features both in connection with the motor and the transmission. The engine has two cylinders, each 4½ in. bore by 5 in. stroke, running at a normal speed of 750 revolutions per minute. The inlet valves are mechanically-operated, while the ignition is by means of the Albion Company's special magneto. A new form of automatic carburettor is provided, the governor acting on this as well as on the magneto and on the throttle valve, so that it will be seen that the engine is provided with a very sensitive control. A honey-comb radiator with belt-driven fan has been adopted in connection with the cooling of the cylinders. The spring drive between the engine clutch and gear box is retained, while we note that the method of controlling the change-speed gear has been improved. A feature of the Albion transmission is that the differential gear is mounted on the longitudinal shaft projecting from the gear box; the cross shaft is in two parts, each driven by its own bevel wheel in the balance gear. They are thus not quite in

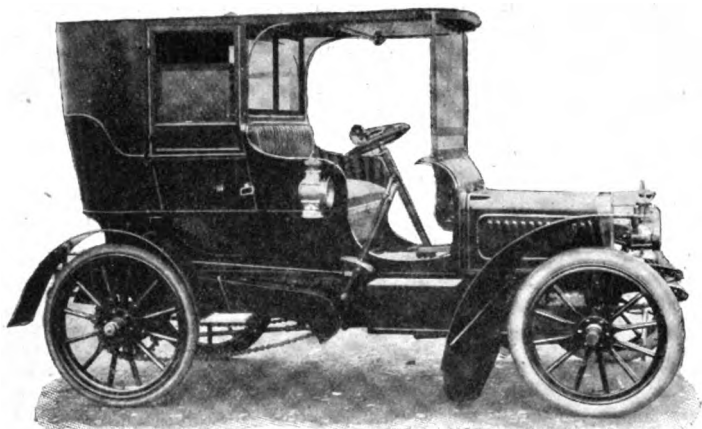


Fig. 30.—The Albion 12-h.p. Brougham.

line with each other, one chain being slightly longer than the other. The arrangement, which we hope to illustrate later on, is stated to have given excellent results in practice. The Albion cars are designed and constructed to run on solid rubber tyres. Of complete vehicles the exhibits included a standard tonneau and one with a new type of body, by Penman, of Dumfries, known as the "Mayfair," which may be used as an open double tonneau or partly closed in in dusty weather or completely closed for winter use. Fig. 30 illustrates the Albion 12-h.p. side-entrance brougham.

The LONDON GENERAL AUTOMOBILE COMPANY, LIMITED, confined their exhibit to a well-finished example of their 16-h.p. "Maxim" car, which, while possessing no striking departure, is on modern lines throughout. The frame is of pressed steel, in the forepart of which is set a double-cylinder engine having cylinders 110 mm. diameter by 120 mm. stroke, and developing 16-h.p. at a speed of 1,000 revolutions per minute. A special form of automatic carburettor is employed, this being so arranged as to give a correct mixture at all engine speeds. Three speeds forward and a reverse are provided, the transmission being by means of side chains. The body is hinged at the rear, so that it may be raised when necessary, to give easy access to the clutch and gear box.

A new light two-seated car which attracted much attention was that shown by MESSRS. J. J. LEONARD AND CO. This is fitted with a 6-h.p. De Dion engine, and drives through a clutch and gear box on to a rear live axle by means of a cardan shaft and bevel gearing. The water-circulation is maintained by a friction-driven pump, the tank and radiator being, however, so arranged that should the pump fail the circulation will be maintained on the thermo-siphon system. The speed of the engine is controlled by means of an exhaust valve lift. Two speeds forward and reverse are provided, controlled by one lever, the power on the top speed being transmitted direct. The brakes are of the double-acting variety

while the lubrication of the engine, gear box, and differential is secured by means of a lubricator with three-way cock, on the dashboard. Fitted with two separate seats, and a large tool box at the rear, the little car compares most favourably with the many that are now being offered to the man of moderate means. Messrs. Leonard also had on view one of their belt-driven motor-bicycles, fitted with 3½-h.p. M.M.C. engines, having Longuemare carburettor and large capacity accumulators. The frame of this machine is of specially strong construction, the engine being set vertically in a loop frame.

MESSRS. S. R. BAILEY AND LAMBERT, LIMITED, confined their exhibit of petrol cars to a neat little two-seated car which they are introducing

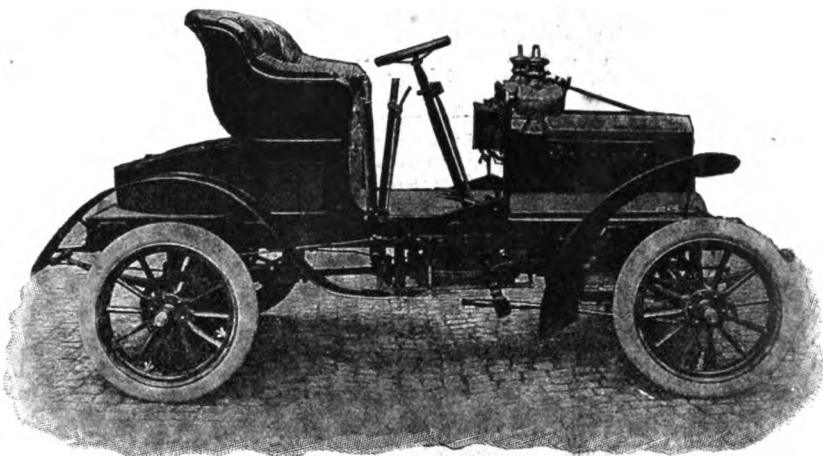


Fig. 31.—The "B. & L." Voiturette.

under the name of the "B. & L." The vehicle follows the usual lines of gear-driven cars, but has a combined wood and steel frame. The motive power is supplied by a 6½-h.p. De Dion or Aster engine, driving through a gear box on to a rear live axle. Three speeds forward and a reverse are controlled by one lever. The car has a long wheel base, and is fitted with two bucket seats and a large tool box at the rear, and also room for luggage. Steering is by means of the usual inclined hand-wheel, while the speed of the motor is varied by means of a pedal acting on the exhaust valve, the pedal being provided with a locking arrangement.

MR. A. MEIER, of the Station Carriage Works, Redhill, had on view a 20-h.p. four-cylinder Thornycroft car, fitted with a handsome landaulette body. The latter, which is Mr. Meier's part of the work, is fitted with canopy and front glass sliding in under the roof. The entrance to the interior is through the left half of the front seat. The body is trimmed in real blue leather, painted blue, with fine orange lines. On the same stand was shown a new two-seated petrol car, of which, in view of its extremely

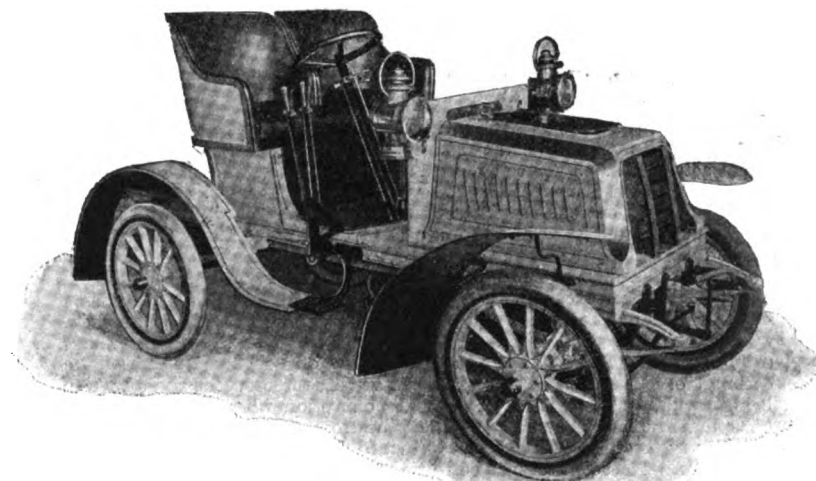


Fig. 32.—The Horley Co.'s Two-seated Car.

low price, a good number are likely to be seen on the roads in a short time. It is being introduced by the HORLEY MOTOR COMPANY, and in general arrangement follows the usual lines of cardan-shaft driven cars. The motive power is supplied by an 8-h.p. M.M.C. motor, with mechanically actuated inlet valves. Three speeds forward and a reverse are controlled by one lever, and 3½ in. pneumatic tyres are fitted to the artillery type road wheels. The body, made by Mr. A. Meier, is trimmed in real leather, and painted in cream, with fine red lines. Ample space is available at the rear for luggage, or a detachable tonneau can be fitted.

MESSRS. JAMES AND BROWNE, LIMITED, had an excellent display of their 9-h.p., 12-h.p., and 18-h.p. cars, which are fitted with horizontal engines, the 9-h.p. having two cylinders, and the 12-h.p. and 18-h.p. four cylinders. Either mechanically-operated or suction inlet valves can be fitted, a feature of both being the ready way in which the valves can be withdrawn. The carburettor has been slightly improved, to give an additional supply of air at high speeds, but the same type of control is retained. The commutator, too, has been altered, though approximating closely to that formerly employed. The 18-h.p. motor has cylinders 4 in. bore by 6 in. stroke, and runs normally at 700 revolutions per minute. Large hand holes are fitted to the crank cases. The clutch is of the metal to metal type, and is connected with a change-speed gear giving four speeds forward and a reverse. In addition to standard tonneau bodies, some of the cars were fitted with a new type of body known as the "Armitage," having entrance to the rear seats at the side. Fig. 33 illustrates the 12-h.p. double landaulette, which, as will be seen, closely resembles an electrical vehicle.

For the 1904 season the SWIFT MOTOR COMPANY, LTD., have brought out several new models which, while following the standard lines of gear-driven vehicles, bear evidence not only of careful design, but of sound construction. We first examined the 7-h.p. car (Fig. 34), which has a tubular frame, in the fore part of which is set a single cylinder engine, 95 mm. bore by 110 mm. stroke, and running at a normal speed of about 1,700 revolutions per minute. The motor has internal flywheels, and is cooled by means of a gear-driven pump, the water circulating through a combined tank and frame and ribbed-pipe radiator. On the outer end of the crank shaft is mounted a drum, which forms part of a conical clutch, transmitting the power to the gear box, which is adapted to give three speeds and reverse with direct drive on the top speed. From the gear box the power is conveyed through a cardan shaft and bevel gearing to a rear live axle, which runs on four ball



Fig. 33.—The James and Browne 12-h.p. Landaulette.

bearings, and is well supported by tie rods. The foot brake is of the metal to metal type mounted on the rear end of the gear shaft, while the hand brake acts on drums connected with the rear wheels. The speed of the engine is controlled by a lever acting on the exhaust valve. The tubular frame is carried on four long and flexible springs, and it is also worthy of note that the fore part of the body is independently mounted on four cushion springs, which eliminate all vibration at the footboard. The steering is of the irreversible worm and segment type. Altogether the new 7-h.p. Swift is an excellent production, and should prove as successful as its forerunner. The Swift Company are also building a 9 11-h.p. car with wood and steel frame. The engine is an Aster two-cylinder with mechanically-operated inlet valves. The latest type of Longuemare automatic carburettor is fitted, while the car is gear driven, three speeds and a reverse being available. Provision is made in connection with the change-gear lever that the latter cannot accidentally be dropped into the reverse motion notch in the sector. The motor is provided with a governor acting on the inlet, a pedal accelerator being also provided. In addition to a tonneau, this type of chassis is also being furnished with a side-entrance double phaeton or landaulette body.

Although only two types of cars were shown by the BELSIZE MOTOR-CAR AND ENGINEERING COMPANY, LIMITED, considerable interest was taken in the display. The Belsize Company were amongst the first firms in this country to introduce the three-cylinder engine, and have adopted this type as the standard for their 1904 16-20-h.p. car. Many novel features are embodied in the vehicle, and in some respects entirely new and complete changes have been made. The cylinders are cast separately, the head and body being in one piece. The diameter is 4 in. and the stroke 5 in. The valves are placed directly on the top of the cylinders, both the inlet and exhaust valves and seatings being readily removed by unscrewing one nut. The crank, instead of being built up as formerly, is now made of

solid nickel steel. The crank case is constructed in two pieces, and so arranged that the lower half can be removed without disturbing the crankshaft and bearings. The valves are operated by two cam shafts running down each side of the crank case and driven by two gear wheels outside the main crank chamber, but enclosed in a separate chamber on the front of the engine. The admission-cam shaft is arranged so as to slide longitudinally, and the cams are stepped down in such a manner that the lift of the inlet valves can be varied at will. This can be regulated from the steering post by a small lever, which enables the engine to be run very quietly when

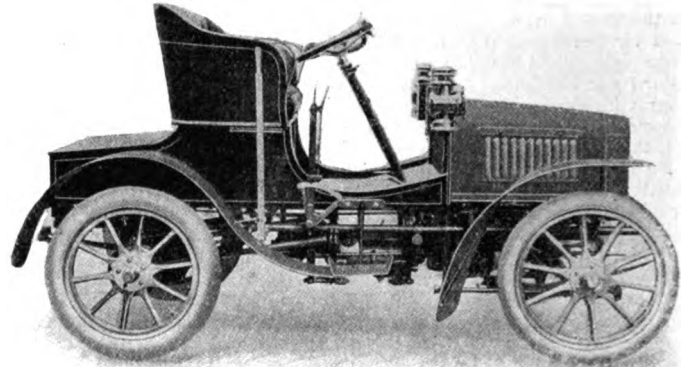


Fig. 34.—The "Swift" 7-h.p. Car.

in traffic, as well as resulting in economy in fuel consumption. The pump is of the eccentric travelling blade type and is driven direct from the crankshaft. The circulating water is kept cool by a honeycomb radiator and fan driven from the crankshaft. Special provision has been made for keeping the level of oil in the crank chamber, and a tap is fitted so that this can be corrected if found necessary on examination. A special form of ignition device has been adopted, all three cylinders being worked from one trembler coil. The commutator is chain driven, and is mounted on the dash-board; it has only one platinum-pointed adjusting screw for all three cylinders. The power is transmitted through a large diameter inverted cone clutch to the gear box. Three forward speeds and reverse are provided, with a direct drive on the top speed. The gears are fitted in such a way that they can readily be detached from the sleeves on which they are mounted. When driving on the top speed none of the gears are in mesh. The power from the gear-box to the back axle is transmitted by a cardan shaft with universal joints and bevel gearing to the rear live axle. The foot brake is applied internally to large drums on the back wheels, and is of the expanding toggle type. The hand brake is also toggle jointed, and acts externally on the same drums. Both brakes are of the double-acting variety. The clutch and brake pedals are of the "push" type. Inclined worm and segment steering is fitted, and the whole of the control levers are arranged on the steering column. A noticeable feature of these vehicles is the method of attaching the springs, these being mounted on special supporting rods on which they are free to slide. To meet the demand for a two-seated vehicle the Belsize Company have arranged to turn out a large number of such cars, embodying all the latest features of the larger

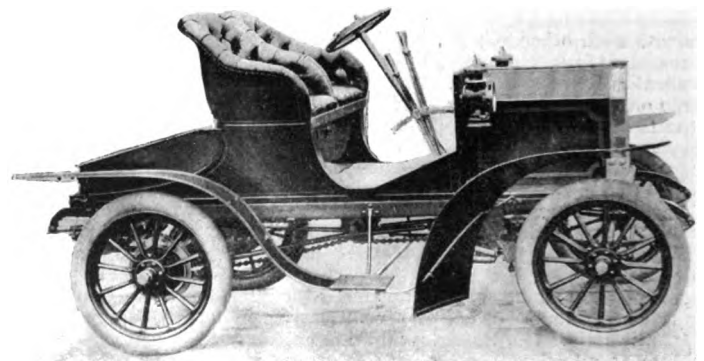


Fig. 35.—The "Belsize Junior" 7-h.p. Car.

and more expensive vehicles (Fig. 35). They are built on pressed steel frames, the ends of which are made in such a manner that they form dumb irons for the springs both back and front. The engine, which develops 7-h.p. at 1,000 revolutions, has a single cylinder, 4½ in. diameter by 5 in. stroke; the exhaust and inlet valves are placed directly on the top of the cylinder head, both being mechanically operated, and by unscrewing one nut the two valves and seats can be removed for adjustment and grinding in. The pump is of the internal cog-wheel type, driven direct from the crankshaft, the water being carried in a honeycomb radiator and tank

combined. An adjustable governor is provided to work on the throttle of the admission pipe and can be regulated from the top of the steering wheel. The change-gear mechanism is placed transversely across the frame in line with the engine and clutch. Three forward speeds and reverse are provided, the drive on the top speed being direct, no gears being in mesh when on this speed. The drive is taken from the engine by a chain to a small countershaft in the centre, and thence by a centrally-located chain to the rear live axle. The chains are enclosed in dustproof cases, so that their life is increased and the minimum of cleaning is required. The steering is of the worm nut and rack type and is irreversible. The control

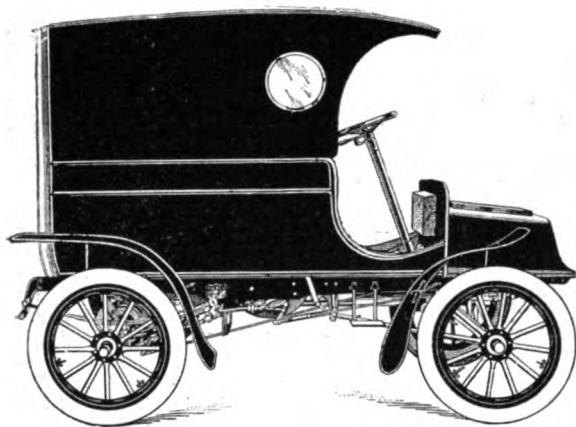


Fig. 36.—The Cadillac Delivery Van.

levers are mounted on the steering-wheel, as in the Mercedes, and the change speed and hand-brake lever racks are fixed between the steering post and dash-board, so that it is possible to get into the driving seat from either side of the car. Metal to metal compensated hand and foot brakes are fitted, and both work equally well either backwards or forwards and act on inside and outside drums on the rear wheels. The live axle is entirely enclosed in an aluminium case so as to protect all the working parts and differential gear from dirt and grit. The length of the car over all is 9 ft., the wheel base 6 ft. 3 in., and the track 4 ft. The total weight is 8 cwt. The body is fitted with two tulip-shaped bucket seats, trimmed in real leather; a box is provided at the back, which is removable, leaving a flat platform on which either a third seat, basket, or portmanteau can be fitted. Fig. 35 shows the car with chain case removed, so as to show the

top. Fig. 36 gives a view of the latter, which is well adapted for tradesmen's purposes, being designed for loads up to 7 cwt. One of the 1904 model 20-h.p. Winton cars was also to be seen at this stand. We notice that the body is of a larger size, giving additional room in the tonneau, and that bigger tyres are now being used. Among the changes in the mechanism may be mentioned an improved contact breaker, and a new system of oil lubrication. The crank shaft bearings are of increased diameter and width. The rear springs are 8 in. longer than those used in 1903.

As we gave a description of the silent Bollée car (Fig. 38) in connection with our report of the Paris Salon, it is only necessary to mention that the SPEEDWELL MOTOR AND ENGINEERING COMPANY exhibited three or four of these magnificent 24-h.p. vehicles in addition to a chassis. A noticeable car was a double phaeton, having a wheel base of 9 ft., while a landaulette

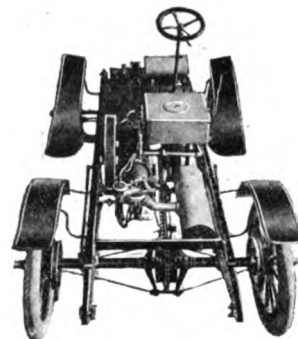


Fig. 37.—Chassis of Cadillac Car.

of the same power was none the less striking. Among the features of the Bollée vehicles is that the engine is suspended at three points of the frame only, one of the points being in a bearing; the gear-box is fixed in the same manner, consequently both of these parts are made to "float" on the frame, and a special form of clutch takes up any non-alignment between the engines and the driving shaft, due to temporary distortion of the frame. The Speedwell Company are catering for all classes of motorists, and for "the man of moderate means" had an interesting series of cars, from 6 to 10-h.p., the latter having a two-cylinder engine. They are on standard lines, and appear to be excellent value for the price, which ranges from 125 guineas upwards.

Messrs. ARMSTRONG, WHITWORTH AND Co., LTD., who have taken over the business of Messrs. Wilson and Pilcher, exhibited chassis of the

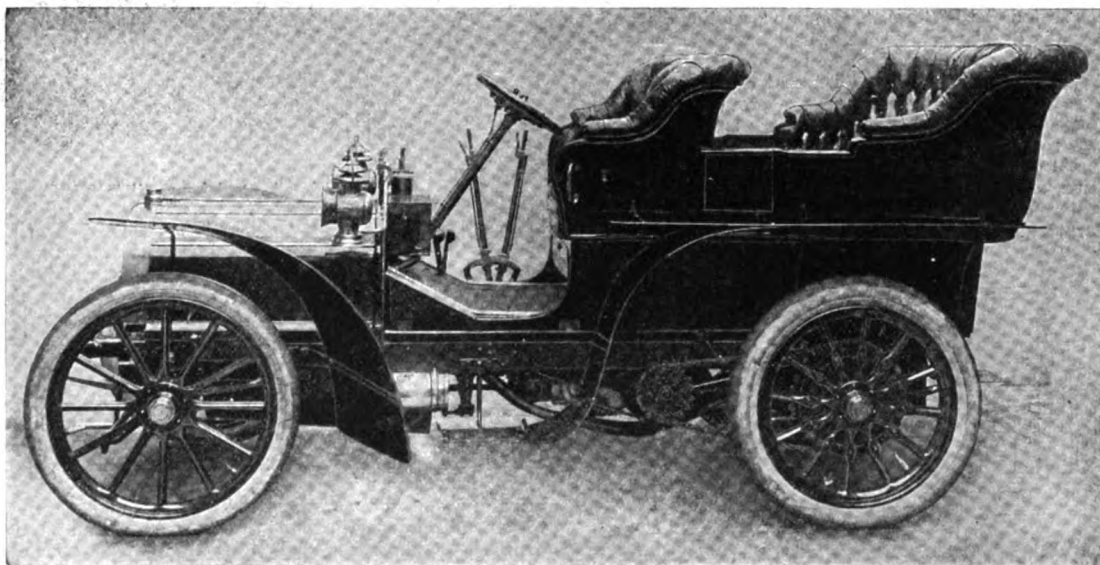


Fig. 38.—The Leen Bollée Car.

chain drive, and gives a good idea of the general appearance of the complete vehicle.

THE ANGLO-AMERICAN MOTOR-CAR COMPANY, LTD., displayed the Cadillac car as built for both pleasure and business purposes. Fig. 37 gives a view of the chassis, from which it will be seen that it is fitted with a single-cylinder horizontal engine of 6½-h.p., fitted with heavy flywheel. Two speeds forward and a reverse are provided by means of a planetary gear, the transmission being by means of a single centrally-located chain. It can be fitted with either a two or four-seated body, or with a van

18-24-h.p. six-cylinder and 12-16-h.p. four-cylinder cars made in accordance with the latter firm's design, as well as several complete vehicles. The Wilson and Pilcher vehicle, which is noticeable for its quiet running, strikes us at first sight as being unduly complex, but from the testimony from users this complexity is more apparent than real. The general arrangement of the two types is practically alike, the main difference being that one has six cylinders as against the other's four; they are horizontally arranged equally on each side of a central crank shaft, which is parallel with the long sides of the frame. The cylinders of the 18-24-h.p. vehicle are 4 in. diameter

by 4 in. stroke. The engine is supported, or, rather, suspended, from an angle steel cradle, and held in a central position by two transverse helical springs, which, when within limits, permit of a slight compensating thrust under road stress or sudden shock. The inlet valves are of the suction type, and the exhaust valves are placed below the cam shafts; the commutator and a winged pump for the water circulation are driven by helical gear wheels. There are three speeds forward and reverse; the driving-shaft, being longitudinal, extends right through to the rear shaft, passing through the firm's patent reduction gear. This is worked by

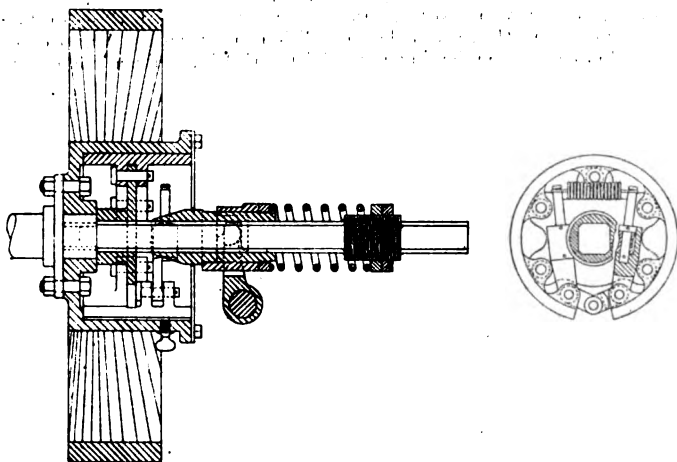


Fig. 39.—Sectional and End View of Clutch on Sunbeam Six-cylinder Car.

friction clutches of the direct-acting cone type. The drive on the back axle is through special helical gearing, the reverse motion being operated by sliding one of the two helically-cut bevels on the axle into gear with the helically cut bevel on the propeller-shaft end. Samples of the Wilson-Pilcher commutators, piston rings, and patent induction valves were also on view. The commutator is made to suit engines with from one to six cylinders. It is fastened to a sleeve running loose on the half-speed shaft, and one of the special points in connection with it is that the rubbing contact cannot become detached from the carrier as long as the outer ring is in place. It can, however, be immediately removed by drawing off the outer ring from the two bolts, without the necessity of disconnecting the wires from the contact pieces.

The chief feature of interest at the stand of MESSRS. J. MARSTON, LIMITED, was the new six-cylinder Sunbeam car, of which a brief description was given in our issue of the 6th inst. To the particulars then given we may add that the engine is rated at 16-18-h.p. The pump is friction driven, and is located just below the dashboard. The flywheel has arms formed to act as a fan to draw a current of air through the honeycomb radiator. The clutch (Fig. 39) is of the metal-to-metal internal expanding type running in oil. Two speeds forward and a reverse are provided, with a direct drive on the top speed. From the latter the power is transmitted by side chains to the rear road wheels. The brakes are three in number, two internal metal-to-metal on the rear wheels running in oil and in the chain cases, and the third, also metal-to-metal, on the differential shaft, the latter brake being water cooled. Carried on the steering wheel are the two levers for the accelerator and variable lift to the inlet valves, whereas

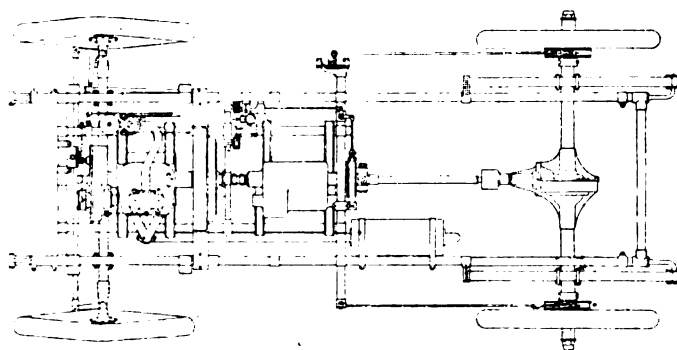


Fig. 40.—Plan of Humber 2 1/2-h.p. Light Car.

the advance spark lever is underneath the wheel in the position it occupies on the 12-h.p. cars. The steering is non-reversible, with the cross bar located behind the axle so as to reduce to a minimum the risks of accidents. An effort has been made in the new car to abate the dust fiend by putting a new type of steel shield under the vehicle from end to end. There is nothing whatever below this shield excepting the steering arm and the pipe to carry away the exhaust. The 12-h.p. Sunbeam cars show little change from last year, the type having proved so satisfactory that radical alterations have not been found necessary.

In addition to a display of motor-bicycles and Olympia tandems, MESSRS. HUMBER, LIMITED, had a large exhibit of cars ranging from 5-h.p. to 25-h.p. The larger types—14-h.p. and 25-h.p. four-cylinder—have undergone but little changes since last year, while the 5-h.p. two-seater car fully maintains the favour it met with on its introduction. To meet the demands of those requiring a rather more powerful car, two new models have been brought out. Fig. 41 shows the new 6 1/2-h.p. two-seater vehicle. The engine, which has a bore of 3 1/4 in., and stroke of 4 in., is fitted with an ordinary type of centrifugal governor, which acts upon the throttle on the induction pipe between the Longuemare carburettor and the inlet valve, a pedal-actuated accelerator being also provided. In addition to the enclosed flywheels, a large diameter flywheel is keyed to the crankshaft, and forms one half of the conical friction clutch. A gear box giving three speeds and a reverse is fitted to this car, the drive on the top speed being direct. Cycle-type wheels are fitted to the Coventry-made cars, and artillery wheels to those turned out at the Beeston works. The body is made extra wide so as to give ample seating room for two passengers, and it is provided with side doors. The weight of the car complete is about seven hundredweight. The 8 1/2-h.p. car (Fig. 40) has a vertical water-cooled double-cylinder engine. The normal speed is 1,000 revolutions per minute. The power is transmitted through a light aluminium leather-faced cone clutch, so arranged as to prevent any end thrust on the bearing. The engine is fitted with a governor acting on the admission pipe. The change speed gear is of the usual sliding type, giving three speeds forward and a reverse, with a direct drive on top speed. From the change-speed gear the power is conveyed to the live rear axle by a universally-jointed shaft and bevel gearing. The usual Humber patent single arm steering wheel is fitted, thus giving perfect accessibility to the control levers. The steering is of the worm and segment type, and the height of the steering wheel can be readily adjusted to suit requirements. The road-wheels are of the artillery type, 28 in. in diameter, fitted with 3 in. pneumatic tyres. With the advent of these two new types Messrs. Humber, Limited, have now a range of cars which should suit all tastes and requirements.

The "Fiat" cars, shown by FIAT MOTORS, LIMITED, take a very high place among modern automobiles. They are of Italian construction, and

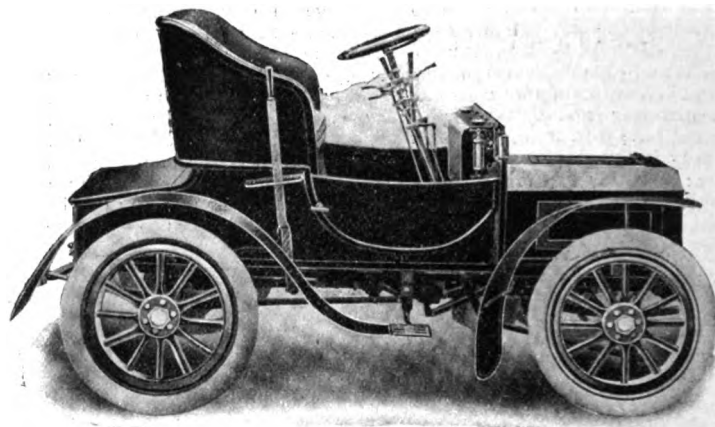


Fig. 41.—The 6 1/2-h.p. Royal Humberette.

in many respects are closely allied to the Mercedes; they possess many features of their own, however, among which may be mentioned the automatic advance and retard of the magneto ignition, this being provided with its own centrifugal governor. Needless to say, the frame is of pressed steel, and the engine is of the four-cylinder type. The 16-21-h.p. type has cylinders 110 mm. in diameter by 110 mm. bore, the normal speed being 800 to 1,000 revolutions. The engine speed can, however, be varied from 150 to 1,800 revolutions. The carburettor is of the automatic variety, regulating both the supply of air and petrol by means of a needle valve and plunger, acted upon both by the governor and from the steering wheel. The clutch is of the coil type, while the transmission is by side chains. A special point is the lubrication, all bearings being oiled from the dashboard. The oil is contained in a reservoir in which is a spindle driven by the engine through a belt and worm gear. To the spindle are provided a number of very small buckets, which, as they rotate, pick up a certain amount of oil, which is emptied into its corresponding pipe. There are many other points of interest in the Fiat cars, of which a handsome 16-h.p. side-entrance double phaeton and a limousine, in addition to a smart 24-h.p. racer, developing up to 37 h.p., were exhibited.

THE DAIMLER MOTOR COMPANY, LIMITED, had a large and imposing stand, consisting of vehicles mainly of two types—18-22-h.p. and 28-36-h.p.—a chassis of each being shown. Each of the 1904 type chassis is fitted with a slow-running engine, and among the new features may be cited the suspension of engine and gear, entirely obviating the use of a lower frame, and ensuring perfect alignment; mechanically-operated valves; single trembler coil system of ignition, and magneto system when desired; double-acting compensated band-brakes, on sprocket pinions and rings. The four-cylinder engine fitted to the 28-36-h.p. chassis has a bore of 110 mm. and a piston stroke of 150 mm.; at 750 revolutions per minute it develops 28-h.p. It can be readily accelerated to 1,000

revolutions per minute, and under these conditions gives 36-b.h.p. Both induction and exhaust valves are mechanically operated, and are placed on the same side of the engine. The carburettor and throttle is of new design, giving a positive regulation of mixture at all loads and speeds of the motor, and combined with it is a graduated throttle, which is actuated by the governor and also by hand. The fan-cooled radiator, pump, and engine water jackets are located closely together and connected by short and direct pipes, thus ensuring free circulation and effective cooling. Passing from the engine and its adjuncts, we find

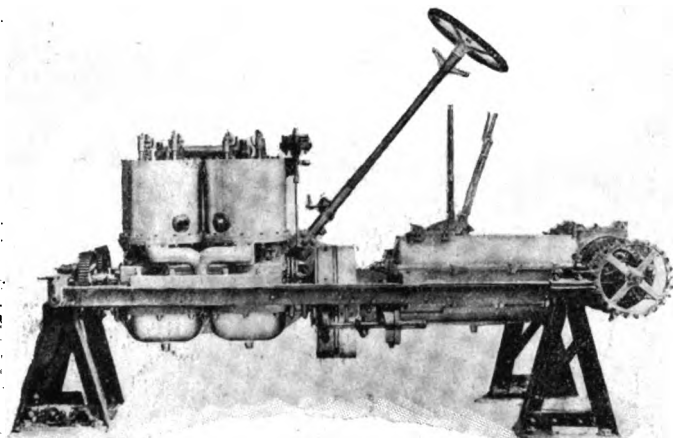


Fig. 42.—The Engine and Gear Box of the new 24-28 h.p. Burlington Car.

that the power is transmitted to the road wheels by the usual system of friction clutch, cog gear and chains. The first is provided with a simple and easy method of adjustment. The gear-case and transmission gear does not present any strikingly new features, but it may be noted that the case itself is so suspended as to permit of self-alignment. The bearings are fitted with automatic ring lubrication. The brakes are two in number, the one being fitted on the inner side of the driving pinions on the cross-shaft, and the other on the inner side of the sprocket rings fitted to the driving wheels. As in last year's types, the application of the hand brake does not withdraw the clutch. Turning to the frame, a new construction has been adopted, straight steel plates being used in combination with wood and channel steel. It is narrowed in the front, without in any way weakening the side members, and the underframe of former years has been entirely dispensed with. The length of the springs has also been increased. The wheel base is 9 ft. 6 in., and the approximate weight 18½ cwt. The 18-22-h.p. chassis is to all intents and purposes a replica of the 28-36-h.p. referred to above, except, of course, in the matter of actual dimensions, and the lighter character of its component parts. The four-cylinders have each a bore of 95 mm. and a stroke of 130 mm. Passing to the complete cars, we noticed a 28-36-h.p. covered phaeton, with a wheel base of no less than 11 ft. It has accommodation for seven passengers, and is provided with a door on either side.

In addition to several De Dietrich cars from the French works, the BURLINGTON CARRIAGE COMPANY, LIMITED, had on view the chassis of a new car made from the designs of Herr Bugatti, at the German works of the De Dietrich Company, and which they are introducing into this country under the name of the "Burlington." The car, which is made in two sizes, 24-28-h.p. and 30-36-h.p.—the one on view being of the smaller

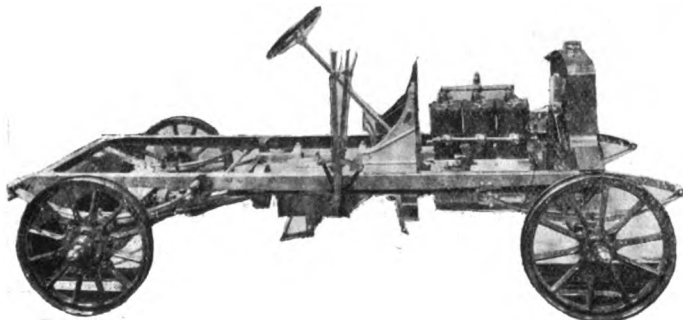


Fig. 43.—Chassis of National 15-17 h.p. Three-cylinder Car.

type—differs materially from the French De Dietrich vehicles, which are made on what is known as the Tureat-Mery system. In the first place the engine and gear box are mounted on a frame entirely separate from and attached to the main frame by four bolts. Fig. 42 gives a view of the engine, gear box, and differential shaft, mounted on its special frame, this being so contrived that no deformation of the car frame can affect the motor or gear, and that the weight of same is taken directly by the springs of the car without bearing on the main frame. The motor is a four-cylinder one, and possesses mechanical inlet and exhaust valves, actuated by two sym-

metrical shafts arranged on both sides of the motor. The position of the valves on the top of the cylinders permits them to be easily inspected and detached. On the upper surface are situated also the sparking plugs and the four compression cocks. A novel feature of the engine is that the cylinders are cast in pairs, each pair being surrounded by a removable sheet copper covering. The removable water jacket facilitates the formation of the cylinder body and permits hollow spaces to be provided everywhere, so that all the walls of explosion chambers, valve seats, etc., can be plentifully surrounded with cooling water. In fact, the cooling of the motor owing to this arrangement is claimed to be more effectually provided for than by any other system. A special form of carburettor is employed to furnish an automatically-regulated mixture in connection with the advancing of the ignition, so giving the motor great elasticity, and allowing of any desired speed from six miles per hour up to the maximum speed, without changing gear. The motor and change-gear are connected by an aluminium cone leather-faced clutch. Four speeds and reverse are actuated by one lever, the transmission from the differential shaft being by means of side chains.

The "National" is the name of a new British-built 15-17-h.p. three-cylinder car exhibited by MESSRS. LAMB BROTHERS, the selling agents for the makers, Messrs. Rose Brothers, of Gainsborough. The vehicle (Fig. 43) is of high-class construction, having a frame of pressed steel, to which is riveted a steel underframe carrying the engine and gear box. The motor has three vertical cylinders, 4 in. diameter by 5 in. stroke, cast separately with combustion chamber and water jacket complete. The valves are all mechanically operated off one cam shaft; they can be detached by unscrewing one nut. The commutator is conveniently arranged in an inclined position at the rear end of the crank case, and is gear driven. The crank shaft is of nickel steel carefully balanced and supported in four long bearings. The carburettor is of the self-adjusting spray type. The governor only comes into action when the maximum number of revolutions is attained, the normal speed being 850 revolutions per minute. The inlet valves are provided with variable lift device controlled by a small lever on the steering wheel. The water circulation is effected by a gear-driven pump in conjunction with a tubular radiator. The fan which induces a current of air through the

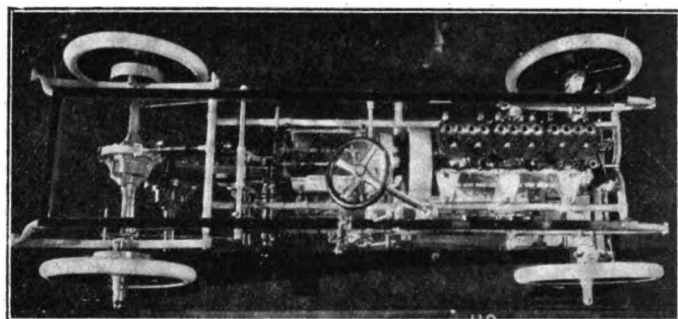


Fig. 44.—Chassis of Ariel Six-cylinder Car.

latter is designed so that the slack or stretch of the belt can be instantly taken up by a spring device. From the engine the power is transmitted by a conical friction clutch of improved design, and thence by means of large gear wheels to cardan shaft and a live axle. A feature of the clutch is that the male portion, on being released, runs idly on the gear shaft, so facilitating the changing of the gears. The gear box is made in halves—on removing the top half both shafts and gears are exposed. Three speeds forward, with direct drive on top speed, and a reverse, are operated by one lever. A double-acting metal-to-metal internal expanding band brake is fitted on the main shaft outside the gear box, actuated by foot lever. Double-acting internal expansion brakes are also fitted to each of the rear wheels, these being controlled by a hand lever.

One of the finest displays was that of the ARIEL MOTOR COMPANY, LIMITED, not only from the point of view of excellent cars, but also from the standpoint of automobile education, for in addition to the chassis of the four and six-cylinder types, samples of the material and component parts of the cars were on view. For the coming season four types are being made, viz., 15, 18, and 20-h.p. four-cylinder, and 30-h.p. six-cylinder. The engines have mechanically-operated inlet valves, operated off the same cam shaft as the exhaust valves, with which they are interchangeable. Provision is made for varying the lift of the inlet valves from the steering wheel. A special form of spray carburettor is employed, and the governor is arranged to act on the admission. The water circulation is maintained by a friction-driven pump on the four-cylinder cars, and a gear-driven one on the six-cylinder, all having fan-cooled radiators. The flywheel is quite separate from the clutch, the latter receiving the power from the engine shaft through a forked arm. The clutch itself is of the leather-faced cone type. All the vehicles are gear driven, the four-cylinder type having four forward speeds, and the six-cylinder (Fig. 44) three, in addition to the reverse in each case. The rear road wheels are not mounted on the differential axle, but on a sleeve surrounding the latter, the power being transmitted to them at the ends. There are many other features of interest in the Ariel cars which pressure on space prevents us dealing with at the

moment, but we may briefly refer to the carriage work, which is of a very high class; especially was this noticeable in the 15-h.p. landaulette with long wheel base. Finally, we may state that the actual car which recently made the climb up the railway on Snowdon was on view, and looked none the worse after its formidable task.

In addition to the 12-h.p. British-built car described in our report of the National Cycle Show, in November last, the DURYEA COMPANY exhibited a new 15-h.p. vehicle, with Willans and Robinson engine, special change speed gear, braced fore-carriage and steering gear, as well as improved brake and control gear. Needless to say the workmanship is of the highest class, the new models being a distinct advance on their American progenitor. The three-cylinder horizontal engine is retained, but a number

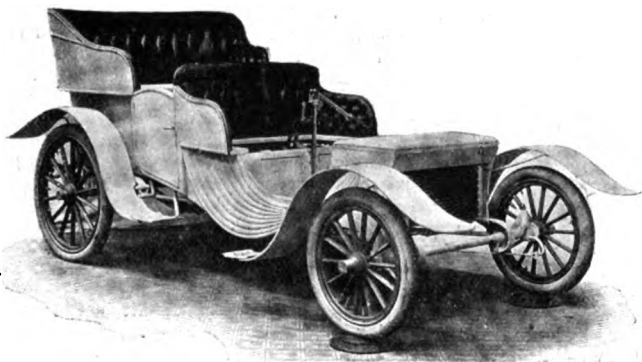


Fig. 45.—The Duryea 15-h.p. Side-entrance Car.

of modifications have been made with the view of increasing its efficiency. Thus the water jacket is larger than hitherto. The water circulation is maintained by a chain-driven pump and radiator. Both the inlet and exhaust valves are mechanically operated off one cam shaft, and all six valves are interchangeable. The crank chamber is of aluminium with removable inspection covers, and the three-throw crankshaft is cut solid out of one piece of steel. Whilst the magneto generator is still retained for spark generation, it is chain driven, and the current is passed through a coil, transformed to high tension, and used in the engine through ordinary sparking plugs. Several important improvements are introduced in this system, the magneto generating current of sufficient intensity for sparking at "dead slow" speed, and not only so, but automatically governing the spark advance in accordance with the speed of the engine. The power is transmitted by a specially-constructed Renold roller chain. The engine is used as a brake, and supplemented by three powerful metal to metal grip brakes, two of which act in direct connection with the wheels. The axle is made of nickel steel, and by the construction of the new fore-carriage not only is the front (tubular) axle held to its work by tension rods, but these are so fitted on universal joints that the axle is free to move vertically at either end without throwing any strains on other parts of the car, and an entirely new front spring system is introduced. On the stand were shown samples of the engine and various other component parts of the cars, as well as a number of large drawings illustrating different types of bodies. Of special interest was a 15-h.p. vehicle with long wheel base, having a side-entrance tonneau body (Fig. 45). In their new form the Duryea

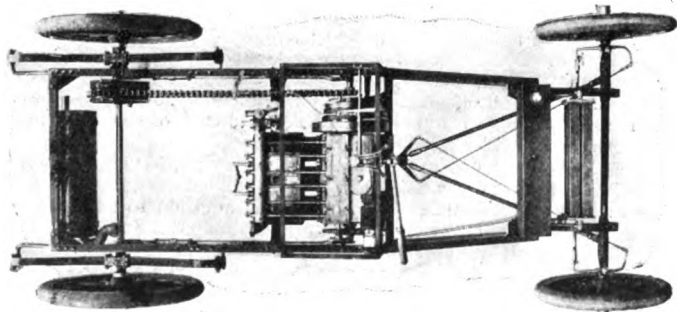


Fig. 46.—Chassis of Duryea 15-h.p. Car.

cars are not only of high-grade construction but of pleasing outline, and we look forward to seeing many of them on the road at no distant date.

Although located in side courts, a large number of visitors found their way to the stands of the CANNSTATT AUTOMOBILE SUPPLY ASSOCIATION and MESSRS. MANN AND OVERTON, the attraction being the examples of the 1904 models of the 18-28-h.p. Mercedes there exhibited. The vehicle varies in several details from last year's type; the engine has four cylinders, 100 mm. diameter by 130 mm. stroke; all the valves are mechanically operated and interchangeable, the inlets being on the left and the exhaust on the right, looking from the dashboard. As will be seen from Fig. 47, the carburettor is located quite close to the admission ports. The magneto,

which is on the right side, has in connection with it a plug switchboard, by means of which any one of the cylinders may be cut out for testing purposes. The variable lift to the inlet valves has been abandoned. The flywheel has arms made to act as a fan; it is of larger diameter than last year. The gear box shows little alteration, but an ingenious arrangement is provided for automatically opening a cock when the brake pedal is applied, allowing water to flow to the band brake on the differential shaft. The frame is somewhat longer than last year, being now 8 ft. The axles are of H section, but stronger than in the 1903 models. Provision is made for locking the

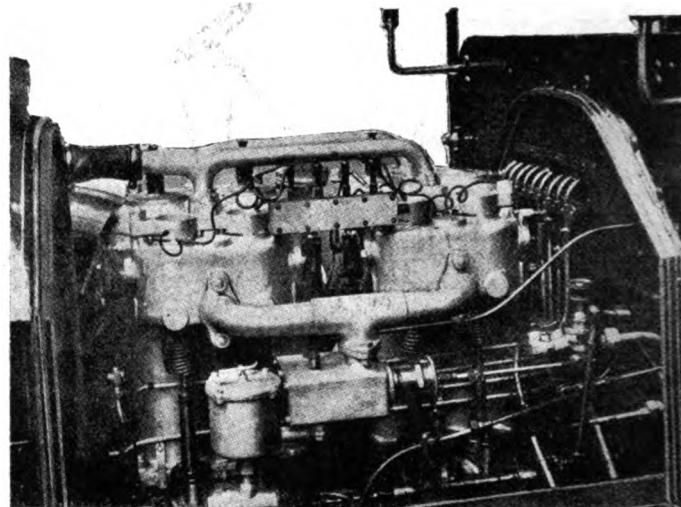


Fig. 47.—View of Inlet Side of 1904 Mercedes 18-28-h.p. Engine.

differential shaft, in case of damage to one of the chains. We are also informed that the car is capable of running 20 per cent. faster than hitherto.

The "GERMAIN" cars were displayed by MR. THEO. MASUR, principal interest being centred on the new Germain Standard 16-h.p. four-cylinder car, which is noticeable for its extreme quietness in operation. The four cylinders are separate and are each made from a solid bar of steel. The water jackets are of copper. The inlet and exhaust valves are interchangeable, and actuated mechanically off the same cam shaft. The inlet valves are provided with a device, controlled from the steering wheel, by means of which the lift of the same can be varied, and consequently the speed of the motor regulated. Both battery and Eisemann high-tension magneto ignition are fitted, one advance and retard lever controlling both systems. The radiator is of the honeycomb type, the arms of the fly-wheel being formed to act as a fan to draw a current of air through the radiating tubes. Three

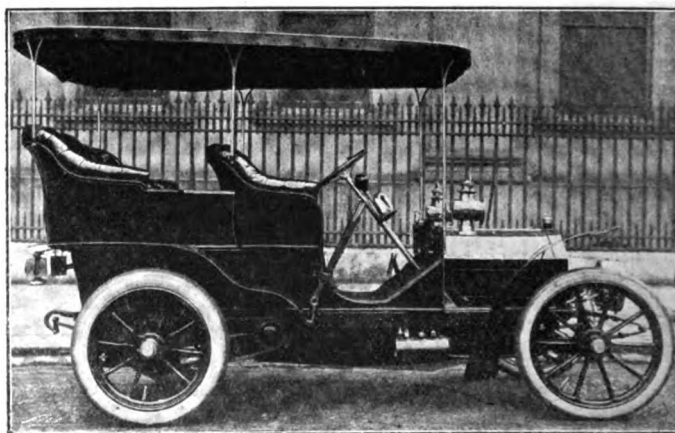


Fig. 48.—The 1904 Mercedes 18-28-h.p. Car.

point suspension has been adopted for the change speed gear box, which provides four forward speeds and a reverse, controlled by one lever. The car is chain driven from the countershaft, and can be fitted with any type of carriage body. On this stand was also a 9-h.p. delivery van, to carry loads up to 30 cwt., and the Samson non-skidding unpuncturable bands for pneumatic tyres.

At the stand of AUTOCARS AND ACCESSORIES, LIMITED, were displayed specimens of the 10-h.p. two-cylinder and 15-h.p. three-cylinder Minerva cars, built by La Société La Minerve, of Billancourt, near Paris, and of which a description was given in our report of the Salon in December last. The bore and stroke of the cylinders of both types are similar, and

the inlet valves are mechanically operated. Interest at this stand was mainly centred on the working models of the Hitchon change-speed gear, the pinions of which are mounted on free-wheel clutches. The pairs of pinions are so arranged that there are always at least two pairs in mesh, the power being transmitted through the pair giving the higher gear. Thus, while the other pair is running it is doing no useful work, being overrun by the higher gear. As the speed is changed down by bringing the pinions of the lower gear already partly in mesh fully so, this takes up the drive. In this way the changing of gears is facilitated, as there is always a gear partly in mesh to take up the drive when necessary. The way Mr. Hitchon, the inventor, could pass from one gear to another made a distinct impression, while the fact that it has been subjected to a lengthy trial on a heavy car with good results speaks much in its favour.

There are many special features in the new 10-h.p. silent safety car exhibited by the ALBANY MANUFACTURING COMPANY, of which a general view



Fig. 48.—The Albany "Safety Silent" 10-h.p. Car.

is given in Fig. 49. The engine is of the horizontal single-cylinder type, 5 in. bore by 6 in. stroke, the normal speed being about 850 revolutions per minute. The engine is set in the front end of the frame, a little to one side, and with the flywheel parallel with the road wheels. Both valves are mechanically operated; a large vertical silencer is provided in the front part of the car, a novelty being that the exhaust gases are first made to pass through a kind of turbine, which in turn drives the fan connected with the tubular radiator. A special form of carburettor is employed to furnish the mixture, the clutch pedal being connected with it in such a way that the engine is slowed down when the clutch is withdrawn. The engine is connected through a leather-faced cone clutch to a short shaft, on the rear end of which, in a gear-box, is a worm screw meshing with a special worm pinion on the change gear speed shaft, which is at right angles. Two speeds and a reverse are provided, the drive on the top speed being direct through a cardan shaft and bevel gearing on to the rear live axle. The first speed and reverse motion are obtained by means of gears of the Crypto type. The Albany Company also exhibited a 16-h.p. four-cylinder car on the standard lines of chain-driven vehicles, a feature being the special apparatus by means of which the engines and different bearings are lubricated. On the dash under the bonnet is an oil reservoir, in which is a cylindrical drum rotated by mechanical means. Bearing lightly on

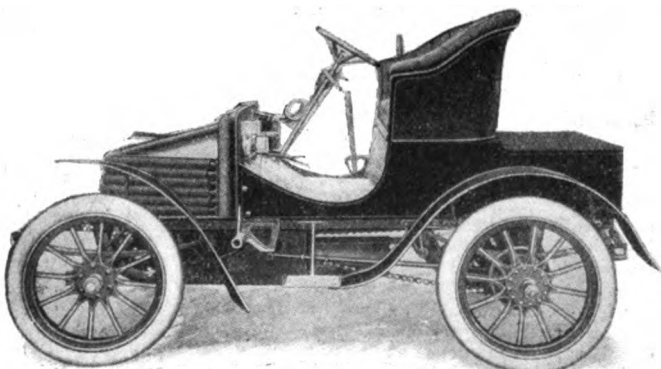


Fig. 53.—The Wolseley 6-h.p. Light Car.

the drum are a series of little trays, each connected with a feed pipe leading to a different bearing. The little trays are of different sizes; and as the drum rotates, a thin layer of oil adheres to it, which is gathered up by the trays; a continuous supply of lubricant is thus assured to the various bearings as long as the engine is running. Various types of the Albany radiators and condensers were exhibited, as well as pressed steel frames. We learn that the Albany Company are putting down a plant for the production of the latter at their works at Willemsden Junction.

The WOLSELEY TOOL AND MOTOR-CAR COMPANY, LIMITED, had, as usual, a large stand, on which were shown examples of their 8-h.p., 12-h.p.,

16-h.p., and 24-h.p. cars fitted with various types of bodies. Among the detail improvements in the popular Wolseley cars we may note the adoption of pressed steel frames and H section front axles. The countershaft brake has now been removed, and the gear box rendered practically oil-tight. The brakes are concentrated upon the road wheels, the pedal brake being of the expanding type, and the hand brake of the external band variety, both acting on the same drums. The silencer has been increased in size, while the gear box is now suspended from three points only. The Wolseley Company are also bringing out a new automatic carburettor, the pressure of the exhaust being utilised to act on a diaphragm connected with a valve, which, as the engine increases its speed, allows more air to be drawn in. The new 6-h.p. two-seated Wolseley car was shown in England for the first time and came in for an unusual amount of attention. As will be seen from Figs. 50 and 51, it is a replica in miniature of the large Wolseley cars. It is provided with a single cylinder horizontal engine, $4\frac{1}{2}$ in. bore by 5 in. stroke, running normally at 800 revolutions per minute, and giving $6\frac{1}{2}$ h.p. at that speed. No governor is provided, and the motor is capable of acceleration to about 1,000 revolutions. It is suspended horizontally underneath two transverse members of the frame, and is so arranged that the crankshaft and countershaft are both parallel to the rear axle. The moving parts are carefully balanced, and a heavy fly-wheel is provided. The inlet valve is placed immediately above the exhaust valve. The commutator is actuated directly from a worm wheel fixed on the end of the crankshaft. Ignition is high tension, the coil being placed on the dashboard. The carburettor is of the float-feed type with gravity feed from the petrol tank. The speed of the motor is controlled by a hand-operated throttle on the admission. The clutch, by means of which the motor can be thrown in or out of gear, is fitted on an extension of the first-motion shaft in the gear box, and is of the ordinary cone type actuated by pedal; a spur wheel is attached to the male portion of the clutch, which is driven from the crankshaft by means of a Renold silent chain. The gear box is of the usual Wolseley pattern, and is provided with three speeds forward and one reverse, actuated by one lever. In this car, on account of its light weight, the Wolseley Company have departed from their usual practice and have fitted the car with a live axle of an entirely new pattern, driven by a

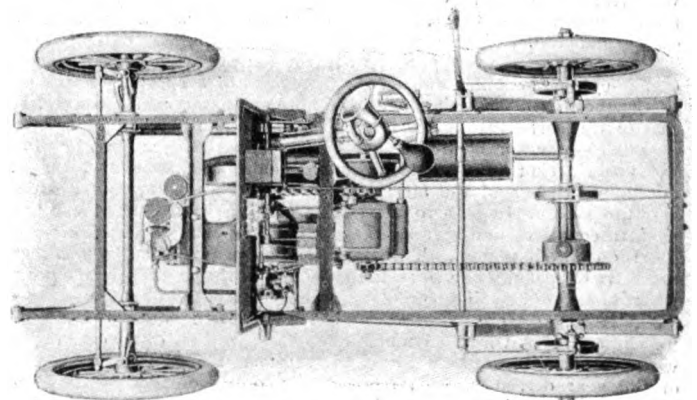


Fig. 1.—Plan of Chassis of Wolseley 6-h.p. Light Car.

central chain from the gear box countershaft. The differential gear is of the straight tooth type. A pedal operates a band brake on the differential box, and a side hand-lever actuates equalised band brakes acting on the driving wheel hubs; both brakes act equally well in either direction. Steering is controlled by the usual inclined column and hand-wheel. The wheels are of the artillery type, 28 in. diameter, fitted with $3\frac{1}{2}$ in. heavy pneumatic tyres. The wheel base is 5 ft. 6 in., and the track 4 ft. The car, which weighs $8\frac{1}{2}$ cwt., can attain a speed of 25 miles per hour.

MESSRS. SELBACH, LIMITED, making their first appearance since the registration of Mr. Selbach's business as a limited liability concern, had a large display, extending over three stands, of various accessories, fitting, etc., as well as of Regal cars, which are now made in several sizes, from the single cylinder 6-h.p. vehicle to the 24-h.p. car. Recognising the demand from the middle classes for a good car at a moderate price, Messrs. Selbach made a feature of the Regal car, the points of which have been rendered familiar to motorists at several recent exhibitions. This has a 6-h.p. De Dion engine, with a carburettor of the same make. A centrifugal pump, driven by friction off the flywheel, circulates the water through the radiator in front of the bonnet. The water tank is placed above the motor, so that should the pump fail to work no damage would result, the water being circulated by gravity (thermo-syphon). The ignition is on the high tension system. A conical friction clutch, which can be connected to and disconnected from the flywheel by the left pedal on the footboard, transmits the power to the change-speed gear. This clutch is of the internal type, all enclosed in the flywheel, so that oil and dirt cannot get to it. The change-speed gear provides two speeds forward and one reverse, operated by the same lever; the drive is direct on the top speed, so that the power is transmitted direct from the motor to differential on live axle. A universally jointed shaft connects the speed gear to the differential, which is of the spur-wheel type. The forward speeds are 7 and 20 miles an hour, and a reverse speed is also fitted. The right pedal actuates, by means of rod connections, a

large band brake, the drum of which is on the shaft at the back of the gear box. The side brakes are actuated by a lever; the hubs of the driving wheels contain two segments, which, when expanded, can block the wheels if necessary. The two sets of brakes are metal to metal, and double acting. The car is fitted with a two-seated body.

MESSRS. DE DION BOUTON, LIMITED, had a very interesting display of their 6, 8, 10, and 12-h.p. cars. The 6-h.p. type has undergone but little

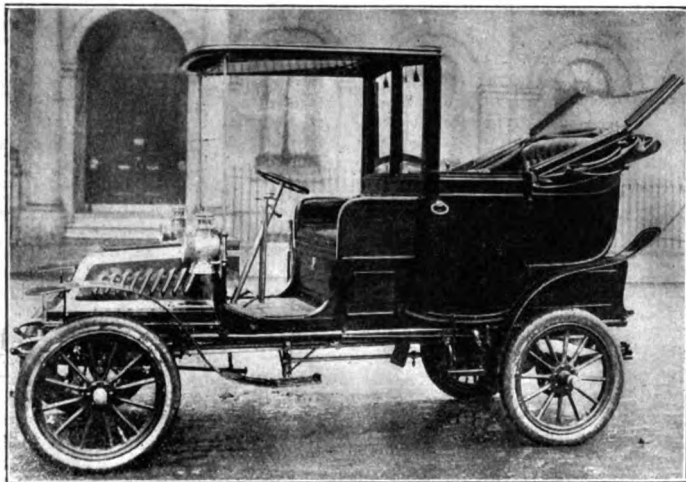


Fig. 52.—The De-Dion 8 h.p. Landulette.

change from last year, except perhaps in body work. One car on the stand was arranged for use by doctors, having solid tyres and a spider seat at the rear. In the 8-h.p. types, the cars on view comprised a landulette and a double phaeton, with side entrance, both being built on extended chassis. The 10-h.p. cars were perhaps the most interesting type; these have double-cylinder engines, lubricated by means of a special pump attached to the motor itself. Other points of note are found in the contact maker and in the carburettor, this having one float chamber and two spraying chambers—one for each cylinder. The carburettor is provided with a hot water jacket; a hand lever controls both the throttle valves on the admission pipes and the air inlets, so that the quality and quantity of mixture allowed to pass to the engine can be varied. The car is fitted with three speeds and reverse, the change gear being a modification of the De Dion clutch system. The De Dion Company's stand was a most instructive one, as it included sectional models of the engine, change gear, etc., so arranged that visitors could examine their method of action.

MESSRS. B. THOMPSON AND CO., LIMITED, made a display of the "Achilles" cars, which are made throughout at their own works at Frome; without presenting any radical departure from standard practice, they are of the gear driven variety, and appear to be soundly constructed and of excellent value. They are made in four sizes, 6-h.p., 8-h.p., 9-h.p., and



Fig. 53.—The Achilles 8-h.p. Car.

12-h.p., the latter having a two-cylinder engine. Selecting the 8-h.p. car for special notice, we may mention that the frame is of tubular construction. The engine has a cylinder 100 mm. bore by 110 mm. diameter, and runs at a speed of from 1,500 to 1,600 revolutions per minute, its speed being controlled by means of the ignition and a throttle valve from the steering column. The water circulation is maintained by a gear driven pump. Three speeds forward and a reverse are controlled by one lever, on the top

speed the drive is direct, none of the gear wheels on the side shaft rotating. From the gear box the power is transmitted by a cardan shaft, having two special universal joints and bevel gearing, on to a live axle. The differential gear is of the spur wheel type. The brakes are of the metal-to-metal type. We may add that Goodall's Automobile Agency have secured the representation of the "Achilles" cars in London and the home counties.

THE VULCAN MOTOR COMPANY, LIMITED, had on view a little two-seated car of 6-h.p., which, in view of its relatively low price, should meet with much favour. The single-cylinder engine is set in the fore part of the frame, and drives through a clutch, cardan shaft, and bevel gearing on to the rear live axle. The change speed gear is enclosed in the same casing as the balance gear at the rear, and is adapted to give three speeds forward and a reverse. Steering is controlled by a hinged side tiller, on which the change-speed lever is mounted. Altogether, the little car is one of the best we have seen at the price. The other vehicle exhibited was of a large type, having a 10-h.p. double-cylinder engine, with mechanically-operated inlet valves. The mixture is furnished by an automatic carburettor, while the governor is adapted to act on a throttle on the admission pipe. The transmission is by cardan shaft on to a live axle, three speeds and a reverse being provided.

Still another firm to take up the construction of six-cylinder cars is the MAUDSLAY MOTOR COMPANY, LIMITED. This is of 40-h.p. and consists of two pairs of three cylinders, each one of the pair being in one casting and having its own separate crank chamber. The bore of the cylinders is 5 in. and the stroke $3\frac{1}{2}$ in., the engine normally running at 900 revolutions per minute. All the valves are located in the top of the cylinder heads, and are mechanically actuated by a pivoted cam shaft running along the top of the engine. Ample inspection doors are provided to the crank chambers to give access to the connecting rods and big ends, etc. The carburettor is of the float-feed type and provided with valves which automatically allow additional air to enter when the motor is running at a high speed. Four speeds forward and a reverse are provided, the

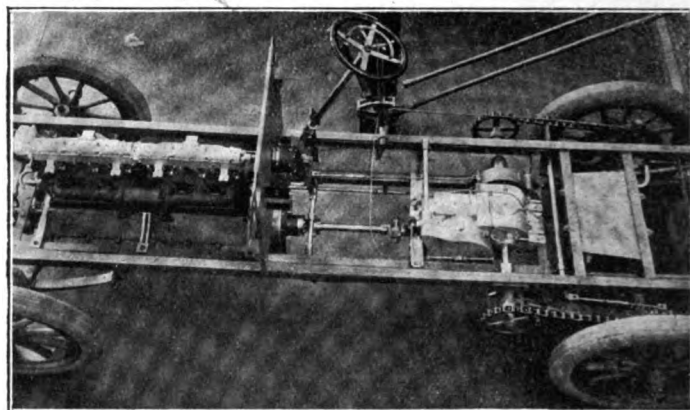


Fig. 54.—Chassis of Maudslay 40-h.p. Six-Cylinder Car.

transmission being through a leather faced cone clutch, gear box, and side chains. The frame is of square section tube filled with ash, a speciality which the Maudslay have used for some time with great success. The 18-h.p. cars are practically a replica of the above, except that instead of six the engine comprises only three cylinders of the same bore and stroke. Another type is one having a three-cylinder engine developing 25-h.p. The Maudslay cars have a very long wheel base, and are thus adapted to be fitted with large bodies. Those on the stand included a eight-seated wagonette-omnibus with a removable top and an 18-h.p. double-phaeton, all of the highest class and construction.

MESSRS. J. E. HUTTON, LIMITED, had a large stand, on which were exhibited several of the latest types of three and four-cylinder Panhard cars; noticeable vehicles being one of 24-h.p., fitted with a special phaeton body by Labourdette, and one of 18-h.p. arranged as a brake for shooting parties, with accommodation for eight passengers. A 12-h.p. standard Brooke car, fitted with a Roi des Belges body, was also displayed. In this car Messrs. Brooke and Co. have not departed in any material manner from their regular practice, and we learn that, owing to the great success of this type, it is intended to continue its manufacture in addition to two new models—12-h.p. three-cylinder light car and 15-h.p. four-cylinder touring car. The engine of the standard car has three cylinders giving 14-h.p., and is placed transversely on the frame, the drive to the gear box being by Renold silent chain. There are three forward speeds and reverse, all actuated by one lever, and the change speed gear is by means of chains on the patented system of Messrs. Brooke. It was also intended to exhibit a chassis of the new 20-h.p. Hutton car, made in accordance with Barber's patents, but this is being reserved for the Show at the Agricultural Hall next month. Parts of the vehicle were, however, shown, including the engine, which has four cylinders cast in two pairs. The valves are mechanically actuated off one cam shaft; the inlets, which are located on the top of the cylinder heads, are provided with a valuable lift device. The governor is mounted on the half-speed shaft. The cylinders

are 90 mm. diameter by 124 mm. stroke, the normal speed being 1,000 revolutions per minute. The radiator is of novel design, and is made of aluminium; it consists of a large number of tubes bent to a special shape, and arranged in five groups; it is stated to be very efficient, while its weight is only 30 lbs. A model of the Barber variable gear was also shown; this is quite a radical departure, and cannot be well described without a drawing. It must suffice for the moment, therefore, to say that it gives infinite variation of speed between zero and the maximum, this being obtained by means of a variable throw eccentric on the driving shaft.

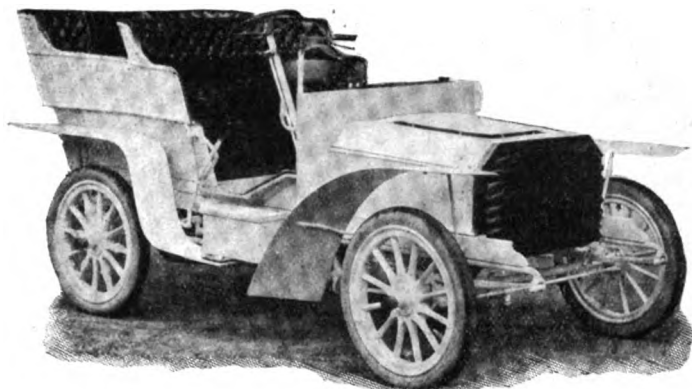


Fig. 55.—The Pick 10-h.p. Car.

Altogether the Hutton car promises to be one of the *clous* at the forthcoming show.

MESSRS. KRUPKAR, LIMITED, had on view no less than four types of cars. First we examined the 12-h.p. "Opel Krupkar," a two-cylinder vehicle very much on the lines of the Darracq, but noticeable owing to the relatively low price at which it is being offered. Another interesting vehicle is the 16-20-h.p. "Cudell Krupkar," which has a pressed-steel frame and all other features of modern gear-driven vehicles. The "Krupkar" 12-14-h.p. two-cylinder vehicle was also on view, while a very novel three-wheel car, as illustrated in Fig. 56, was displayed. The motive power is supplied by a two-cylinder V-shaped 6-h.p. engine, driving on to the front axle through a gear giving three speeds forward and a reverse, and a chain. The pinions in the gear box are always in mesh, the requisite pair being brought into gear by a sliding feather. The axle of the rear wheel works on a circular path and forms the steering wheel, which is controlled by a side tiller,

the 10-h.p. (Fig. 55) 3½ in. by 4 in., the normal speed being 1,200 revolutions per minute. Three speeds forward and a reverse are provided, a Renold silent chain connecting the engine with the gear box, and a single centrally-located roller chain conveys the power from the latter to the rear live axle. The engine has been much improved in detail, all bearings have been lengthened, and the lubricating arrangements improved, the Dubrulle exhaust pressure lubricator being now used. The Pick patent cam brake, which has been illustrated in the *Journal*, is fitted to these cars.

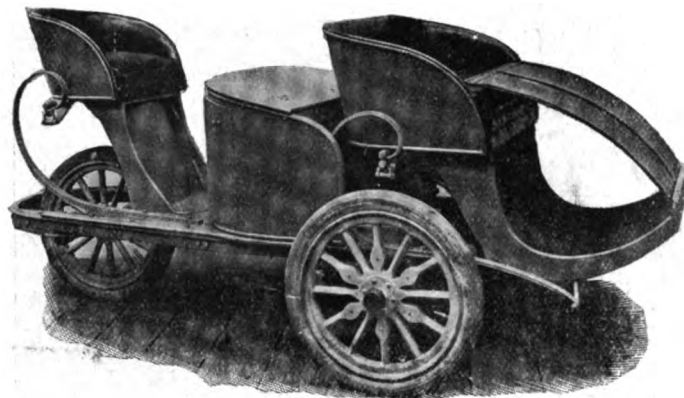


Fig. 56.—The Krupkar 6-h.p. Three-Wheel Car.

In addition to one of their standard 10-h.p. single-cylinder cars, the REX MOTOR MANUFACTURING COMPANY, LTD., exhibited a number of the 12-h.p. "Rex-Simplex" vehicles (Fig. 57), fitted with various types of bodies. The engine, which is mounted on the fore part of a hammered steel frame, has two vertical cylinders, 4 in. dia. by 4½ in. stroke. The engine and gear box, as well as the body, is directly attached to the main frame, no under-frame being employed. A feature of the engine is that no outside fly-wheel is employed, each connecting rod being attached to a couple of discs acting as flywheels inside the crank case. The exhaust as well as the inlet valves are located in the top of the cylinder head, the exhaust valves being operated by a side rod and suitable levers very much in the way adopted in the Buchet engines. The carburettor is of the float-feed type with a throttle valve attached. The gear box, which is adapted to give three forward speeds and a reverse, with a direct drive on the third, is supported from the frame by long arms extending from the case to the sides of the frame.

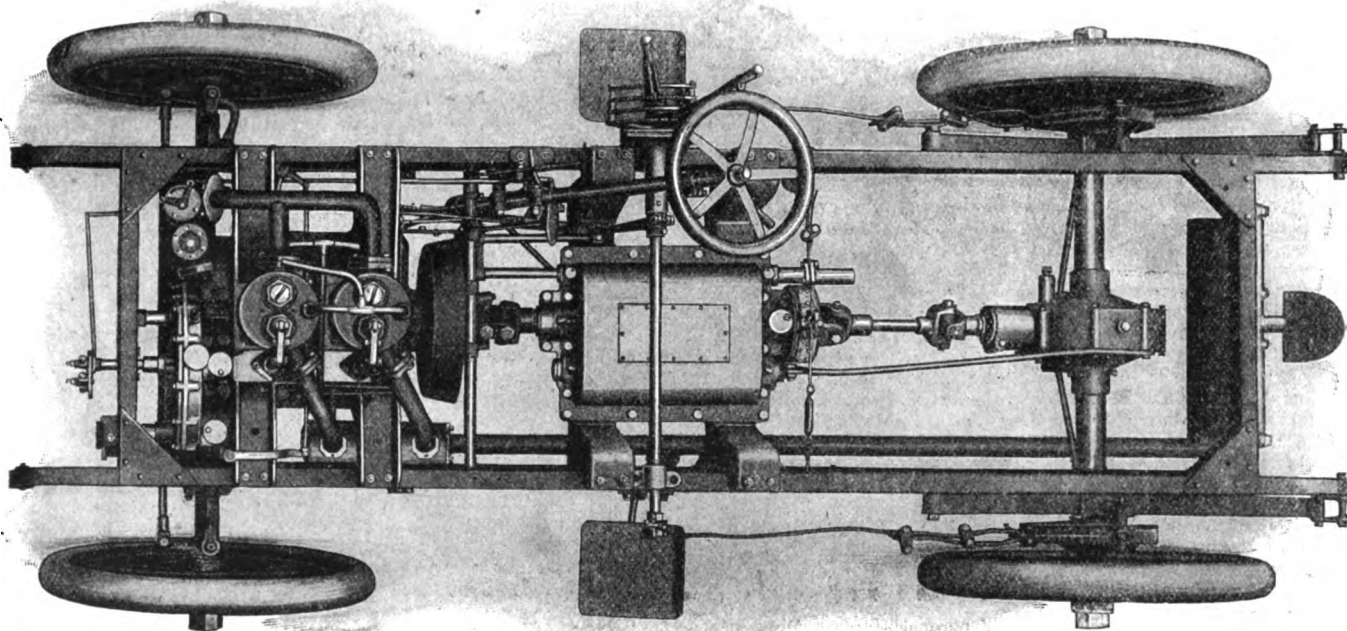


Fig. 57.—Plan of Chassis of Rex-Simplex 12-h.p. Car.

not shown in the illustration. The vehicle is designed to attain speeds up to twenty miles an hour, and is arranged to be fitted with a chest to carry parcels for tradesmen's use.

For the 1904 season the PICK MOTOR COMPANY, LIMITED, are making cars of 6 and 10-h.p., each of which can be fitted with different types of bodies. The engines are of the horizontal type, with opposed cylinders, those on the 6-h.p. having cylinders 3½ in. diameter by 3½ in. stroke, and in

Very wide pinions are employed in the gear box; the cardan shaft and bevel gear system of transmission on to a live axle is adopted, universal joints being introduced not only in the cardan shaft, but between the gear box and the clutch. The latter is of the cone type, 15 in. in diameter, and can be readily dismantled without disturbing the change speed gear. Altogether the new Rex car is a marked advance on its predecessors from the same works. On the same stand were shown a number of the popular

Rex motor-bicycles and a "Rexette"—a two-seated three-wheel vehicle which can neither be classed as a car nor a cycle. It is fitted with a 4-h.p. water-cooled engine, which drives the rear wheel through a clutch and chain, the latter being enclosed in a gear case.

The PHOENIX MOTOR COMPANY confined their exhibit to a chassis and a complete car of their 12-h.p. type, which is fitted with a vertical double-cylinder engine. The valves are all mechanically-operated, a feature being the variable lift device fitted to the inlet valves, an arrangement we hope to illustrate later on. The car is of the gear-driven, live-

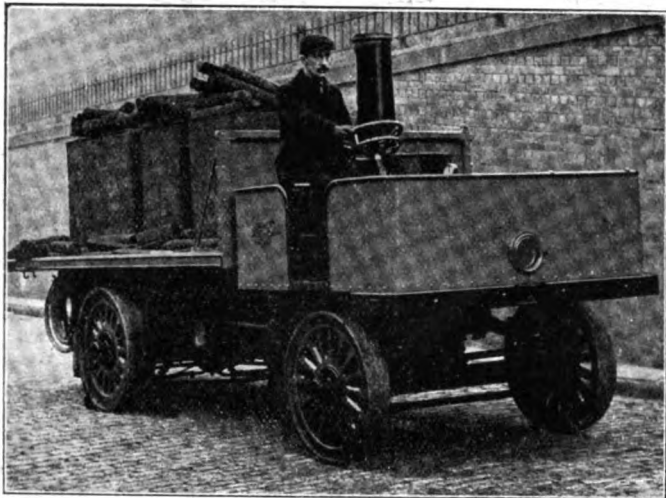


Fig. 58.—A Coulthard 4.5 ton Lorry carrying 6 tons up a gradient of 1 in 7½.

axle type, special provision having been made to keep the bevel gear drive properly in mesh. Three speeds forward and a reverse are provided, with direct drive on top speed. Other points of interest in the Phoenix car are the quick-release joint on the admission pipe, the double silencer, and the joint between the clutch and gear box. Altogether there is ample evidence that a good deal of time and careful study has been devoted to its production.

In addition to their standard 10 and 20-h.p. pleasure cars, the THORNY-CROFT STEAM WAGON COMPANY, LIMITED, exhibited for the first time a petrol motor lorry, designed to carry loads of two tons. The engine is of the four-cylinder type of 20-h.p.; four speeds forward, ranging from 2½ to 10 miles per hour, and a reverse are provided, the transmission being by means of side chains. The SIMMS MANUFACTURING COMPANY, LIMITED, displayed examples of their 10-h.p. two-cylinder, 20-h.p. and 30-h.p. four-cylinder pleasure cars, a 12-h.p. delivery van to carry 15 cwt., and the chassis of a new 5.6-h.p. voiturette. The well-known magneto ignition and the Arbel stamped steel frames and disc wheels were also to be seen at this stand.

A new firm to London shows was MESSRS. WILSON BROTHERS, of Bedford, who had on view three "Bedford" cars of respectively 6-h.p., 10-h.p., and 16-h.p., all of the gear-driven variety. The 6-h.p. car was noticeable for its long wheel base, 6 ft., and the fact that it was fitted with "compound" cushion tyres; it having been built to the order of a doctor. The De Dion engine is provided with a water-circulation, maintained by a friction driven pump and framed radiator. Three speeds forward and a reverse are provided. The frame is constructed of wood and steel, on which is mounted a neat two-seated body, having a sliding drawer and tool box at the rear. The 10-h.p. car has a Tony Huber engine, with mechanically operated inlet valves. Three speeds and a reverse are controlled by one lever, the drive on the top speed being direct. The 16-h.p. car was fitted with a handsome Roi des Belges body; the motive power is supplied by one of the latest 16-h.p. Aster four-cylinder engines, lubricated positively by means of a Dubrulle exhaust-pressure lubricator. The change speed gear box is adapted to give four forward speeds in addition to a reverse motion. Without possessing any striking departure, the Bedford cars appear to be soundly constructed vehicles.

A German car new to this country was exhibited by the NEUE AUTOMOBIL GESELLSCHAFT, of Berlin. Two were shown, a 20-h.p. four-cylinder chain-driven limousine and a 10-h.p. two-cylinder tonneau with cardan shaft transmission. They follow standard lines, a feature being the radiator with which they are fitted; this consists of a large number of small vertical tubes set in a circular frame, and so arranged that any tube which may get damaged can easily be replaced.

STEAM VEHICLES.

MESSRS. T. COULTHARD AND Co.'s, LIMITED, exhibit was an instructive one to users of heavy motor vehicles, as, in addition to showing one of their latest four-five ton wagons, they also had on view a vehicle which has, in the service of Messrs. F. Skurray and Sons, Swindon, covered over 18,000 miles. Messrs. F. Skurray were one of the first millers in the country to put motor-vehicles to work in connection with their business, and, as an indication of their satisfaction with the same, we may state that the new wagon on

view was also intended for them, making the third Coulthard vehicle they have had. The boiler is of the vertical fire tube type, centrally fed from the top and constructed for a working steam pressure of 200 lbs. per square inch. A feature of the compound engine lies in the method of suspending it from the frame, while another of the specialities to which much of the success of this type is due are the spherical bearings and flexible joints which prevent any distortion of the frame which might otherwise be caused by variations of the load or uneven roads.

MESSRS. JESSE ELLIS AND Co., LIMITED, exhibited two heavy steam vehicles, one being a sanitary tip wagon, the body of which can be removed and a large tank for road watering purposes fitted in its place. The one is a new design, of four-ton capacity, fitted with an improved form of fire-tube boiler and patent spring arrangement.

The largest display in the heavy-vehicle section was that of the STRAKER STEAM VEHICLE COMPANY, LIMITED, no less than eight vehicles being shown. The five-ton wagon has been modified in several details with a view to securing increased efficiency and economy. It is designed to carry a net load of five tons at a maximum speed of seven miles an hour, and to be capable of ascending gradients up to 1 in 6. The weight of the vehicle is taken at three points, two on the back axle and one on the spring cradle on the front, which allows the axles to assume different inclinations to each other. The steering gear has been almost entirely re-designed, so that it now gives a straight front axle in all vehicles, with the worm spindle at right angles to the axis of the wagon. The boiler is of a new and improved pattern and of much larger capacity. It consists of four shells, each two of which form a concentric annular water space, connected up by a nest of horizontal radial water tubes, which form the effective heating surface. When cleaning becomes desirable, it is only necessary to break the two joints formed by the outer dome, which, when removed, exposes the whole of the tube nest. The engine is of the compound type, having cylinders 4 in. and 7 in. by 7-in. stroke, which, at the working pressure of 200 lb., is capable of developing 40-i.h.p. Another of the new features is the ease with which the engine casing can be opened up, the top cover being mounted on a parallel motion, which enables it to be easily raised and pushed to one side. The five-ton Colonial wagon differs from the standard type in having stronger steering gear, supported with a back stay, and in being equipped with rear wheels 4 ft. diameter by 15 in. face, and front wheels 3 ft. diameter by 7-in. face, enabling it to pass over soft and unmade roads. A winding drum is also fitted on the back axle, so that in the event of the machine ever getting into difficulties when far away from assistance, it can always extricate itself. The two-ton chassis is a new type, designed to meet the requirements of railway companies and general carriers. It is intended to carry a net load of two tons at a maximum speed of ten miles per hour, and to be capable of ascending gradients up to 1 in 6. As in the case of the five-ton, the spring suspension is taken on three points. The boiler, although of smaller size, is identical in design. The engine is of the compound horizontal type, having cylinders 3½ in. by 6 in., and 4½-in. stroke, giving approximately 25-i.h.p. Two gear speeds are provided, four to ten miles an hour. Lorry or van bodies can, of course, be fitted to the chassis. An interesting vehicle was a twenty-passenger omnibus, intended for service between Penrith and Patterdale, in the Lake District. It is designed on the same lines as the five-ton wagon, but is of a somewhat lighter description, and with the necessary modifications for obtaining an increased speed. It is designed to carry one ton of luggage in addition to twenty passengers. The over-all dimensions are 21 ft. by 6 ft. 6 in., and the maximum speed

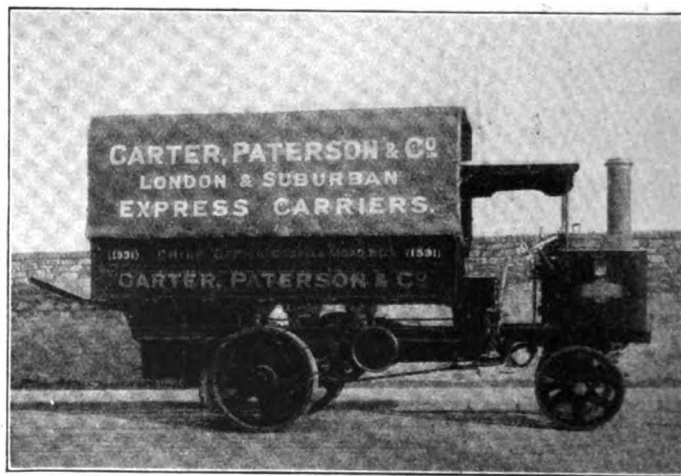


Fig. 59.—The Straker 5-ton Delivery Wagon.

ten miles per hour. The wheels are shod with steel tyres, but, to reduce vibration, the body is mounted on rubber blocks, interposed between the frame and the bearers. The machine is fitted with sand-boxes for the prevention of skidding when the roads are in a greasy condition, while, for the comfort of passengers during winter weather, a system of steam heating, supplied from the boiler, is arranged. Another public service vehicle was a twelve-passenger omnibus, constructed on the two-ton chassis described above.

Messrs. BAILEY AND LAMBERT had on view a *chassis* and a complete tonneau of the Miesse 10-h.p. steam cars, built by TURNER'S MOTOR MANUFACTURING COMPANY, LIMITED. The car is driven by a horizontal three-cylinder engine, steam for which is provided by a flash-type generator. The latter is made of solid-drawn weldless steel tubing of about 200 ft. in length, which is made up into sixteen layers of snake coils. The burner is of the Bunsen type, and consumes ordinary American paraffin oil as fuel. The oil is fed from tank to burner by air pressure, automatically maintained by a small pump mounted on the engine crank-shaft. The engine is of the single-acting trunk type, and has inlet and exhaust valves of the mushroom

over 120 miles. The frame is of channel steel, the boiler at the rear being placed lower than usual. The engine is a four-cylinder one. Automatic pumps have been discarded, the water pump being actuated by an eccentric and rod from the rear axle. One lever controls a combined water and fuel distributor. The weight of the 9-h.p. *chassis* is between 12 and 13 cwt.

Messrs. O'NEILL AND Co., one of the recent additions to the list of traders in London, had a display of "Argus" cars, ranging from 6 to 15-h.p. In general it may be said that they follow the now generally adopted lines, one of the features being their relatively low price. The smaller cars are

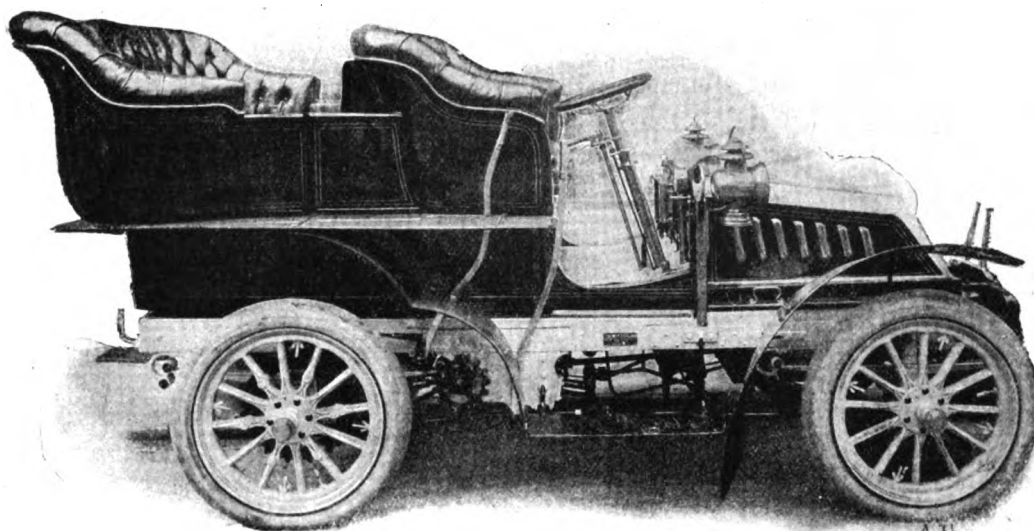


Fig. 60.—The Miesse 10-h.p. Steam Car.

pattern, a construction which obviates the necessity of any glands or packing. The valves are operated by two cam rods, actuated by the steam lever on the steering post. Among the detail improvements in the 1904 model is a pilot light which keeps up the necessary temperature of the generator, enabling the car to be left standing for hours without attention, and yet be ready at a moment's notice to start. Steam is now cut off as desired by a throttle valve, operated by a pedal, which also applies the brake; while the water regulator has been improved to enable the driver to see at a glance how much water is passing to the generator. Sufficient water for a run of eighty miles can be carried; while the capacity of the fuel tank is equal to 100 miles running.

Considerable interest was shown in the exhibit of the WHITE STEAM CARS, which have gained a high reputation among motorists during the past year or so. The new 10-h.p. models are but little changed so far as relates to the engine, boiler, and transmission, which have already been dealt with in the *Journal*. We note, however, that the condenser is now protected from the engine heat by a wind shield, which at the same time increases the efficiency of the engine. Hand pumps have been fitted to the automatic oil-cups on the dash; the springs have been slightly changed, so that the suspension of the body is exceedingly comfortable. Increased dimensions are also to be noted in the cardan joints and in the live rear axle. Perhaps the greatest change is noticeable in the carriage work, the bodies being now of English production, and of larger dimensions than hitherto. Furthermore, in addition to the ordinary tonneau, limousine bodies are now being fitted, an excellent example of this type being one built to the order of Sir E. Reed, late chief constructor to the Admiralty. The industrial side is not being neglected by the White Company, as was testified by a delivery van built for Messrs. Liberty and Company, this being the second ordered by this firm. So far as regards the *chassis*, it is of the standard type; the van body, which has a neat appearance, has a capacity of 66 cubic feet, and is designed for loads up to about 10 cwt.

The Gardner-Serpollet steam cars were represented by a *chassis* of the new 9-h.p. "Simplex" type, shown by the SPEEDWELL MOTOR AND ENGINEERING COMPANY. This is a new type for the 1904 season, and has a water capacity sufficient for a run of

fitted with De Dion engines, and have cardan shaft transmission, three speeds forward and a reverse being available. The large car has a four-cylinder engine with mechanically-operated inlet valves and side chain transmission. Messrs. O'Neill also displayed the *chassis* of a 10-h.p. Corré car, reference to which was made in our report of the Paris Salon. This is a two-cylinder car, with tubular frame, very much on the lines of the Renault.

THE CENTURY ENGINEERING COMPANY had an extensive display of "Century" cars ranging from 10 to 22-h.p., they being all of the chain-driven variety. This company are now using the Mutel engine, which is a well-known and favourite type in France. The cars throughout are on up-to-date lines, and among the small features of interest is the provision of a small electric light on the speed change lever, to enable the driver to see that he has got the lever in the right notch in the sector at night. Reference may also be made to a strongly-built 10-h.p. delivery van, designed to carry loads of 15 cwt. at speeds up to 15 miles per hour. The well-known 5-h.p. Century tandem was shown in two forms—one for two passengers and the other having a parcels chest in place of the front seat, the carrying capacity being about 3 cwt. The Mutel engine, which is being sold separately to the trade, is made with two and four cylinders, in sizes ranging from 10 to 26-32-h.p. The inlet valves are interchangeable with the exhaust. At this stand was also to be seen the Xenia automatic carburettor, illustrated and described in a recent issue of the *Journal*.

Messrs. WALLIS AND STEEVENS, LIMITED, exhibited one of their miniature traction engines for hauling loads of from three to six tons. The firm claim to be the pioneers of this type of motor, and now have a large number in use in various parts of the country. They are fitted with enlarged smoke-box, spark-catcher, a patent arrangement for controlling the draught, and an auxiliary valve which enables the engine to be started instantly. The "Little Giant" steam motors were shown in two forms by Messrs. W. TASKER AND SONS, LIMITED, one being fitted with a single-acting motor, and the other with a compound engine. These are miniature traction engines, designed to haul loads of from five to six tons on trailing wagons.

A description of the new "Keenelet" steam car has unfortunately to be held over till next week.



Fig. 61.—The White Steam Tonneau, with Canopy.

ELECTRICAL EXHIBITS.

The KRIEGER ELECTRIC CARRIAGE SYNDICATE, LIMITED, displayed one of the Krieger four-seated landaulettes, propelled by two 4½-h.p. electric motors, driving through spur gearing on to the front road wheels. The battery consists of 45 cells of the Fulmen type of accumulator, one charge of which is stated to be sufficient for a run of fifty miles over good roads. The controller is adapted to give eight speeds forward, one reverse, and two electrical brakes. The company has established a garage at 48A, Gillingham Street, Ecclestone Square, S.W.

A newcomer in the electrical vehicle field is the ANTI-VIBRATOR, LIMITED, which had on view a well-finished landaulette. No frame, in the usual sense of the term, is used, the body being supported on the axles in a special way; the axles are tied together by tubular radius rods in such a manner that each may adjust itself to any inequalities in the road. Two 3-h.p. motors are provided; they are of the enclosed type, with the armatures running on ball bearings; each motor drives one of the rear wheels through spur gearing. The necessary energy is furnished by a battery of forty-four cells, arranged in two groups—one under driver's seat and one behind the rear seats. The capacity is equal to a run of about forty miles over good roads on one charge. The speed controller measures only 15 in. by 4 in., and is fitted under the driver's seat. It provides three speeds forward, one reverse, and one neutral or off position. By a special contrivance it is rendered impossible for the driver to start off with a rush or to change the speeds abruptly from first to third, a frequent source of damage to the motor and gear wheels. Four brakes are provided—two on the driving wheel and two on the motor shafts. Each is double-acting and will hold the carriage from running backwards or forwards. Near the driver's left hand is a safety device, by which, on withdrawing a plug, all electrical connections are cut off, so that the car may be left without danger. Two roller bearings, which carry the weight, and two sets of ball bearings for taking up the thrusts are fitted to each wheel, thus allowing the carriage to run very smoothly and reducing friction to a minimum.

The ANGLO-AMERICAN MOTOR-CAR COMPANY, LIMITED, displayed examples of the Baker runabout and "Imperial" light electrical two-

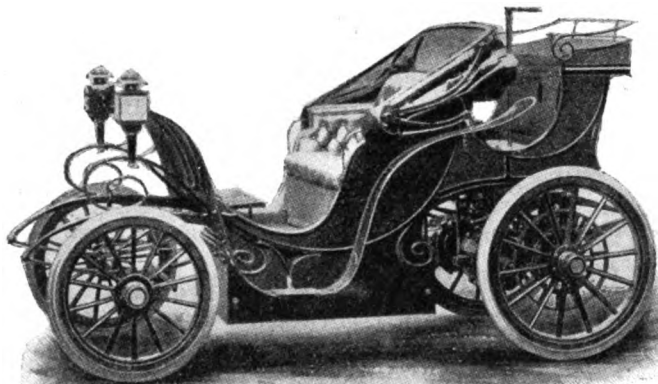


Fig. 62.—The Anglo-American Grand Victoria.

seated vehicles, well adapted for town use. A more pretentious car was what is known as a rear boot grand victoria, this having the driver's seat at the rear. The car is of American construction, and is fitted with two motors, driving the rear axle through spur gearing. The electrical energy is furnished by a battery of forty-four cells, one charge of which is sufficient for a run of forty miles. The controller is adapted to give three speeds forward and reverse and two electrical braking positions.

A new patent accumulator was on the stand of the ELECTRIC BATTERY COMPANY, who also showed the "Sparkwell" plug, which is claimed to be indestructible and soot proof. The mica is compressed by hydraulic power, so that the fear of getting a spark through the mica need not be entertained. A new dead heat voltmeter was also shown, by means of which the driver can take a direct reading of his accumulators, even when the motor is in motion.

GENERAL EXHIBITS.

Oils and greases formed an interesting display by the STERN-SONNEBORN OIL COMPANY, who have given much attention to the lubrication of motors. Their Motostern oil for the water-cooled cylinders and bearings of motor-cars has attained much celebrity, while for air-cooled cylinders Auto-stern oil is recommended as a pure hydro-carbon, non-corrosive, and free from impurities and acids. Greases, belting bricks, elastic paste for chains, cogs, wheels, pinions, etc., and Gearoline for axles and gear-cases, were among a variety of other specialities of the kind. The Stern-Sonneborn Company also showed some new types of lubricators. At the south end of the Palace, the ELEPHANT CHEMICAL COMPANY had a display of their lubricants, rubber solutions, celluloid cement, adhesive tape, etc. This company's specialities also include acetylene gas burners, and the concern is well equipped for the supply of similar goods to motorists. The AUTO-LUBRINE COMPANY limited their exhibit to Auto-Lubrine, which is so favourably known to motorists as to obviate detailed eulogy on this occasion. MR. CHARLES WHITE made a special display of the "Speedoline" motor lubricants, both for water and air-cooled motors.

The motometer was shown by MESSRS. ELLIOTT BROTHERS, who demonstrated the convenience of adjustment with which the instrument can be fixed in any position on the car. It is really a combined speed indicator and cyclometer, the former having a specially designed governor mechanism with the smallest possible number of parts. All the parts are made of a metal which will not rust. The construction provides for a steady but very sensitive pointer movement under the very worst conditions of vibration. The whole weight of the governor is carried on ball bearings. The position of the pointer indicates the speed of the car on a dial, which is marked off in miles per hour. At the same time every revolution of the mechanism is counted up on a cyclometer by means of suitable gearing.

MESSRS. LECOQ AND Co. had a good display of fittings and accessories, including plugs, accumulators, etc.

MESSRS. J. TYLOR AND SONS, LIMITED, made a display of their petrol engines for electric light plants, and also a float-feed carburettor of aluminium, the float being of copper. A valve of German silver is fitted accurately ground to fit the seating, which can be lifted for the purpose of testing its efficiency by means of a milled handle. After passing through a strainer the petrol enters the float chamber through the needle valve. By slightly throttling the air round the jet in the suction pipe a partial vacuum is caused above it, the petrol being carburised against a baffle cone dividing the suction stroke of the piston. A valve carburettor for petrol launches and a centrifugal water-circulating pump were also shown.

At the stand of the "SEE" MOTOR-CAR COMPANY was the "See" fluid for use in connection with tyre troubles. A new feature of the company's display was, however, the "See" pump, which can be fixed on the car within easy reach of the driver. By means of a long connecting tube the operator can inflate the tyre on any of the wheels without removing the pump. It is said that a 6 in. tyre can be inflated in less than a minute with this pump, which, being only 20 in. long, and made of aluminium, does not add much to the weight of the vehicle, or present any unsightly obtrusion to the view of the passer by.

A portable canopy, of which more should be seen should the weather improve, was exhibited by MESSRS. BURKIN AND Co. This can be fitted to any body, and be utilised to completely cover in the vehicle on all sides, or it may be utilised to protect the passengers from the wind entering on either side, or from the rear. The method of fixing is simple. Metal uprights are dropped into sockets at the four corners of the car, and held at the top by horizontal rods. Along the top a strongly made curtain is run and other curtains are placed to let down on rollers along the sides, forming a splendid protection. By using only the back curtain a capital dust shield is obtained.

THE ACME LATHE AND PRODUCTS COMPANY, LTD., showed their Acme four-spindle automatic screw machine and an Acme semi-automatic screw slotting machine. The feature of the firm's automatic machine is production, which they claim to exceed any single spindle machine on the market. The Acme machine carries four bars of stock, on which all tools are operating simultaneously.

A good style of motor-car watch and a large show of lubricators, grease and oil cups, tank fillers, nuts and unions, and other small parts for the trade, comprised the display made by MESSRS. ROTHERHAM AND SONS, whose long reputation gives confidence as to the way they are catering for automobiles.

Comprehensive so far as the accessories for automobiles are concerned was the display made by MESSRS. BRANSON, KENT AND Co., LTD., including lamps, silencers, horns, coils, jacks, etc., in fact, everything of the kind required in connection with the equipment of a motor-car. MESSRS. J. RICHARDS AND Co. had a collection of motor axles, handles, locks, and general iron work for motor-cars. A double-acting jack having a long run-out of just over a foot, with a height when closed of only 9½ in., was shown by MR. R. DALMER.

On the stand of the BEBBIE MANUFACTURING COMPANY, LIMITED, which we shall notice next week, was the "Pearson" motor-bicycle, fitted with a 4-h.p. Aster engine, located in a vertical position in a weldless steel tube of extra gauge. Three tubes are provided to take the thrust of the engine, which is given a position of great rigidity and security. The transmission is by means of a ½ V belt with deep V pulleys. A large silencer has been fitted which is free from back pressure on the engine. The outlet holes are in the end so as not to blow up the dust. The Longuemare carburettor which is fitted is of the type usually employed with a 6-h.p. engine, it being contended by the makers of the motor-bicycle, Messrs. Pearson Brothers, that such a carburettor enables them to attain a speed of twenty-five miles an hour up-hill. The tank has capacity for two gallons of petrol, three pints of lubricating oil and two Litanode or other accumulators. The ignition, air and throttle levers are of the inventor's special design, and the exhaust valve lifter lever is on the handle bar. Good brakes are provided and the mudguards are in two halves to permit of easy detachment.

"Jehu" motor-cycles were exhibited by the JEHU MOTOR COMPANY, LIMITED. In their motor-bicycle they make a special claim for their method of transmission. This is a chain-drive with a friction clutch interposed, a free engine being thus obtainable.

The "Grose" non-skidding and puncture-proof bands were the staple exhibit of MESSRS. GROSE, LIMITED. This band is made of chrome leather and is fitted with a steel-studded strip on the tread, which prevents sliding or skidding. It should be stated that the leather, being formed into the exact curve of the cover it is to be fixed upon, ensures a neat appearance being presented by the band when on the tyre. No interference with the

resilience of the tyre occurs through their use, and they have the advantage of considerably strengthening the whole.

In our reference to the exhibit of MESSRS. DENNIS BROTHERS last week we incidentally referred to the patent twin spoke wheel introduced by the ARTILLERY WHEEL WORKS, LIMITED. This wheel (Fig. 63) is designed to withstand severe strains caused by side-slips or turning corners at high speed. Owing to the fact that the alternate spokes are set at different angles, the wheel is so constructed that each spoke takes a counteracting strain to that of its neighbour, and so, in the case of side-slips, the strain is never thrown



Fig. 63.—The New Twin Spoke Wheel.

all in one direction at the same time. The wheel is made with the ordinary number of spokes, and is not heavier than the ordinary type of artillery wheel. It can be made to suit any hub, the only alteration being the difference in length of the flange bolts. It is well known that the wheels on racing cars are subjected to a terrible strain, especially in rounding corners; hence the value of this design, which has a smart appearance that should help its adoption by motor-car builders.

MESSRS. E. GREEN AND SON, LIMITED, show the petrol motor mower with which they gained distinction at the Manchester Exhibition of the Lancashire Agricultural Society. This is made in various sizes, the 20-inch having a 1½-h.p. engine, the 24-inch a 2½-h.p. and the 36-inch a 5-h.p. engine, a Fafnir motor being adopted in each case, as well as compensating gear. They also showed a 42-inch steam-propelled motor.

A grooved solid motor tyre, known as the De Nevers, was shown by MESSRS. J. LIVERSEDGE AND CO. The accompanying illustration gives a good view of the appearance of a wheel fitted with this tyre. It has, at certain intervals apart, transverse grooves, giving an impression of a tyre constructed in sections, but having an integral connection with the same base. The grooves allow each section, when under pressure, to distend, independently of the others, into the adjacent grooves, and when leaving



Fig. 64.—The De Nevers Solid Tyre.

the ground each section is able to recover its original shape. There is thus no fear that the weight on the rubber will cause the tyre to spread in such a way as to ultimately come out of the rims. The grooves produce the effect of a pneumatic tyre without its liability to punctures or bursts. These grooves also prevent side slips. The wearing surface of the rubber being grooved is neither under compression nor tension, consequently it retains its natural resiliency, and greatly adds to its durability.

Several good examples of high-class coach work were shown by MESSRS. THURPP AND MABERLEY, notably a landaulette body intended for a car being built for the latest accession to the House of Lords, the Hon. Humphrey

Sturt, M.P. A holdly outlined Roi des Belges body was also conspicuous on this stand.

At Mr. T. H. HOLDING's stand was his new car-poncho, a motor garment in mackintosh and real Paramatta. This is an adaptation of the parapluie idea, but by means of the collar, as shown in the illustration, the trouble usually associated with the taking on and off of that garment is reduced. The new garment is an effective protection in wet weather and an excellent addition to the range of motorists' raiment now available. Other special lines shown by Mr. Holding included the Ayrshire motor



Fig. 65.—Holding's Car-Poncho.

ulster, lined with leather or fur, the "Holding" patent apron in box cloth, the "Kangaroo" and other leather vests, and a good selection of drivers' liveries.

Mention must also be made of MESSRS. H. J. NICHOLL AND CO., whose frieze motor-coats lined with leather were a feature of considerable interest. Clothing for both lady and gentleman motorists was shown at their stand.

MESSRS. S. BOWLEY AND SON took occasion to show their lubricating oils for petrol motors, and, in showing their "Champion" oil, urged that increased temperatures do not lessen its viscosity, while it neither "gums" nor gives acid reactions. Special oils for gear boxes were also shown, as well as Bowley's motor spirit, which is becoming increasingly known to the trade. This is supplied in rectangular tins of two gallon capacity. Three grades are on the market, their specific gravities being .680, .700, and .718 respectively.

The exhibit of the TWENTIETH CENTURY MANUFACTURING COMPANY was entirely confined to lamps for motor-cars and motor-cycles, a special feature being a drip feed acetylene lamp of 800 candle power. Lamps of the type illustrated herewith are used as a side light on many large cars, and as a head light on the smaller types of vehicles. Another speciality was a combined hand and carriage lamp; while, to meet the demands of those authorities desiring a subdued light as compared with the brilliant

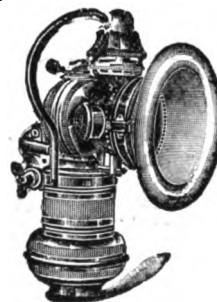


Fig. 66.—The Twentieth Century Lamp.

searchlight, which often dazzles others on the road, the company have produced an excellent lamp fitted with a screen, which deflects the light on to the roadway. The lamps are produced in gun-metal, nickel and brass and have good points of construction.

MESSRS. MARTIN AND FLEWITT showed some excellent specimens of coachbuilding, including a tonneau body with side entrance. An aluminium fore-carriage body on this stand also attracted considerable attention.

As usual, the display of PRICE'S PATENT CANDLE COMPANY, LIMITED, was comprised of their lubricating oils, etc., for automobile purposes. These are now so well known that the mere recital of their names will suffice on the present occasion, including as they do "Belmoline" solidified oil for gearing and axles; the "Battersea" gear oil for change-speed gear; and other specialities for the cylinders, valves, and bearings of all classes of automobiles.

(To be concluded.)

HERE AND THERE.

MESSRS. MORT have opened a garage in the Uxbridge Road, W., where they will also undertake repairs.

ON Friday last week about thirty of their agents were entertained to dinner at the Hotel Cecil, London, by Messrs. A. Darracq and Company.

MR. E. J. PENNINGTON, of automobile and airship fame has again been heard from as the head of the Cleveland Motor Company, Cleveland, O., U.S.A.

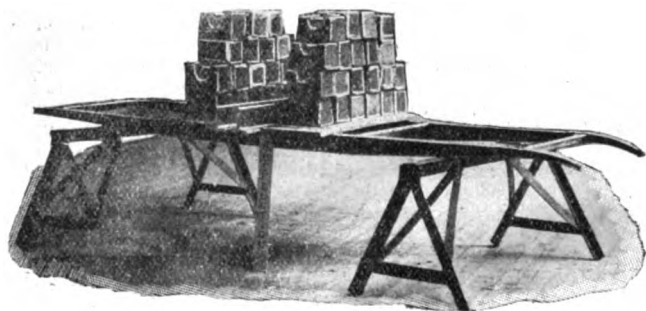
THE Anti-Vibrator, Limited, of Croydon, who are now building electric motor vehicles, have established a garage and charging station at 19A, Carlyle Square, Chelsea, S.W.

AN outcry is being raised in Calcutta against the speed at which motor-cars are alleged to travel. This can be taken as a certain sign that automobilism is making headway in our Indian dependency.

THE Motorists' Tyre Union, Limited, has been registered with a capital of £1,000, the object being to adopt an agreement to establish and conduct a club, to manufacture, repair, and deal in tyres, motor-cars, cycles and vehicles, etc.

At the annual general meeting of Friwell, Limited, held last week, it was resolved to pay a dividend of 10 per cent. on the ordinary shares, and 6 per cent. on the preference shares, to write £3,550 off the goodwill account, and to carry to reserve the sum of £13,462 16s. 4d.

At the recent show Messrs. Rubery and Company's display of pressed frames proved an attractive one. The accompanying



Testing a Rubery Pressed Steel Frame.

photograph shows one of these frames under test, an exaggerated condition of things that would not occur in the ordinary way. The frame in question is 11 ft. 7½ in. over all and is only held up at two points. On the centre of the frame is a weight of nearly thirty cwt. and yet the deflection is only one-eighth of an inch. It may be added that the frame shown in the illustration is a standard one for a 20-h.p. car and was actually on view at the exhibition.

MR. R. WOODHEAD, of King Cross, Halifax, has opened the motor works and garage formerly occupied by the Anglo-American Motor Company, Limited, Bull Close Lane, Halifax. The basement has been fitted up with inspection pits and electric light, and on this floor there will be garage accommodation for fifty cars.

MESSRS. DENTS, of Tamworth, have completed successful trials with change speed cones for single belt driven cars. Their invention, which they style the "B.R.C." (belt race cone) system, consists of tapered surfaces between ordinary pulley surfaces, and the belt is shifted into any of the speeds by means of a combined shifter and jockey. It does away with all chains and chain-wheels, gear-box, or fast and loose pulleys, clutch, engine flywheel, and cardan shaft, by merely using two belt race cone pulleys (one forming the engine flywheel, the other driving direct into back live axle with reducing pinion), and one belt. The whole is encased. Slipping is overcome by ample length and width of belt; and by the automatic tension of the ball-bearing jockey, which can be regulated at will.

MR. S. F. EDGE, who has been seriously indisposed recently, left England for Madeira on Saturday last. He has our best wishes for a speedy recovery.

THE active membership of the Automobile Club of America has reached the limit of 400 provided for in the rules, and a waiting list of applicants for active membership has been established.

THE Relyante Motor Works, Limited, has been registered with a capital of £100 to carry on the business of motor engineers, contractor, etc. The registered office is at Black-horse Lane Works, Walthamstow.

WE are informed, on the authority of the Town Clerk of the borough of Mossley, that the application of the Town Council of that borough to the Local Government Board for a regulation providing that the speed of motor-cars within the borough shall not exceed ten miles an hour has been withdrawn.

THE Anglican Motor Company, Limited, of Beccles, are establishing a large depot and garage in the west-end of London, they having acquired the Cadogan Rooms, Basil Street, Sloane Street, W. The new premises will be opened as soon as the necessary alterations are completed.

FEW of those who made trial spins in the Gobron-Brillie car at Sydenham last week had any idea that the young smiling driver was none other than Duray, the French professional *chauffeur* who will drive one of the 100-h.p. Gobron cars in the forthcoming eliminating trials for the French Gordon Bennett team.

MESSRS. JAMES WALMSLEY AND COMPANY, LIMITED, has been registered with a capital of £20,000 to adopt an agreement with Mr. J. Walmsley for the acquisition of the business of a coach and motor-car builder and dealer carried on by him at Guildford Street, Preston. The first directors are Messrs. J. Walmsley, J. L. Cross, and H. P. Cross.

A BILL has been introduced into the Massachusetts House of Representatives which prohibits the operating of any automobile which has a seat in front of the driver. The penalty for violation is a fine of £40 or imprisonment for ten days, or both. If the bill becomes law it will seriously affect the sale of a number of well-known motor-cars which are designed with folding seat to carry extra passengers in front.

MR. F. C. BLAKE, of Kew Gardens, S.W., has just issued a new catalogue of the Blake petrol motors suitable for motor-car and launch propulsion; they are made in one, two, and four-cylinder form, ranging from 3-h.p. up to 40-h.p. Mr. Blake has lately brought out an improved high-speed trembler coil, for ignition purposes. The trembler is of novel and ingenious construction, having only one moving part; it is extremely sensitive to high speed vibration, at the same time it is simple in construction and easy to adjust.

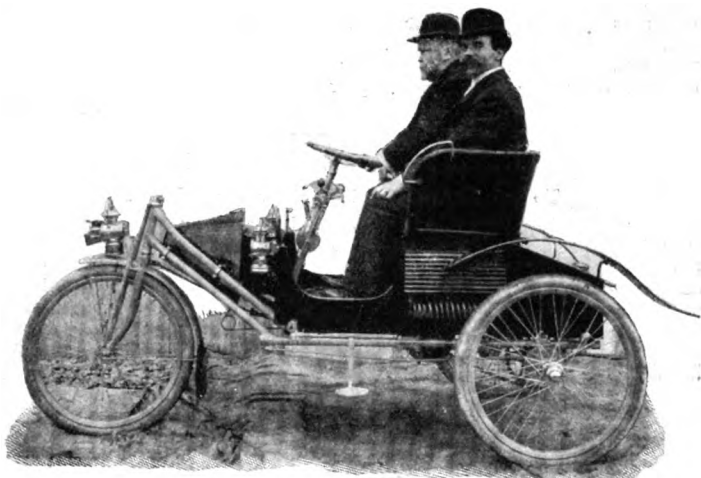
MESSRS. MERRYWEATHER AND SONS are constructing to the order of the Romford Rural District Council a motor-driven apparatus for the emptying of cesspools. It will be propelled by a two-cylinder steam-engine, and will travel at the rate of six to eight miles an hour. A special device for rope haulage will be fitted for use in the event of the vehicle getting into soft ground from which it cannot propel itself. It is to be furnished with a galvanized tank, capable of holding 700 gallons of sewage, filled by a steam suction pump.

A COMPANY is being formed in Adelaide, Australia, with a capital of £100,000, to run a public service of motor-cars between South and North Adelaide. It is proposed to put six cars on the service, each making two trips per hour; length of working day, fourteen hours. In connection with the proposed service, the expenditure, exclusive of cost of cars, is estimated at £6,132; cost of six cars is put down at £1,200 each—£7,200, and two emergency cars are allowed for at same price—£2,400, making a total outlay of £9,600. It is calculated that there should be a clear profit of 14 per cent. on the operations of the proposed company.

A SECTION of the Swiss Automobile Club has just been established at Geneva.

THE Antwerp Automobile Club has decided to organise a tour to Homburg on the occasion of the Gordon Bennett race.

MR. M. F. MIEVILLE, of Chichester, has registered his Baby Peugeot as B. P. 175, an interesting coincidence as to the initials and price of that particular car.



The "Avon" 4-h.p. Two-seated Car. (See page 957 last issue).

THE Hampton District Council has wisely recognised that there is no need to restrict the speed of automobiles passing through its area to less than the legal limit. A similarly sensible decision has been reached at King's Lynn.

AMONG the several absentees of heavy steam vehicle builders at the show just closed was the Lancashire Steam Motor Company, Limited; a big display will, however, be made by this concern at the Exhibition at the Agricultural Hall next month.

FROM the Locomobile Company comes a neat booklet giving the rates of their garage, the system of charge both for storing cars and for repairs, and other information useful for those on the look-out for good facilities for the storage of their motor vehicles.

"How to Choose a Motor-Car" is the title of a neat pamphlet issued by Messrs. J. R. Richardson and Company, Limited, of Saxilby, near Lincoln. Without too much reference to their own particular cars, they have managed to give in a small compass some useful hints which intending motorists will do well to consider.

THERE seems to be some doubt about the personnel of the American team for the Gordon Bennett race. Three cars have been entered for the event, but one or two of these may not be finished in time. The secretary of the A.C.A. has written to each entrant asking that a report be made to the Race Committee of the Club of the progress that has been made.

THE final act in the proceedings for freeing the bridge at Maidenhead has just been performed, when the toll-house on the south side was removed. That on the north side was pulled down a short time ago, and the toll-gate itself was removed at midnight on October 31st last, when the bridge-tolls were abolished. The Maidenhead Corporation are now obtaining a special Act of Parliament to enable them to pay off the bridge bondholders.

FROM Messrs. Docker Bros., Limited, comes a catalogue of their varnishes, paints, and colours, specially prepared for the decoration of motor vehicles. Their system of preparation of the paints is such as to give a good degree of fineness, and at the same time not detract at all from the high finish. The paints are also prepared with a view to resist the effects of heat. The catalogue should do much to put the firm in favour with coachbuilders and the like, the illustrations being the best we have yet seen in this class of work.

BECAUSE of the lack of financial support the scheme to run motor-cars between Bewdley and Kidderminster has fallen through.

THE Lynn Town Council have passed the plans of the new motor works Messrs. W. H. Johnson and Sons are erecting in Tower Place, King's Lynn.

MESSRS. R. REYNOLD JACKSON AND COMPANY are now in their commodious new premises at 11 and 13, High Street, Notting Hill Gate, London, W.

AMONG the well-known garages on the Great North Road is that of Mr. J. Smith, of Grantbarn, who has every facility for the recharging of accumulators, etc.

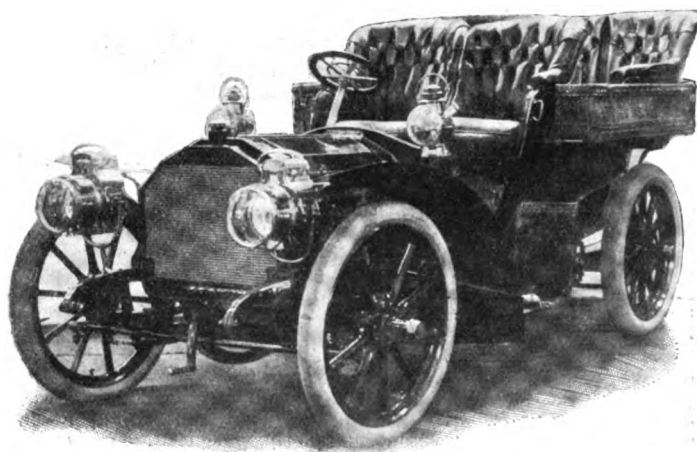
FORTUNATELY for lawyers, observed counsel at the City of London Court the other day, motor-cars seem likely to produce the same class of dispute as their old friend the horse has done for many years.

MESSRS. J. TYLOR AND SONS, LIMITED, who have attained distinction in connection with sanitary fittings, etc., are giving attention to petrol engines, and hope shortly to put on the market a new motor for cars.

MR. A. WALROND, director of the Union Bank of London, has purchased a 24-h.p. "Fiat" car from the British Automobile Commercial Syndicate, Limited. The car is to be fitted with a Rothschild three-quarter landaulette body.

It is reported that the roads in the Luneberg district, where it was proposed to hold the German eliminating trials for the Gordon Bennett team, are too narrow for the purpose. Another course between Kiel and Hamburg is now being surveyed.

AT the next general meeting of the Automobile Club on March 10 the Earl of Shrewsbury and Talbot will propose the following resolutions:—(1) That no member of the Automobile Club in the trade or journalist connected with an automobile journal be eligible for membership of the committee of the Automobile Club of Great Britain and Ireland, and that the meaning of 'member of the trade' be settled by the committee of the club. (2) That the committee of the Automobile Club of Great Britain and Ireland shall have power to appoint sub-committees who shall deal with the matters in which the trade may be interested, such as racing trials, administration, finance, and Parliamentary questions.



The "Crossley" Car.

THE driver of the motor mail van from Warwick, Leamington, and Kenilworth to Coventry and Birmingham reported on his arrival at Coventry one night last week that a serious accident occurred at Kenilworth. He was endeavouring to avoid a vehicle at the top of Rosemary Hill, when the van came into contact with the kerbing, with the result that the vehicle was considerably damaged. The mails were taken on to Coventry by means of a horse and trap. They reached Coventry at 10.20, only twenty minutes late.

CORRESPONDENCE.

EXPERIENCES WITH THE PARAFFIN CARBURETTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to my experience with the Trusty carburettor which I gave about a month ago, in reply to "Cycle Mechanic," with regard to the consumption of the two oils, I have tested this many times, and find practically the consumption of petrol or paraffin to be about the same; that is, with my 7-b.h.p. engine, doing thirty amperes at 115 volts, the consumption is, for one hour and fifteen minutes, one gallon of either petrol or paraffin, so that every hour I run I save about 7d. by using the Trusty carburettor. I stated in my last that only under certain conditions would my engine pick up on paraffin. I thought this to be the fault of the carburettor being too large, so I wrote the maker, and he was kind enough to send me a smaller one to try; this I fixed and found to act and work well on paraffin after running about fifteen minutes on petrol—that is, until the engine is thoroughly warm. I say until the engine is warm. The makers say until the carburettor is warm. I think this rather misleading, as I have run mine for an hour on petrol or benzoline, and then could not get the carburettor warm; as one knows, petrol is very cold stuff and tends to keep the carburettor cold, so I say when the engine is warm one can turn on the paraffin.

I find the best method is to run about ten minutes on petrol, and then open the mixture lever a little and turn tap on to paraffin and back

favour. A steam car burning paraffin as fuel would cost more for running than a petrol car of corresponding power, the consumption being considerably greater. The working parts are also more likely to get out of order, and the generator is continually out of order, which generally incurs great expense. With regard to obtaining petrol, this can be purchased now in almost any town or village of any importance, and one has seldom any need to worry on that score, as tanks are made sufficiently large to carry enough for long journeys. The ignition on petrol cars is undoubtedly the greatest source of trouble, but if this be carefully attended to one has seldom serious trouble. With reference to steam cars there is also the necessity for carrying a large supply of water as well as the oil for fuel, otherwise numerous stoppages for replenishing same are necessary. Taking all points into consideration, "Searchlight" will, I think, find that the petrol car is far in advance of the steam car both as to reliability or upkeep.—Yours truly,

J. H. J.

CARS FOR MEDICAL MEN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having been a motorist for between three and four years, I would like permission to record my opinion in favour of solid tyres. Given a well-sprung and strongly-built car—as all cars ought to be—combined with a reasonable rate of travelling, solid tyres will give satisfaction and practically absolute freedom from worry. At least, such is my experience. The diameter of the tyres on the driving wheels should not be less than 2½ inches. The professional man who has decided to purchase a motor-car, and who desires to have reliability,



The Chances of Promotion. (See page 1007.)

on to petrol several times, when the engine will pick up the paraffin without any trouble; then I put the mixture lever almost back to petrol mark. Now, with regard to the small carburettor the maker sent me, this works well, but I found a loss in power; I could not under any conditions get the engine to do more than fifteen amperes at 110 volts, so I took off the carburettor again. I may say here that the maker promised to send me on a new and smaller spraying tube for the larger carburettor which he assured me would do equally as well as the small one, but, owing to pressure of work, the delivery of same was delayed. However, I have now got the large one at work again with the spray altered, and am more than satisfied with the results, as with it I save 7d. per hour in oil for each hour I run the engine, and do thirty per cent. more work with this carburettor on. With regard to the carburettor for motor-cars, I am afraid, until something is done to regulate the air automatically, so as to keep the mixture regular, it will be rather troublesome, but for stationary engines I can vouch for it being in every way a success.—Yours truly,

TALBOT C. CLIFTON.

STEAM V. PETROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to "Searchlight's" enquiries in your last issue, I think he will find greater economy in the upkeep of a petrol car, and greater satisfaction combined with reliability. The up-to-date petrol car is free from all vibration and perfectly silent, points greatly in its

simplicity, and economy, is, I think, most likely to attain his wishes by going in for a single cylinder (no water joints) slow-running engine, about 8-b.h.p., and belt driven (two belts only). By using belts one does away with troublesome clutches and expensive gear boxes. If a belt should break it is a very simple matter to mend it. Personally I prefer accumulator ignition, as also a tonneau shaped body. One soon tires of a car which can only seat two people. Why the leading makers do not build cars of about 8-b.h.p., single cylinder and belt driven, is a considerable puzzle to—Yours truly,

MOTORING MEDICO.

REPAIR OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The correspondents who have written re my letter on p. 932 labour under a mistake entirely. I do not complain at all about the charge of 1s. per hour for time; this in itself is reasonable enough. What I do grumble about is the quality of work done in the time, the length of time taken, the having to do the work over repeatedly, and the charging for boys as for journeymen. A few instances of these I may give haphazard from the account lying before me, viz.:—To taking off clutch and new leather fitted, fitting same five hours, leather, 7s. 6d.; this was on the 13th of the month. On the 16th, taking off clutch, 8s. 3d. Another item:—To petrol tank soldering and brake, self and man, twelve hours, 12s.

Another. To turning and fitting plate in pump, self and man, seven hours. I could go on *ad infinitum*. I think, when the repairs had to be

done at least three times for each repair before they were done right, that there is considerable room for complaint. Then, after spending weeks in trying to find out the cause of overheating, and having taken the cylinder down repeatedly, also overhauling the pump time after time, I have to pay for an expert at the rate of £1 10s. per day to get my so-called repairer out of his difficulties. This is enough to diminish the ardour of future motorists, unless they have sufficient time to do their own repairs. It is dreadful to think that one is at the mercy of such people, the majority of whom have never been trained as mechanics.

"Francois" states that there was something wrong with the car—that I had met with several accidents. I can only say that the car is an 8-h.p. Progress, costing over £270, and that in the time (eighteen months) that I have had it it has not cost over £2 12s. in the way of a slight accident; he will see that there is no need for such a large account for the last few months. My mistake was in giving the repairers (?) *carte blanche* to do what was required, and I find that I am charged for repairing or renewing most of the parts.

I may say also that in the account referred to, in addition to the items mentioned, there is an item of £16 for work with the cylinder. The use of engine and lathe for about two months amounted to £6 10s.

New bushes (material alone) £2. I find a good many motorists are, like myself, wishing we had known more about the motor repairers before we got our cars, and then we would have done without altogether, or have bought one from some firm not too far away, as we find these repairers, knowing absolutely nothing about the various cars, gain a little experience of each kind, and are still floundering in the dark when attempting to do any repairs.

When I requested my repairer to return all the old parts which he had renewed, all I could get, under pressure, was four caps, four cones, four bushes and four cog wheels from rear axle. This will give any thorough motor repairer a true idea of my complaints.—Yours truly,
CHIRURGEON.

THE BRITISH AUTOMOBILE INDUSTRY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We are surprised to note in your issue of February 10th a reprint of a paper on British Automobile Industry, 1904, read by Mr. T. C. Aveling at the Automobile Club just recently, in which estimates are made of the production of various makes of cars. We would point out that Mr. Aveling requested us to provide him with certain information which we did not consider it necessary to furnish him with; and as he has made an estimate of the production which is ridiculously wrong in our case, we can only presume that it is equally so in several of the other firms mentioned.

In presenting a paper of this description before an important assembly like the Automobile Club, it is a great pity that the data given should not be more reliable, as it is very detrimental to the movement in this country, and will no doubt be read by many of our foreign competitors, and reproduced in their journals. We shall be glad if you will therefore prominently mention in your next issue that the figures mentioned, so far as they relate to the Wolseley Company's business, are totally wrong.—Yours faithfully,

THE WOLSELEY TOOL AND MOTOR CAR CO., LTD.

BENZ V. LIGHT CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I find this correspondence very interesting and instructive. I can sympathise with owners of underpowered cars, although mine is not a Benz. If I had a Benz and wished to increase its power, I should either fit a longer stroke crank and so increase the cylinder capacity, or else increase the speed of the engine, and gear the car down to suit it. By doubling the engine speed the power is practically doubled. Larger inlet and exhaust valves might, however, have to be fitted in order to get increased engine speed, and perhaps a new carburettor might be required, or the present one would supply plenty of gas, except when the throttle was fully open and the engine running fast. Throttle control would be advisable, and would tend to lessen engine vibration.—Yours truly,

O. O. C.

WHAT IT COSTS TO KEEP A CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reference to the correspondence re cost of running a car, I give the following as my experience of a 12-h.p. chain-driven double-cylinder car with pneumatic tyres. I drive the car myself and do all the minor repairs. The car has been run 3,000 miles.

Petrol, £7 6s. 8d.; lubrication, oils, grease, etc., £1 9s.; tyre bands for back wheels, £6 9s. 6d.; two inner tubes, patches, plugs, lost nuts, brake leathers, and adjustments, £5 7s. 9d.; one set batteries (reserve), 14s. 6d.; accumulator charging, 8s.; paraffin, acetylene, etc., for lamps, 10s. 9d.; two inlet, one exhaust spring (only), 1s. 2d.; cost of coal, etc., for heating motor house (slow combustion stove), about 7s. 9d. Total, £22 15s. 1d. The car cost me £415. I have had about twelve punctures, but I would not have solids fitted at any price.—Yours truly,

B. E. BOLTON

LOSS OF POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been troubled with my baby Peugeot in exactly the same way that M.R.C.S. has. My car was an extraordinary good hill-climber, but suddenly it began to lose power—in fact, it failed at the slightest incline. I could get only a very small amount of compression. I ground the valves, then tried it, still no better; during the time it suffered from loss of compression I ground the valves about five times, still no improvement. I then put in two new piston rings without making the slightest difference. At last I took out the valve again, and, after examining it closely, I found the bevel of the valve seat was slightly deeper than it was on the valve. When I discovered this I stopped the trouble in a very short time. With a very fine file I filed the seating down until I could just see the edge of the bevel of the valve after placing it in its seating, and then ground it in again. It completely cured it, and has stayed cured. The engine has as good a compression now as ever it had. If M.R.C.S. will closely examine his valves, I confidently anticipate he will locate the cause of all his trouble.—Yours truly,

DONE ENOUGH GRINDING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to M.R.C.S., re loss of power of Oldsmobile, he might overhaul his silencer; the small pipes sometimes get sooted up and the symptoms he describes then take place. Personally, I like a little more noise and less back pressure. I suppose the cylinder lubricating pipe is not choked.—Yours truly,

E. D. P.

MOTOR-CARS FOR COMMERCIAL TRAVELLERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be glad if you, or a reader, could give me any information respecting the utility of a car for a commercial traveller. My journeys being principally in the eastern and southern counties, so much time is lost by the poor service of trains on the numerous branch lines, that it has occurred to me that a car would be invaluable. Although I have heard of several C. Ts. using motors, I have not yet come in contact with one, and should be glad if any commercial traveller or reader of the *Journal* could give me the value of his experience, with the cost of running, etc. As I should have to buy the car myself, could I get a second-hand one heavy enough for the work for, say, £60 to £70, and what make would be advisable.—Yours truly,

A DRUMMER.

TYRE EXPERIENCES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I thought perhaps my experience with pneumatic tyres might interest your readers. My car is a 6½-h.p. Gladiator bought in 1902, and fitted with Dunlop tyres. At first I had a great deal of trouble with the inner tubes nipping until I did the following:—Take the tyres off and file the rims perfectly smooth, finishing them off with emery cloth. Next wipe the rims quite clean and give them two or three coats of enamel. When the enamel is dry put the covers on, having first carefully cleaned them from all grit, and put canvas patches over any cuts that may have come through. Then put in the inner tubes, being very careful with the studs, and do not spare the French chalk—in my opinion one cannot use too much.

Since doing this the tyres have behaved well, but I am strongly in favour of solids for cars not exceeding 20 m.p.h., as there is always the chance of picking up a nail, and if one has very thick treads or bands fitted they must affect the resiliency of the tyre. I once drove the car from Droitwich to Barnet, 105 miles, in seven hours, average 15 miles per hour, and without the slightest hitch, although it rained the whole time.—Yours truly,

G. E. R.

HOTEL CHARGES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I can hardly credit that your correspondent "One Who Pays a Fair Price" is a *bona fide* motorist, as there is a strong tinge of personal interest in his letter. I still maintain that the majority of motorists cannot and will not pay 9s. 6d. for a trifling lunch for two persons. Personally I would not object to pay a sovereign for a good meal if everything was equal and consistent with the charge. When one lives in London and is accustomed to the luxurious hotels and restaurants where one can dine in palatial saloons at fifty per cent. less than at a leading (I will not say first-class, as the words have lost their significance) rural hotel, I think I am justified in pointing out, for the benefit of your readers, what they may expect if they are foolish enough to follow my footsteps. There is no necessity for us to put up at a temperance hotel or coffee tavern if we are prepared to pay a fair price, but even these institutions could give many so-called first-class hotels a long start in cleanliness and comfort combined with moderate charges.—Yours truly

OWEN JOSEPH.

TIMING GEAR TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should like to know if any of your readers have ever had such a singular event happen as I have had just recently; it occurred on an 8-h.p. Daimler car. The large wheel of the two to one gear jumped seventeen teeth out of time, without even marking the teeth of either wheel. It was caused by one of the suction valves on the water pump (a semi-rotary) becoming fixed in an upright position and thereby preventing the eccentric on the cam shaft from completing its proper circle and so springing the large wheel out of mesh. The cam shaft is not bent and the bearings are fitted perfectly, the car having been only just overhauled; the engine is running excellently now.—Yours truly,
H. BROWN.

DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice that "Owner" agrees with Mr. Edge that if good men were easy to get, one would not find the car as driven and cared for by the driver run at less per mile than the *chauffeur* driven one. He also notices that the owner-driven and cared-for car is always ready to run. So much for luck. But I, as a driver and one who has served my time to the trade, can tell "Owner" if he had my car, he might not be so fortunate in getting off so soon. All cars are not alike. I can tell "Owner" I have spent hundred of hours in keeping it in good working order, but

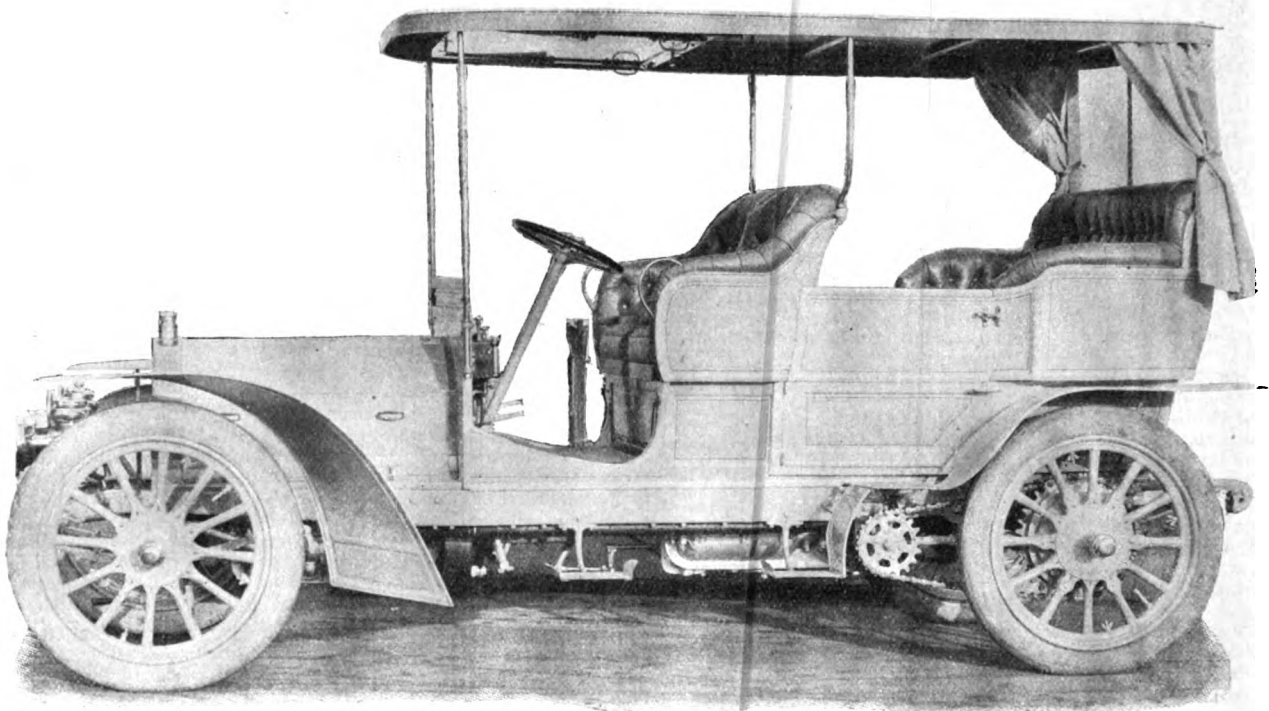
premium. Mechanics, as a rule, do not take kindly to such men, consequently they obtain only a smattering of the business, and in a few weeks' time they are entrusted with an expensive car and a set of tools, and they soon develop from anything into a mechanic-driver.—Yours truly,
M. D. L.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The demand seems mainly to be for a man to drive and keep in repair a motor-car, and do some domestic duties in addition, such as lamps and boots, valeting or stable help, at wages ranging from 20s. to 30s. per week. The supply who will work under these conditions are mostly men of no particular calling, who have been through a course of instruction as per the many advertisements in all the motor papers. What can be expected from such? If an owner wants a really competent man, he must pay a proper wage, and get him out of the workshop. The best man for the job is the man who has been apprenticed, spent money and much hard work and study in learning as much as he possibly can. That man is in the workshop and will very naturally stay there, at least until the present order of things alters.—Yours truly,
ARGYLL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Being one of your first correspondents on the question of drivers, may I say we are indeed having some very varied opinions. For F. Ralph Harding's information, I beg to state I am (or was) one of



The Benz-Parsifal 35-h.p. Side-Entrance Double Phaeton.

as soon as one thing is right another goes wrong. I have never heard my master grumble over my not trying to do my best, nor yet say he could run the car cheaper than myself. As regards receiving commission on purchases paid for by driver, I have paid bills and not asked for such a thing and never expected it. Some owners are a bit "near," and I would forgive any mechanic-driver who gets anything out of them. I hope "Owner" will go on driving his own car, as he can run so much less per mile, and I hope he will always have it ready to start at a moment's notice.—Yours truly,

DRIVER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with interest the correspondence re drivers, and should like to give you my opinion. As a young man I gained a few years' experience in an engineer's workshop and office, and at night attended commercial classes. Arriving in London from the Colonies, I found that the motor-car trade was booming. I entered a petrol motor workshop and remained there two years, gaining a knowledge of petrol motors with practice in motor driving added. Unfortunately I was thrown out of work during the winter and all my efforts to get employment have been in vain, and the only remedy is to seek other employment. Herein lies the difficulty of obtaining practical men that Mr. Edge complains of. Novices enter a workshop or garage, paying a small

the man employed by the gentleman mentioned in my first letter. I am a qualified mechanic, who served and finished my time ten years ago. I have also had a motor experience dating back to 1897, when some of the first cars came to Scotland. I have here letters of proof where some of my former employers have requested me to come back to their service. Other men who have been with the gentleman above referred to hold some of the best positions as motor-men mechanics here in Scotland. I might also mention that this same master has also had a mechanic who has run in the Gordon Bennett races. Also, for another correspondent's information, I might say I am unable to overhaul a car with a sponge, chamois, spoke-brush, a few spanners, a pair of pliers, a couple of files, and a sparking plug or two. If my master has not got a workshop with the necessary plant, I am indeed unable to overhaul a car. There are lots of drivers going about who when they are about to take up a situation say they can take a car to pieces and reassemble them in two days; but their masters live to find it different.—Yours truly,

SUB JUDICE.

GRADIENT OF ANERLEY HILL.—"Gradient" asks for the exact gradients of Anerley Hill, which is paved on one side to assist heavy traffic.

THE MONARQUE MOTOR.—In answer to Mr. W. Lorkin, Messrs. Bailey and Lambert, Limited, 217, Piccadilly, W., inform us that they can supply all particulars of these engines,

AERONAUTICS AND BALLOONING.*

By MR. C. F. POLLOCK.

No doubt you are all aware that the fathers of aeronautics were the brothers Montgolfier, who first ascended in a fire balloon in France in 1783, and when one considers the nervousness with which some people view modern ballooning, with all its appliances, one must regard with admiration the courage of these pioneers in the science.

In the case of what is called a fire balloon, the ascending power is hot air—that is to say, you carry in the car with you a furnace, by means of which the air inside the bag of the balloon is kept warm, and, consequently, lighter than the surrounding atmosphere, and I need hardly point out that the danger of having such a furnace in the air must necessarily be very great. In 1783 also Messieurs Roberts and Charles, two French aeronauts, made an ascent in a hydrogen balloon. Hydrogen gas, I may here mention, is about ten times lighter than air, and 1,000 cubic feet of it will lift, approximately, seventy pounds weight. In the case of coal gas 1,000 cubic feet will lift about forty pounds weight.

The first ascent in England was made at Moorfields, near London, in September, 1784, by Vincent Lunardi, who may consequently be regarded as the father of ballooning in this country. In January, 1785, Messrs. Blanchard and Jeffries made the first voyage across the English Channel from Dover to Calais, and I have read thrilling descriptions of how, in order to reach the other side, they had to throw almost all their clothes into the sea, and I believe even consider if one should jump over the side in order to save the other.

Passing on over a number of years, we come to November, 1836, when the longest balloon voyage ever made from England was accomplished by Messrs. Green, Holland, and Monck-Mason, in the great Nassau balloon. These gentlemen ascended from Vauxhall Gardens one November evening, and after traversing the Channel during the night, descended the following afternoon at Weilburg, in Nassau, after being eighteen hours in the air.

We next come to the scientific ascents of the late Mr. James Glaisher and Mr. Coxwell in 1862, under the auspices of the British Association. I do not propose to trouble you with any particulars of these ascents, which are well known, but, personally, I think it doubtful if the estimate that a height of seven miles was attained was quite accurate.

In 1863 Nadar's great balloon, which was capable of holding 215,000 cubic feet of gas, the largest ever constructed, was used, but I believe it was not a great success, and it must certainly have been most unmanageable.

We next come to the first use of balloons for military purposes in connection with the escapes from Paris in 1870, and, as you are no doubt aware, General Gambetta adopted this mode of leaving the besieged town.

During the eighties there was quite a run on cross-Channel ballooning. Colonel Burnaby crossed in 1882, and, again, Mr. Simmonds later in the year from Maldon to Arras, 140 miles in two hours, which must have meant a gale.

Again in 1883 Mr. Simmonds and Sir Claude de Crespigny went from Maldon to Oudekerk, near Flushing, the only time the North Sea has ever been crossed.

In December, 1887, Monsieur L'Hoste and a friend attempted to cross from Amiens to England, but were drowned in the attempt; and this seems to have put rather a stop to cross-Channel ballooning, until I took it up again ten years later.

I now come to modern times, and to my own experiences in ballooning, an account of some of which may prove interesting.

It was a fine day in July, 1896, that I and a friend arrived at Olympia, and found Mr. Percival Spencer, with a balloon of some 21,000 cubic feet capacity, waiting to start. Apparently, Mr. Spencer had over-estimated the lifting power of the gas, for the balloon declined to leave the ground until practically the whole of the ballast had been discarded. At last, however, it rose from the ground, but immediately afterwards we found ourselves crashing through the bandstand, which was rather a nerve-trying operation for beginners.

Worse, however, was to follow, for the balloon still declined to lift clear of the houses, and in the course of a few seconds we were knocking against the chimney pots of a row of small houses outside Olympia.

Fortunately, however, Mr. Percival Spencer rose to the occasion, and while my friend and myself were holding tightly to the ropes to prevent ourselves being thrown out, he was untying the anchor, weighing about 70 lb., which he dropped into the street just in front of a hansom cab. The dismay on the face of the driver amused me, even in the unpleasant position in which I then was.

This action of Mr. Spencer's saved us from accident, for the next moment the balloon lifted clear of the houses, and rose well into the air. Our position even then was not altogether satisfactory, for there we were, over London, with only a light breeze, and no ballast to throw out, or other means of maintaining our position in the air. Fortunately, however, the wind drifted us towards Hampstead Heath, about the nearest open space to Olympia, and there we descended without mishap, after being in the air some twenty minutes or half-an-hour.

Although this first ascent was by no means a satisfactory one, I caught the aeronautical fever, and in the January following I again made an ascent with Mr. Spencer from the Welsh Harp, Hendon.

In July, 1897, I made my first ascent alone from the Welsh Harp, and in September, 1897, it occurred to me that a cross-Channel balloon voyage would be an interesting experience, and I consulted Mr. Percival Spencer on the subject. He took a great interest in the attempt, ultimately selecting Devonshire Park, Eastbourne, as the best starting point.

Arrangements were duly made in the way of laying on gas, etc., and on October 11th, the wind being then in the north-west, Mr. Spencer and I went down to Eastbourne with a view to my attempting the voyage on the following day.

The morning of October 12th opened with a moderate north-west wind, and there seemed little doubt of the success of the voyage.

The balloon was inflated by 10 o'clock, and at that hour the word to let go was given, and the next instant I was drifting over the park and out to sea. The balloon was of 35,000 cubic ft. capacity, and in addition to the trail rope—200 ft. long—carried fourteen bags of sand, weighing 7 cwt., and one or two other articles in the way of life belts, a sea anchor, etc.

I had a fair lift at the start in order to clear the houses round Devonshire Park, and steadily attained an altitude of 4,000 ft.

Towards eleven o'clock the balloon began to descend, and I threw out half a bag of ballast. The English coast disappeared at 12.10, though I fancy I saw Beachy Head an hour later. One is accustomed to think of the English Channel as crowded with shipping, but, as a matter of fact, at times on this voyage nothing was visible but sea and sky.

By 12.45 o'clock the balloon had reached 5,000 ft., and there were some wonderful cloud effects. I naturally kept a keen look-out for the French coast, and about 1.30 o'clock it loomed into view. Soon afterwards I noticed that the balloon was descending, and as I was anxious to ascertain my course, I determined to allow the trail rope, which was hanging below the car, to touch the water. At 2.30 the balloon had risen to 8,000 ft., and I was crossing the bar of the Somme River, near St. Valery, having thus occupied 4½ hours in the trip over the Channel. From 2.30 o'clock to 4.30 o'clock the balloon passed over France with the trail rope on the ground most of the time, and I ultimately descended near Domart, which is ninety-five miles from Eastbourne as the crow or balloon flies.

Returning now to the subject of aeronautics generally, I think that the next most important event in this history is the attempt by André to reach the North Pole by balloon. André left Danes Island, 800 miles from the Pole, on July 11th, 1897, with the wind slightly to the west of south, and since then the only news has been received by carrier pigeon, and in my opinion there is very little chance of anything further ever being heard of the bold traveller. Although André's expedition proved fatal, I am myself inclined to think that the idea of reaching the North Pole by balloon is a good one, and that with management and luck there is no reason why the attempt should not be successful. The drawback would be, however, that, assuming the North Pole was reached by balloon, it would be dangerous to descend, and, consequently, there would not be much opportunity of taking note of the conditions existing there. I believe André thought that his balloon would remain a number of days in the air, but in this I think he was mistaken, as the variations in temperature must, in my view, bring any balloon to the ground within a comparatively few days from the start, although the even temperature of the Polar regions would no doubt permit a balloon to remain longer in the air than in other parts of the world. I think that André made the mistake of having too elaborate apparatus, and that he might have done better if he had carried fewer trail ropes and not troubled about sails.

I will now deal briefly with the question of airships. As you are all aware, a number of airships have been tried of late years with varying success and various accidents. I think that on the whole M. Santos Dumont has done the most from a practical point of view, although I believe that the airship of M. Lebaudy has been nearly, if not quite, as successful. Of our countrymen, the airship of Mr. Stanley Spencer is the only one which has made any practical ascents; but I am told that the airship of Mr. Beadle, which I hope we may see at the Aero Club Exhibition at the Agricultural Hall next March, has many good points. All the airships which have so far made any practical ascents have been of the type known as "lighter than air"—that is to say, they have been suspended in the air by means of a hydrogen gas bag. This necessitates the driving through the air of a large and comparatively fragile fabric, and I do not myself consider that airships of this type can ever be safely manoeuvred except in calm weather. If, for instance, the wind is blowing at the rate of twenty miles an hour, which is a moderate breeze, it is necessary, in order to go against it at the rate of ten miles an hour over the ground, to drive the balloon through the air at the rate of thirty miles an hour, and the pressure on the gas bag would be considerable, and perhaps cause it, if of the ordinary cigar shape, to buckle up. I believe that Count de la Vaulx, the famous French aeronaut, considers that the spherical balloon with motor propellers would be more satisfactory than the usual cigar-shaped airship, but I do not agree with this view, as the resistance to the air would then be considerably greater than in the case of the cigar-shaped ships. The difficulty in the case of the "heavier than air" ships is to get them into the air at all, and, in fact, so far as I can make out, this has never been done, except, perhaps, in the case of Mr. Maxim's airship some years ago, when I understand that, with the assistance of a run, the airship did rise some three or four feet. I think, however, that as time goes on, and we are able to get more power or less weight, something might be done in the direction of an airship "heavier than air," and possibly the St. Louis Exhibition may show developments in this direction.

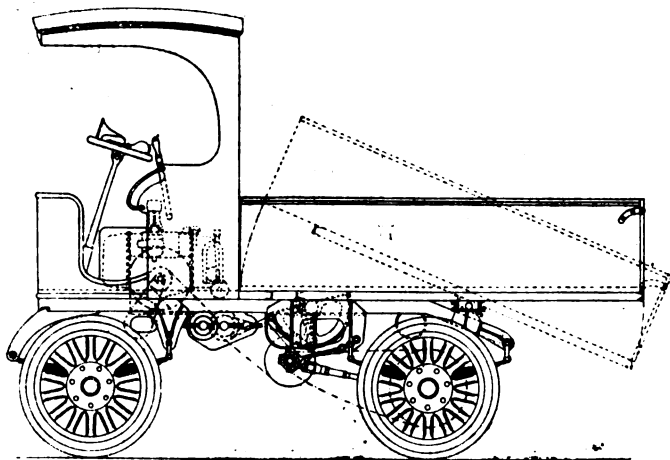
* From a paper read at the Automobile Club on Thursday, February 18th.

CASES DISMISSED.

At the Dorchester County Police Court, on Saturday, Dr. Wm. Ernest Good, police physician, was charged under the Light Locomotives Act with driving a motor-car on January 29th at 6.15 p.m., at Stratton, without showing a red light at the rear. Dr. Good stated that he was carrying three lamps lighted, an acetylene lamp in the centre on the front, and a paraffin lamp on each side. Each side lamp showed a red light on the reverse. He had no tail light showing the number, but he was not charged, under the new Act, with not showing the number. Dr. Good produced the off-side lamp from his carriage, which was that night lit and exposing a red light at the back of the lamp. The lamp produced was one of the side lamps similar to those upon an ordinary carriage. The summons was dismissed.

At Bournemouth, Louis Clayton, of Westbourne, has been summoned for having driven a motor-car at an excessive speed in the Old Christchurch Road, on the 2nd inst. P.S. Tarrant stated that on the evening of the 2nd inst., whilst on duty in the Old Christchurch Road, he saw the motor-car. Shortly after he passed the car it started, and defendant apparently "put on a lot of power," as the car went at a considerable speed down the road. At the time a tram-car was coming round the curve. The car pulled up immediately, but the motor-car struck it on the off side, the impact driving the motor-car on the kerb. The Rev. Charles Seagrim, curate at St. Peter's Church, said he was watching the car at the time of the accident, and made a remark to several persons that it was clearly a case of skidding. The driver of the motor-car was going perfectly steadily at a pace of between six and seven miles an hour. The Bench, after a short retirement, found that, from the evidence given, which was very distinct on both sides, there was a doubt in the case, and they dismissed it.

MR. STEPHEN SIBLEY, of Richmond, was summoned before the Woking county magistrates on Saturday for driving his motor-car at a speed exceeding the legal limit of twenty miles per hour at Ripley on January 24th. He pleaded not guilty. Sergeant Jarrett stated that the car covered the one hundred and seventy-six yards in 14.2-5 sec.,



The Arrol-Johnston 12-h.p. Estate Wagon. (See page 989, last issue.)

which was at the rate of twenty-five miles per hour. Police-constable Pink said he stopped the car on receiving the sergeant's signal. It was going fast, but he should not like to estimate the rate of speed. Mr. Staplee Firth (instructed by the Motor Union) pointed out that the new Act provided that a person should not be convicted merely on the opinion of one witness as to the rate of speed, and contended that on this point alone the prosecution must fail. In the result the chairman (Sir W. Chance) said they did not propose to give any opinion on the point which had been raised, but they were not satisfied that there might not have been an error in this case on account of the small margin between twenty and twenty-five miles. Therefore the case would be dismissed.

At Aylesbury Petty Sessions, the first case under the new Motor-car Act for the county, with reference to the speed of cars, came before the Bench. Mr. William Fletcher, of Dadbrook, Widdington, was summoned for driving his motor-car in Aylesbury to the public danger. Mr. R. S. Wood, solicitor, defended. Mr. William Crouch, Clerk to the Bucks County Council, stated that he saw the defendant driving at a very high speed in Oxford Road, Aylesbury. He was just able to distinguish the number of the car. Mr. Wood, for the defence, contended that the case was not proved, as it was not shown at what speed the car was travelling. If this case were upheld, it would be open to anyone to lay an information, if he thought a car was proceeding at a dangerous speed. The Chairman of the Bench (Mr. T. Gurney) said they would dismiss the case on defendant paying the costs, but he must be very careful how he drove in future.

AN ECHO OF OLD TIMES.

At the Hailsham Petty Sessions, Edward Lehwess, of Curzon Street, London, was summoned for driving a motor-car to the common

danger in the highway, Dicker, on July 28th, 1903. This was an old case instituted before the present Act came into force. Defendant did not appear. P.C. Waghorn, of Lewes, gave evidence of timing the car over a measured furlong, which, he said, was covered at a speed representing thirty-two miles an hour. A fine of £10, with 7s. costs, was imposed.

CLAIM FOR DAMAGES.

MR. JUSTICE WILLS and a special jury, in the King's Bench Division, has heard the case of *Wethered v. Motor Manufacturing Company, Limited*. This was an action brought by Mr. Henry Wethered, of Malden, Surrey, against the Motor Manufacturing Company, Limited, to recover £395, the amount which he had paid for a motor-car. Defendants denied liability. The plaintiff's case was that he gave an order for a 10-h.p. motor-car at the exhibition held at the Agricultural Hall in March, 1903, and that it was delivered to him at Eastbourne. The car broke down on several occasions, and plaintiff said he sent it back to be overhauled. It was returned to him and stated to be in good working order. Plaintiff again tried the car, and he said that as it was not a success he returned it to the company and demanded his money on the ground that it was not what it had been represented. Defendants denied that the car was not equal to the description given of it, and alleged that the defects were due to inexperience on the part of the plaintiff or his servants. The jury returned a verdict for the plaintiff, awarding £300 damages. Judgment was entered accordingly, a stay of execution being granted pending an appeal.

THE PURCHASE OF A MOTOR-CAR.

IN the King's Bench Division of the High Court of Justice, Mr. Justice Buckley had before him an action, brought by Charles Garland against Julian Humphries, for £500 damages for alleged breach of contract for sale by the defendant to plaintiff of an 18-h.p. motor-car. Mr. Matthews, for the plaintiff, said that the defendant had filed an extraordinary plea. He admitted that he entered into a French contract with the plaintiff to procure delivery to him of the chassis of an 18-hp. Mercedes motor-car, 1903 model, with Mercedes body, at the price of £1,050, and that a sum of £350 was paid to the defendant by the plaintiff on account of such price, but said that no time was fixed for delivery, and that a reasonable time for the purpose had not elapsed at the commencement of the action. Mr. H. G. Burford, managing director of the Milnes-Daimler, Limited, Tottenham Court Road, W., said the value in the market of a car of the description contained in the contract, delivered at the end of May, 1903, would be about £1,350. He was delivering a car this month, which was sold about the same date at £1,400. He did not know the defendant. All cars were sold twelve months ahead. If such a car had been sold for immediate delivery, the price would have been about £1,450. Mr. Alfred Mansell, managing secretary of Automobilia, Oxford Street, W., said in his opinion the plaintiff could not, in the open market, have got a Mercedes open car at the end of 1903 for less than £1,300. Mr. Matthews submitted that the plea of defendant was a clear admission of breach of contract, and that the plaintiff was entitled to the £500 damages which he claimed. His lordship gave judgment for the amount claimed, defendant not appearing.

CLUBS AND ASSOCIATIONS.

SOUTH WALES AND MONMOUTHSHIRE.

MR. GODFREY L. CLARK (Talygarn) presided at a meeting of the Automobile Club of South Wales and Monmouthshire, held last week at Cardiff, to consider *inter alia* the recent proposals of the Newport Corporation to restrict the speed everywhere in the Borough of Newport to ten miles per hour. It was pointed out that these restrictions would have a serious bearing in regard to motorists in South Wales and the West of England. It was also noted that Glamorgan county and Cardiff had placed no such limit. The hon. sec. was instructed to send votes of thanks to the Glamorgan County Council and to the Cardiff Corporation for having expressed their willingness to give the present Act a trial without restrictions, and a hope was expressed that the confidence thus reposed would not be abused by motorists.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

To insure insertion communications and contributions must be in the Editor's hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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